

2011 BETTER GOVERNMENT COMPETITION

Program Name: Mobile Remote Workforce (MRW) Business Process Reengineering Pilot Project

Administering Agency(if applicable): County of San Diego- Health and Human Services Agency-
Public Health Services

Contact Person (Name & Title): Annamarie Tirsbier, Senior PHN, Project Manager

Address: 1700 Pacific Highway, Rm 301, San Diego, CA 92101

Telephone Number(s): 619-515-6511

E-mail Address: Annamarie.Tirsbier@sdcounty.ca.gov

In 2005 the County of San Diego Health and Human Services Agency (HHS) developed the Mobile Remote Workforce (MRW) Business Process Reengineering Pilot Project with the goal of streamlining and improving service delivery in the field. Public Health Nursing (PHN) was identified for using business process re-engineering techniques and modern technology aimed at increasing the efficiency of interactions between Public Health Nurses (PHNs) and the clients they serve.

Prior to this project, Public Health Centers received paper based referrals from agencies (e.g. hospitals, community agencies, internal County branches). Client information documented on paper referrals was found to be incomplete and inaccurate which added to the process time. The Public Health Nursing workforce was selected to map, streamline and standardize two core processes: (1) the process for receiving and processing a request for PHN service, and (2) PHN documentation from admission to case closure. The analysis of the referral process also showed that many referrals received in the Public Health Centers contained incomplete and inaccurate information for the client and incomplete information for the services requested or needed. Additional analysis showed that referrals were frequently received and processed that did not require Public Health Nursing services. These inappropriate referrals took time from the Public Health Nurses that could be applied to appropriate referrals.

The procedure of processing referrals received from referring agencies was selected as the area to be re-engineered. The design was planned to reduce the complexity of the assignment process and thereby reduce time spent by Public Health Nurses locating and contacting clients in order to provide service. Three changes were implemented to achieve the expected results (1) re-design of the referral process, (2) creation of a web based referral system and (3) creation of an electronic documentation system.

In 2005, a pilot was conducted at the North Inland and North Coastal Public Health Centers. The pilot showed an increase in the number of clients served by 25%, demonstrated 75% reduction of time elapsed between case referral and customer contact, improved referral source satisfaction with PHN Service and increased satisfaction with the re-engineering process. The Accurate, Complete and Appropriate Referral (ACAR) standard process was developed to decrease the number of referrals received in the Public Health Centers that contained incomplete and inaccurate information for the client and incomplete information for the services requested or needed.

In 2005-2006, a Mobile Remote Workforce (MRW) pilot was conducted using the rollout data collected from the two health centers. The MRW Rollout was divided into two primary functional areas: (1) expanding the Accurate, Complete and Appropriate Referral (ACAR) standard process to all sites, to include the use of the electronic referral system, PHIX Web and (2) further explore the utility of providing all PHNs with a tablet connected wirelessly to the county network so that client-centered work could be completed offsite. The Accurate, Complete and Appropriate Referral (ACAR) standard was finalized and adopted by the six Public Health Centers. PHIX (or Public Health Nurses in the Community) software was developed and rolled out in 2008 to all health centers, with three components: PHIX Web, PHIX Office, and PHIX Field. The pilot was funded with health realignment revenue. The start-up costs are shown in the chart below.

Start-up Costs Associated with Mobile Remote Workforce Project				
Item	Pilot	Rollout	Total Costs	
Application Services				
Base Services	504,435			
Other Services	211,540			
Consultant Fees (UCSD School of Medicine)	9,000			
Bug Fixes and Enhancements		40,165		
PHIX Application (Case Management database)		3,235		
PHIX Web Development		111,656		
Portfolio Application Fixes		3,346		
PHIX P2B3		244,081		
Total Application Services	\$724,975	\$402,483		\$1,127,458
Software Costs				
Adesso Software	17,220			
MI-Forms Software	10,830			
MICROSOFT SQL 2005		10,687		
Geocoder		770		
Total Software Costs	\$28,050	\$11,547		\$39,597
Hardware Costs				
Initial Tablet Purchase	5,555			
Wireless Cards	280	1,540		
Docking Stations		27,299		
Peripheral Equipment (monitor, keyboard and mouse)		38,114		
External Drive		13,650		
Total Hardware Costs	\$5,835	\$79,063		\$84,898

Evaluation Costs			
Pilot	19,800		
Rollout		30,200	
Total Evaluation Costs	\$19,800	\$30,200	\$50,000
Total Costs	\$750,610	\$444,140	\$1,301,863

The cost of maintaining the MRW project is minimal. Ongoing costs are absorbed into the annual operating budget of each of the six regional public health centers funded with state health realignment revenue. Most of the annual cost for MRW is costs previously incurred in the old process. The chart below compares pre MRW costs to post MRW costs.

