PD-ACD-474

"Restoring hope through Technology"

Final Performance Report
October 1, 2003 thru December 31, 2005

Grant ID# EPP-G-00-03-00021-00
USAID IT Platform Project

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MMC Overview

From the tenacious efforts of its founders, Frank and Peg Brady, Medical Missions for Children (MMC) has emerged as an important participant in the global health care community. Today, by harnessing the power and generosity of key corporate relationships (e.g. Polycom, Intelsat, PanAmSat, UPS), strategic partners (e.g., USAID, World Bank, United Nations), and leading health providers (e.g., Johns Hopkins Medical Center, Yale University School of Medicine, Baylor College of Medicine), MMC has created and now manages its Global Telemedicine & Teaching Network™ (GTTN). The GTTN is a satellite and Internet-based communications platform that supports the real-time treatment of remote, critically ill children, while simultaneously broadcasting an extensive program of continuing medical education, and supporting dialogue exchanges among a global network of medical specialists.

Since its inception, MMC has capitalized on the tax write-off benefits of IRS Rule 170, successfully engaging the participation of corporations from within the communications technology, biotechnology and pharmaceutical sectors resulting in sizeable in-kind charitable contributions. These donations have dramatically enhanced MMC's ability to support its mission of providing medical assistance to critically-ill children living in underserved communities throughout the world.

To advise them on the medical issues that impact the procurement decisions, treatment protocols and practice guidelines surrounding the implementation of its programs, MMC has strengthened its ability to draw upon the knowledge and expertise of our country's finest physicians. Today, MMC benefits from the expertise of a U.S.-based network of medical specialists who are affiliated with twenty-six of our nations finest medical centers and university medical schools.

Bridging the gap with telemedicine

MMC's unique offering is its ability to create a "virtual information bridge" between the United States and medically underserved communities the world over. Medical specialists from the U.S. take part in interactive video conference sessions where they can consult on patient diagnosis, discuss new techniques and treatments, and respond to questions and concerns of physicians and patients alike. In addition, the GTTN is used for interactive learning sessions for physicians, nurses and administrators. Through the broadcasting of live symposiums, lectures and other medical content conferences on new medicines, vaccines, treatment techniques and biomedical technologies, care providers in underdeveloped countries can familiarize themselves with the advances of their profession. The programs for each participating hospital (within each participating country) are custom tailored to meet their specific needs.

Project Accomplishments

Since the inception of the USAID-funded Project Lifeline program, Medical Missions for Children (MMC) has channeled in efforts toward the accomplishment of four (4) primary objectives: (1) the selection of five medically- and technologically-suited recipient healthcare facilities in the grant's pre-selected Latin American countries, (2) the acquisition and implementation of a suite of satellite and Internet Protocol (IP) communication technology components to serve as the infrastructure for a medical teleconference and education broadcast facility, (3) the development of a network of U.S.-based tier-one medical centers

to serve as the nucleus for the acquisition of reliable medical content, and (4) the production of broadcast quality pre-recorded and live medical education programs for airing on MMC's Global Telemedicine and Teaching Network™ (GTTN). Provided below is an overview of MMC's accomplishments during the time period from January 1 through December 31, 2004.

During the twelve months that represented to life of this federal grant, MMC has focused a great deal of its efforts on solidifying working relationships with key medical, administrative and technical personnel at each of its five recipient healthcare facilities selected as participants in Project Lifeline – one in Bolivia, one in Brazil, one in Guatemala, one in Mexico and one in Panama – to bring the project to completion. Additionally, MMC's focus throughout the year has been on the development of a set of satellite equipment installation guidelines, which has required site surveys of each facility by both MMC and its local technology partners. Finally, MMC cultivated relationships with national government representatives and customs clearance agencies from each country to pave the way for the problem-free arrival of all satellite and ancillary communications equipment into each recipient country.

After successfully identifying technology suppliers from which to acquire all of the components required to activate a receive-only satellite transmission signal to each of its selected Latin American healthcare institutions, MMC placed orders with each of the companies for all needed equipment. MMC also negotiated installation agreements with indigenous satellite communications installers. During the months of October and November, the satellite transmission equipment required to activate an FCC-certified broadcast station was installed at each of the following six locations:

Satellite Installation Locations

Hospital del Niño
LaPaz, Bolivia

Universidad do Estado do Rio de Janeiro - UERJ
Rio de Janeiro, Brazil

Universidad Rafael Landiver
Guatemala, C.A.

