COLLABORATIVE NETWORK TECHNOLOGIES

FieldMetrix™ Home Care Edition – Field Trials Summary

White Paper

October 22, 2004

Introduction

Throughout the development and evolution of the FieldMetrix technology a series of live field trials have been conducted in operational home care and nursing settings to gauge how well the product works in the real world. The results of these trials have been used to refine and enhance the product from both a technology and end user perspective. This document addresses two specific field trials that have been conducted - a trial in an urban environment using wireless connectivity, and a trial with three First Nations communities in rural settings, two in Atlantic Canada and one in Ontario.

Urban Trial – Health and Community Services – St. John's Region (Canada - 2001)

The first trial of the prototype application was conducted in October of 2001, equipping of a complete nurse team from the St. John's department of Health and Community Services(HCCSJR) with the product, to be utilized in a downtown urban environment. Connectivity was via wireless cellular service, provided by a local telecommunications. The trial ran for one month, with four nurses supporting twelve clients with the product. A total of sixty (60) client services were delivered during the trial.

Based upon the review of the trial results and the follow-on discussions with the nurses and their management (including the completion of detailed before and after survey processes with the nurses) the following conclusions were drawn from the trial.

1. The field trial validated the basic operational and functional assumptions that underlay the products design and work-flow models. The trial users seemed generally satisfied with the overall application, with the suggested revisions being detail enhancements that were expected to arise within the trial, not major gaps in the application model.

2. Data integration with other health care and client management applications was identified as a critical component of any future trials and production implementations of technology.

3. Despite the short duration of the trial and the lack of data integration with existing systems, the management of HCSSJR has recognized the potential benefit of the technology and its data integration capabilities.

4. Connectivity will be a major issue for future pilots or production applications. Problems with wireless service

reliability encountered within this trial indicate a requirement for greater involvement of the wireless service providers in the trial planning process, with the provider also playing an active role throughout the project. Additionally, prior to the commencement of any future implementations an assessment of the telecommunications environment should be made to identify and resolve connectivity issues before implementation begins.

5. Given some reliability performance issues that arose with the Point of Care (POC) devices during the trial was felt necessary to identify alternative Palm-based platforms (either integrated devices or Palm/modem combinations) and benchmark these under operational conditions to develop a preferred deployment platform for the POC device. Devices such the Palm Treo 600 are the preferred type for FieldMetrix deployments in wireless environments.

6. As implemented, The POC application was easy to use and the users become proficient in its use within a very short time. The training program and support materials developed were effective from a delivery and user standpoint. On the basis of the trial program the project team developed a "Train the Trainer" program to facilitate the training and orientation of larger user groups.

7. The next revision of the product needed to incorporate the feedback from the trial nurses in terms of key elements required in the service delivery area. These included:
    a. Support for Physicians Notes;
    b. Support for additional descriptive text fields within the service definitions as well as a summary descriptive field for the overall service;
    c. Enhanced flexibility in terms of data editing and vital statistics measurements within the service delivery components of the service.

8. Planning this type of trial needs to take into account the human resource capacity and schedule constraints of the trial group, particularly in the current environment where many organizations are working at or near capacity and under tight budgets.

First Nations Trial – Canada (2002)

Following the completion of the urban trials with HCSSJR the Colabnet project team undertook a re-development of the technology to reflect the outcomes of the trial as well to incorporate some features that had been missing from the initial version. As this work was ongoing, Colabnet was presented with the opportunity to conduct an expanded trial of the technology with three First Nations Communities in Canada - Eskasoni, in Nova Scotia, Tobique in New Brunswick, and Tyendinaga in Ontario - under the sponsorship of Health Canada's First Nations Inuit Health Branch (FNIHB). The trial was initiated with FNIHB to explore the operational utility of handheld computers to support the delivery of home care services at the point of care in three First Nations communities.

The trial was funded by Government-Online and through contribution agreements with the participating communities. It was initiated in March of 2002 with first deployments of product and training in late April of 2002. Subsequent roll-outs of systems occurred over May and June, with the last site implemented in early July.

The goals of the trial were to evaluate the effectiveness of the handheld software along with the Procura Community Health Management desktop software in improving and measuring the quality and consistency of Home Care services in the participating communities. At the same time the trial attempted to measure the effects of the system on time per visit and time spent charting.

During the trial, home care employees in the communities' health centers were trained in the use of the Procura application to manage staff and client information, build Care Plans for active clients, and schedule visits for staff. Home care service providers were trained in the use of the FieldMetrix application and Palm pilot usage.

At the time of the Trial, the participating communities were at very different stages in their implementation of their home care programs, with one having an emphasis on nursing services, another on the provision of home support and personal care services, and the third only beginning to establish their nursing services. The home care participants also had varying levels of computer knowledge. Those participants with less experience naturally had a longer learning curve, and it also took longer for them to be comfortable enough with the tools to make them operationally productive.

At the end of the trial, a survey was conducted of the users to assess their experience during the trial; and to support the analysis of the overall effects of the trial and any conclusions or recommendations made to FNIHB.

The FieldMetrix-enabled POC devices were well received as being very easy to use and helpful in tracking service delivery. The application was also well received and considered easy to use, but being a new software application, incurred some initial configuration issues that delayed effective use for several weeks after implementation, with some intermittent data issues that were quickly resolved. Despite these issues, the trial sites saw value in the use of the tool if some small changes could be made to the work-flow model to better reflect how they worked.

The POC application also provided a basic Assessment tool that received some rigorous use, mostly in Eskasoni. Their observations on the assessment tool were that the large amount of detailed information required in the assessment process was not well suited to the small screen of the handheld, and that

even though portable keyboards were provided for the trial, the nature of the Palm OS interface and the portable keyboard did not lend itself to effective entry of this quantity of information. The recommendation was to either provide a cut-down version of the assessment tool for the POC device, or move the full-scale assessment tool to a laptop platform, while continuing to use the handheld computers for service provision.

All of the communities would have preferred the trial to have been longer, given the learning curve for the use of computers, the software issues, and the general delays in accommodating summer vacation schedules. Each trial site has expressed a strong interest in continuing to use the products, provided the continuing licensing requirements could be met, and provided that FNIHB was prepared to support their continued use of these tools. To date the systems are still operational in Tobique and Quinte.