National Association of Counties 2006 Achievement Award Program
Nomination Summary
Mobile Remote Workforce, County of San Diego, California

1. Abstract of the Program

In 2005, the County of San Diego Health and Human Services Agency (HHSA) Mobile Remote Workforce Pilot Project was developed to streamline and improve service delivery when providing public health nursing services to at-risk families.

The Mobile Remote Workforce Pilot Project (MRW), by using remote technology, increases the time Public Health Nurses (PHNs) spend visiting at-risk families with newborns, infants and children while it decreases the time PHNs spend completing paperwork. The MRW improved inefficient business processes by enhancing the use of automation technology resulting in a program design that expedites the intake process and reduces administrative tasks.

The pilot project is complete and has demonstrated a 25% sustainable increase in productivity for family services. Plans have been developed to expand the pilot project to other County programs to increase efficiency, lower costs and provide better service to our citizens.

2. The Problem/ Need for the Program

HHSA provides public health nursing services through public health centers in six geographical service regions. PHNs frequently provide these services through field visits to at-risk families with newborns, infants and children. Extensive mandatory case narrative and other manual documentation, scheduling, travel time, and other administrative functions limited the amount of time available for PHNs to perform additional customer care for at-risk families with children.

The MRW Pilot project used the following principles to quantify the need for the Pilot project:

- Maximizing staff productivity in managing public service programs
- Improving efficiency, customer/employee satisfaction and setting measurable outcomes in public service programs
- Increasing PHNs efficiency in the field allows an increased number of families to be served without additional resources
- Receiving complete, accurate and appropriate public health referrals creates more time for nurses to be in the field with at-risk families and children rather than in the office processing paperwork.

3. Description of the Program

Background

On February 1, 2005**,** HHSA initiated a Business Process Re-engineering (BPR) of PHN activities to identify areas to increase their available time for client contact and reduce the time spent on administrative functions through re-engineering and technological enhancements.

Goals and Objectives

The overall pilot project goal of increasing operational efficiency was established with specific performance outcomes:

- Increase 20-25% of time available by PHNs for customer (at-risk families and children) services
- Reduce 50% of time elapsed between PHN case referral and customer contact
- Improve customer and employee (Public Health Center staff) satisfaction

Project Management Team

In January 2005, The County's Chief Administrative Officer selected a program manager for this pilot project. In addition, a Mobile Remote Workforce Committee was developed to manage the pilot project which included representatives from Executive Administration, Budget, Privacy/Compliance, Human Resources, and Public Health Operations. Contractors included the University of California San Diego (UCSD) School of Medicine and Pennant Alliance. UCSD School of Medicine was hired as an independent contractor to provide assessment and evaluation of the pilot project. Both County and private sector experts provided technical architecture and automation enhancements. Five work teams were formed to develop segments of the re-engineering process. The teams included: Design, Information Technology (IT), Human Resources (HR), Finance, and Evaluation.

Project Milestones

This pilot project was completed in twelve months which was divided into three transitional phases. The three phases included the following major milestones:

Phase One – Assessed all Existing Operations (2/1/05-6/30/05)

- Developed an action plan
- Developed a preliminary funding plan for pilot project implementation
- Established baseline metrics of Public Health Nurses
- Started business process re-engineering
- During Phase One, the Design Team met with the contracted evaluator to identify specific processes to be re-engineered. The key focus was the referral assignment process

The Design Team, in consultation with the independent evaluator and information technology representatives, completed the operational assessment and developed a plan to re-engineer the referral process. New policies and procedures were established creating Accurate, Complete and Appropriate (ACA) referral standards.

To further facilitate the ACA referral process, HHSA contracted with Pennant Alliance to develop a web-based referral system. The web-based referral system and other technological enhancements will be defined in section 4.

Weekly Design Team meetings were held to track the implementation of the new referral process. Members of the Design Team included PHNs and staff from the pilot group. This assured transparency of the pilot project and mutual agreement from those individuals actually working with the new process.

Phase Two – Operational Process Enhancements (7/1/05-9/30/05)

- Established pilot and control groups
- Implemented revised business process re-engineering
- Implemented redesigned forms and streamlined operational procedures
- Collected data to assess performance outcomes
- Completed business process re-engineering

During Phase Two, pilot and control groups were created. The pilot group implemented the process re-engineering after receiving training on the ACA referral standards. New duties, responsibilities and procedures were thoroughly discussed with appropriate staff to ensure compliance with the required changes. Clerical staff tracked all referrals and PHNs completed detailed time studies that replicated baseline data gathered under the guidance and instruction of the contracted performance evaluator.

Major referring agencies were identified for participation in the web-based referral system. Training was given to all participating referral agencies.

Phase Two also included the design of a new software application called "Public Health Nursing in the Community" (PHIX). This application was designed to improve the efficiency of tracking PHN case assignments and also allowed PHNs to complete mandatory case documentation while in the field via electronic tablets. The electronic tablets effectively serve as a cross between a spiral-bound notebook and a laptop computer. Implementation of this process took place in Phase Three.

Phase Three – Implemented Technological Enhancements (10/1/05-1/31/06)

- Developed ongoing funding plan for pilot project implementation
- Implemented automation enhancements/trained pilot group
- Collected data to assess performance outcomes with technological enhancements
- Presented final report/evaluation

The control group began applying the ACA standards to all referrals in Phase Three. However, they did not use the web-based referral system during the pilot. This enabled measurement of the web-based referral system's contribution to the improvement of the referral process.

The pilot group implemented the PHIX software application. This application was available to PHNs in the field using the electronic tablet. These technological enhancements required close coordination between automation staff and the pilot group. Extended training was required on the use of the electronic tablets and the PHIX application. All training was completed.