Sistema CRIT
Mexico City, Mexico

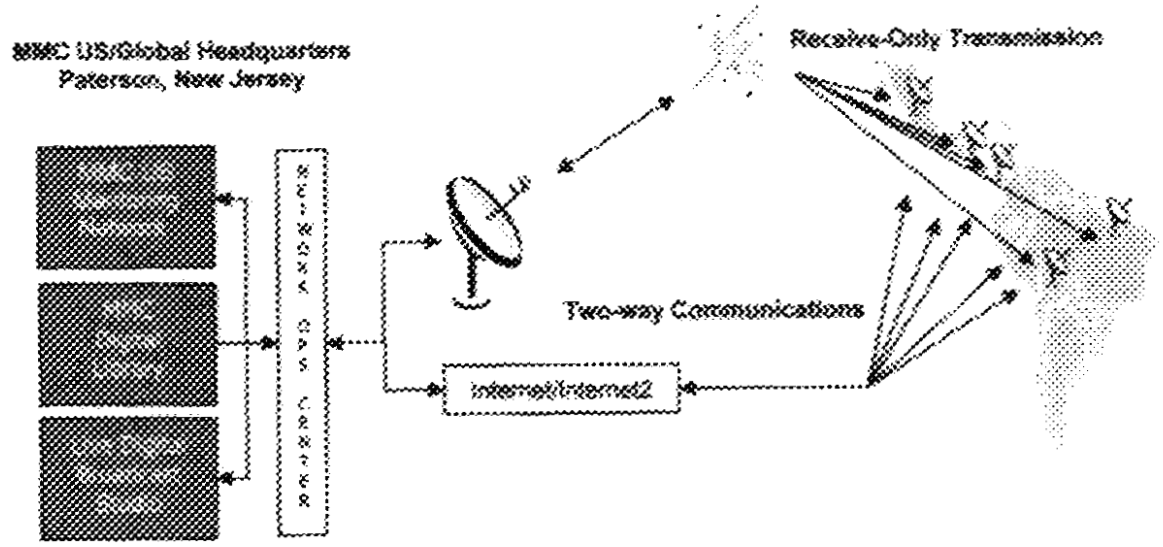
Hospital del Niño
Panama City, Panama

Medical Missions for Children Headquarters
Paterson, New Jersey

At the conclusion of the installation phase, all satellite broadcast equipment was then tested for signal quality and subsequently used to transmit medical education content from MMC's Network Operations Center to the five receive-only sites. At this time each of the five site is in full operation.

An additional component of the technology infrastructure installed into each of the above-referenced facilities, was a Polycom-manufactured Viewstation 7000. The installation of this device allows for real-time, interactive dialogue exchange between doctors in the United States and doctors in each of the program's five participating countries. With this capability, Latin America-based physicians can now involve their North American counterparts in the examination, diagnosis and treatment of children with infections or other medical complications that extend beyond the understanding of the responsible physician.

Presented below is a graphic depiction of the satellite and IP-based communications infrastructure installed as part of MMC obligation to the USAID grant that it received:



Throughout the year, MMC continued to nurture its relationships with the key medical content providers within its mentoring hospital network. To ensure both the integrity and quality of this medical content, MMC also mobilized the technological resources and production talents needed to create the highest-grade medical education segments on a variety of pediatric and adult primary and specialty care topics. As this is a key component of MMC's mission beyond the life of this grant, it is anticipated that 500 hours of additional medical content will be available to the five previously mentioned medical institutions.

MMC has and will continue to manage the in-house production of medical education content for distribution via the GTTN. As original content is gathered, MMC digitally produces broadcast quality and streaming media in both MPEG 2 and MPEG 4 formats. All filming, non-linear editing, and reproduction are managed by MMC's in-house studio production facilities. Content provided by MMC's medical partners is first forwarded to MMC where it is then reformatted (from a standard video signal to a digital signal), edit and then encoded for satellite or streaming broadcast as well as stored for future access.

Project Difficulties

During the preliminary design phase of the program, MMC was faced with a temporary setback. One of the principal deliverable components of the IT platform project, (the satellite space segment donated by Intelsat Corporation), was restructured. On May 25, 2004, Intelsat notified MMC that the transponder space segment and the Digital Video Broadcast (DVB) Service that it had previously donated to MMC's Project Lifeline program were being discontinued. This situation presented a serious and unanticipated roadblock since much of the equipment (satellite dishes and associated electronics) that had already been ordered was designed specifically to support the specific type of satellite communication service that had been donated.

Fortunately, MMC was able to cancel all of the equipment that was ordered from its various manufacturers without incurring any financial penalties. However, much of the work that had been done to date was lost, requiring MMC to rethink and restart on its development effort. Additionally, as a result

of the Intelsat and other related events during the first six months of 2004, MMC's satellite technology consultant made the decision to resign from the project.

At the time of the consultant's resignation, the project design and implementation was transferred to other individuals immediately and MMC is pleased to report that it successfully: (1) enlisted Intelsat to continue with its donor relationship with MMC, resulting in the contribution of more powerful satellite facilities and services, (2) engaged an ex-Intelsat chief engineer to mentor MMC through the design and implementation of the Project Lifeline satellite network, as well serve as the liaison between MMC and Intelsat, (3) chose a new supplier of DVB hardware and software to both meet and exceed the original project requirements, and (4) completed the analysis to determine the feasibility of creating an operational Teleport at MMC's headquarters.

Having successfully navigated its way through the satellite technology reconfiguration that was required of MMC, the only other real difficulties that the organization faced was the identification of acceptable delivery dates for the equipment ordered through each of the selected manufacturers. Through the cooperation of both the manufacturers and the in-country installation partners, all technology was successfully installed and tested by December 31, 2004.

Inception-to-December 31, 2004 Project Expense Summary

Expense Category	Amount
Personnel	$345,153.83
Fringe Benefits	38,129.52
Travel	47,288.26
Equipment	305,564.62
Supplies	10,867.20
Contractual	237,935.96
Other Direct	15,060.61
Inception-to-Date Expense Total	**$1,000,000.00**

Final Summary of Completed Activities

- Identification, acquisition, delivery, installation and testing of receive-only satellite communications and related equipment in selected hospitals in Bolivia, Brazil, Guatemala, Mexico and Panama.
- Installation and testing of Polycom telemedicine communications and related equipment at each of the five hospital sites located in Mexico, Guatemala, Panama, Brazil and Bolivia.
- Configuration and installation of U.S.-based (Paterson, NJ) FCC certified teleport to transmit to each of the five project sites.
- Production of pre-recorded medical education materials for broadcast beginning in January 2005.
- Development and cultivation of a U.S.-based twenty-six hospital/medical center mentoring network to support medical content development and telemedicine consultations.

Conclusion

Medical Missions for Children is grateful to the United States Agency for International Development for its financial support and its confidence in our organization throughout the various stages of implementation of Project Lifeline. We look forward to the next opportunity to work in collaboration with USAID and its Global Development Alliance. Thank you!