Annual Funding Cost for Mobile Remote Workforce Project			
Item	Previous Costs	MRW Costs	Additional Cost
Monthly Funding Costs (per unit)			
Electronic tablets (Replaced Desktop	96	141	45
End users LAN connection	85	85	0
Email account	11	11	0
Personal data storage on remote servers	4	4	0
Verizon Wireless Air Card	0	65	65
Total Monthly Funding Cost Per Unit	\$196	\$306	\$110
Total Annual Funding Cost Per Unit	\$2,352	\$3,672	\$1,320
Total Annual Agency Funding Cost (90 Units)	\$211,680	\$330,480	\$118,800

The web based referral system and use of tablets has been successful. To date, 178 agencies have been trained and continue to submit electronic referrals via PHIX Web system. In addition, 13 agencies have been re-trained during 2010 due to staff turnover. Public Health Nursing received 5867 web referrals from July 2009-June 2010. The six Public Health Centers continue to uphold the ACAR Standards and provide training when required and Public Health Nurses utilize the PHIX Office and Field applications to record and case manage their clients.

The third phase Mobile Remote Workforce, Business Process Re-Engineering project, will enable Public Health Nursing to maximize health, safety, and wellness in the community by incorporating best practice interventions into San Diego County PHN policies and procedures based on the standardized pathways of the Omaha System built within the CareFacts software.

Sandra is 17 years old, pregnant and living with her abusive boyfriend in a small apartment in San Diego. Prior to her present situation Sandra dropped out of high school and ran away

from her mother's home. Sandra is six weeks pregnant and still using drugs. It is her first pregnancy, she has received no medical care for her pregnancy and she has no healthcare coverage. Recently Sandra went to the local hospital's emergency room when she experienced stomach pains and became concerned about her child's health. The nurse on duty wrote some notes about Sandra's condition and faxed the information to the San Diego Public Health Center to refer Sandra for preventative health services provided by public health nurses.

When the fax is received by the Public Health Center the referral is missing the apartment number where Sandra lives. There is no phone number for Sandra and no information about Sandra's drug use or history of domestic violence. The nurse did not provide a telephone number for the Public Health Nurse to call and inquire about Sandra's emergency room visit. Days go by while attempts are made to fill in the gaps about Sandra, where she lives, who made the referral and why the referral was made. Visits to the apartment complex are unsuccessful because the public health nurse can't locate the correct apartment. Ten days later a public health nurse finally tracks Sandra down and offers her services, but unfortunately it is too late. Sandra has broken up with her boyfriend and moved leaving no forwarding address. Another opportunity to provide proper prenatal care for an at-risk mother has been lost. Months later Sandra gives birth to a premature infant with severe medical problems. Countless hours spent by the public health nurse trying to find Sandra were wasted when they could have been used more efficiently and effectively providing preventative health services for at-risk mothers and children.

That tragic end to Sandra's story has largely disappeared in the County of San Diego, Health and Human Services Agency Public Health Nursing thanks to the Mobile Remote Workforce (MRW) project. MRW, a business process reengineering project, was initiated to demonstrate that County services could be delivered more efficiently with lower administrative costs while increasing access to services with improved outcomes. A core component of the project was development of a standardized methodology that would nurture and encourage other operations to implement similar innovative projects to improve customer service and efficiency.

Definitions

Referral is a request for field Public Health Nursing service that delineates client information, referring agency information, and the reason service is needed.

Public Health Information System (PHIS): PHIS is a web-based application (Avatar) and is utilized as a tool for managing and tracking client services in Public Health Services programs. The system records data based on the information entered by staff, at the place of service. Client information such as demographics, service with diagnosis, insurance, and appointments is captured in PHIS.

PCN Module within PHIS: PCN developed a Case Management Module within PHIS to track individuals served by their department. The module went live in April of 2010. This module contains PCN referral information (e.g. Client demographics, Gravida, Para, EDC, etc) that Public Health Nursing would like to transfer over to our PHIX Web.

Public Health Nurses in the Community (PHIX): PHIX is an application for Public Health Nursing, and it consists of three major components. The first component is **PHIX Web**, which enables agencies to submit referrals via a web interface. The second component is **PHIX Office**, a workflow management application used for reviewing and assigning incoming **PHIX Web** referrals to Public Health Nurses and assisting in case management of cases (i.e. transferring or closing cases). The primary users are the Public Health Regional Office Assistants and Supervisors. The last component, **PHIX Field**, provides nurses the means to monitor their caseload remotely while making home visits in the community (i.e. open client to services, record/update client and family demographic information).

CareFacts: Software that incorporates utilization of the Omaha System, an electronic documentation system. **CareFacts was purchased by HEALTHCAREfirst in December 2010.*