At the conclusion of Phase Three, the evaluator gathered performance data and compared the results to baseline data gathered in the first two phases. This two-tiered methodology enabled results of individual aspects of the pilot project to be separately evaluated. The implementation of the ACA referral standards was compared with baseline data gathered in

Phase One as well as the change in the control group performance in Phase Three. The pilot group performance in Phase Three was compared to the baseline data utilizing the PHIX application and electronic tablets. Phase Three data from the pilot group was also compared to Phase Three data from the control group.

4. Use of Technology

Technology was an integral part of the re-engineering process to assist in achieving the goal of increased operational efficiency. Technological enhancements were divided into three primary areas.

1. Web-based referral system implemented to:

- Improve the standardizing of information collected by requiring complete and accurate information
- Improve the speed with which referrals are received and processed by allowing expedited referrals
- Permit referral sources to meet Joint Commission on Accreditation of Healthcare Organizations requirements by tracking their referrals for disposition and assignment

2. The Public Health Nurses database (PHIX) developed to:

- Automate many of the tasks previously performed by PHNs in the office
- Allow referral tracking from start to finish from the field
- Assign cases electronically and notified PHNs of new assignments while in the field
- Create electronic forms to replace paper forms allowing these administrative tasks to be performed in the field while the information was fresh in the PHN's mind

3. Electronic tablets utilized to:

- Provide remote access to PHIX case records and new referrals in the field allowing PHNs to contact the family the same day without returning to the office
- Add case charting capabilities in the field with automatic storage of data in PHIX
- Implement electronic scheduling and case assignments while in the field
- Allow access to other County databases and web medical resources for consultation and education with families while in the field

5. The Cost of the Program

The cost of implementing the program in a Public Health Clinic involves primarily capital costs for equipment and IT costs for software and programming. Ongoing operational costs are minimal. The costs associated with the Business Process Re-engineering and the web-based referral system was primarily programming and software charges. County staff costs (including training) were covered by existing allocation.

Information Technology	One Time Costs	Ongoing Costs	Total
Labor Costs including consultant and web development			
Base Services	$512,270		$512,270
Other Services	$244,200		$244,200
Software	0		
Adesso Software, incl. Travel & training	$17,220		$17,220
Mi-Forms Software	$10,830		$10,830
Hardware	0		
Tablet PC's $394 ea	$6,300		$6,300
Tablet PC's $244/month/Tablet PC.	0	$15,600	$15,600
Monthly wireless charge $66 ea	0	$4,249	$4,249
Docking Station $260 ea	$780	0	$780
Pilot projected hardware costs	$12,751		$12,751
Total IT Costs	$804,351	$19,849	$824,200
Evaluation Costs	$19,800	$0	$19,800
Total Pilot Costs	$824,151	$19,849	$844,000

6. The Results/Success of the Program

Outcome measure results

- Increased productivity for customer services by 25%
- Reduced time elapsed between case referral and customer contact by 50%
- Improve customer and employee satisfaction
  - ✓ Improved employee job satisfaction by increasing staff freedom to remain in the field to complete paperwork and receive new assignments electronically
  - ✓ Increased referring agencies (customers) satisfaction to 100% by implementing a time-saving referral system that was simple and consistent.
  - ✓ Increased satisfaction of customers surveyed who expressed they would like the process implemented for all county services

Additional benefits and value

- Developed and implemented Policies and Procedures for ACA referral standards that:
  - ✓ Outlined job responsibilities and identified appropriate and measurable performance outcomes thus reducing the time it took the referral to reach the PHN (prior range from 1 to 74 days) to one day for 100% of the referrals
  - ✓ Reduced the "unable to locate" referrals from 33% to 11%
  - ✓ Increased the number of first contacts made within a month from 8.7 to 15.2 per month representing a 75% increase
- Cost Benefit Analysis
  - ✓ Reduced the average cost to process referrals by 90% (the difference between a PHN at a mean $31.35 per hour vs. a clerk at a mean of $14.78 per hour plus the nearly

100% improvement in completeness of the referrals). Estimated pilot projected savings for 1000 referrals in pilot group are $47,920 per year

- ✓ Reduced unit costs from $1064 per visit to $852 per visit

7. Worthiness of an Award

The Mobile Remote Workforce Pilot project represents an innovative and creative approach for bringing enhanced services to at-risk children and families in their home while decreasing county costs. An independent performance evaluation by the UCSD School of Medicine verified measurable results consistent with acceptable governmental and financial management practices and promoted general governmental accountability. Value added in these areas:

Service Excellence

- Filled gaps in availability of existing services resulting in measurable increases in protective services that improved potentially dangerous conditions to more families with at-risk children
- Enhanced the level and satisfaction of citizen participation in understanding the role of PHNs in the community by collaborating more closely with our community partners

Cost Efficiency

- Conducted a cost benefit analysis and determined that the pilot project will pay for itself in two years and reap hundreds of thousands of taxpayer dollars in the future
- Improved the cost effectiveness of an existing county government program and will continue to attain savings as the pilot project is implemented in other County departments and programs

Transferability/Replication

- Proceeding with implementation of web based referrals and business process re-engineering in all HHSA Public Health Centers because of the success of the pilot project
- Developing plan to determine adaptability of the business process re-engineering to other county departments

Innovative/Best Practices

- Introduced state of the art re-engineering processes that increased workforce productivity
- Upgraded the working conditions of county employees by providing cutting edge technology that allowed nurses to remain in the field longer without repeated trips to the office to receive new case assignments or record case documentation
- Increased job satisfaction and level of training due to transparency and inclusion of staff at all stages on the process