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Demand Management and Darnall Army Community Hospital - A
Methodology for Implementation of Putting Prevention into
Practice

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Abstract

The Military Health System (MHS) is the largest managed care organization in the world. As such, the MHS is examining the way it provides health care to its beneficiaries with an eye towards reducing costs while at the same time improving both quality and access. One of the new ideas that resulted from this examination was the Putting Prevention into Practice (PPIP) program. The Office of the Assistant Secretary of Defense Health Affairs (OSDHA) directed all military treatment facilities would implement, in some fashion, PPIP by 1 April 1999. However, OSDHA did not make additional funding available to meet this requirement. Medical Centers and Activities were required to develop their own internal implementation plan based upon their individual capabilities. This project sets forth the implementation plan to be used for Darnall Army Community Hospital.

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Demand Management and Darnall Army Community Hospital - A
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Practice

Background

Cost, quality, and access are the pillars on which healthcare organizations developed the concept of managed care. The early years of managed care focused on allowing universal access to healthcare services by eligible beneficiaries. However, the steady increase in healthcare costs, coupled with decrease in revenue many healthcare organizations received, changed the focus to cost containment (Kongstvedt, 1996). Utilization management (UM) was one of the tools used by managed care organizations to control healthcare costs. Utilization management analyzes how healthcare services are used by patients and providers and determines the appropriateness of services used. Utilization management also identifies those processes that do not add value to the organization and seeks to realign or eliminate unprofitable aspect of an operation.

Military medicine and the Military Healthcare System (MHS) face a unique challenge in trying to implement utilization management - lack of a "moral hazard". Healthcare is available to eligible beneficiaries at little or no cost. Even when eligibility is clouded by inaccurate paperwork, patients can request and receive same day outpatient appointments. Utilization management within the MHS has become a risk management and process examiner, focusing only on the provider's use of healthcare services versus an entity that examines both

the patient and the organization. Within the MHS, the effectiveness of UM can not be accurately assessed because change within individual organizations is a lengthy process and any savings in cost are not allocated to the local Medical Treatment Facility (MTF).

A backlash of customer dissatisfaction with tight utilization management has led to the concept of demand management - empowering the healthcare consumer to take charge of his/her own well being (Partridge, 1996). Demand management is comprised of four elements: health improvement, decision improvement, disease management, and disability management. Each of the elements is equally important, however, health improvement and decision improvement are very closely related and have the greatest potential to reduce the overall cost of healthcare (MacStravic, 1998). Combining health improvement and decision improvement comprise the essence of the "Putting Prevention into ^oPractice" (PPIP) program. The name is new, however, the concept is not. An 1985 article in the Journal for Public Health Policy stated, "...society appears to be entering a third "public health" revolution. The first public health revolution dealt with communicable diseases, the second with chronic - noncommunicable disease, and now we look to advancing health as a resource for living" (Terris, 1985).

The PPIP campaign was initiated by the Department of Health and Human Services (HHS) in 1994. The purpose of the program was to "increase the healthy life spans of Americans by making disease prevention a standard part of medical practice". Then

assistant secretary for health, Philip R. Lee, MD, stated the effort would require no less than the reforming of medical care and extending healthy life by shifting primary care practices toward prevention (Marwick, 1994).

Conditions Which Prompted This Study

In March, 1998 the Assistant Secretary of Defense for Health Affairs (HA) published HA Policy 98-027, Put Prevention into Practice. This policy designated Service Model sites for the initial implementation of PPIP with data and lessons learned developed from them to be used to expand the program Department of Defense (DoD) wide. The HA policy directs all services to develop strategies and systems to successfully implement PPIP at all MTF's and Dental Treatment Facilities (DTF) worldwide. The full integration of PPIP and MHS operations is to be completed by April 1999.

In response to the HA policy, Colonel Kenneth L. Farmer, Darnall Army Community Hospital (DACH) commander, chartered a process action team (PAT) charged with developing a PPIP implementation plan for DACH. The PPIP PAT is interdisciplinary and includes physicians, community health nurses, data analysts, and administrators. This diversity is important in order to address all of the effects that PPIP will have on DACH's current and future patient care capabilities. The charter acknowledged that although no formal clinical preventive services are in place, preventive services are being offered at DACH. Incorporation of these diverse services into the formal PPIP plan is critical to success due to limited resources

(space, personnel, money) available at DACH. Space within DACH is at a premium; existing facilities must be utilized for the program. Currently, primary care managers (PCM's) at DACH have a higher PCM/patient ratio, 1:1303, than all but one facility within the Great Plains Regional Medical Command (GPRMC). Fiscal year (FY) 99 financial allocations to DACH will be at the FY 98 level - no additional monies are allocated for the implementation of PPIP programs.

Statement of the Problem

Given the requirements set forth in HA Policy 98-027 for the phased implementation of PPIP, develop a operational plan tailored specifically for successful implementation at DACH.

Literature Review

There are numerous articles that deal with the cost savings associated with demand management and the effectiveness of putting prevention into practice programs. The empowerment of the patient to determine his or her healthcare needs after interaction with and education from their PCM is a dynamic concept. The patient's ability to make appropriate decisions that lead to an improved state of health for that patient is the fundamental basis for the PPIP program. The DoD has recognized that PPIP is not only good for its patient population, but is also a long term means to reduce the overall costs of providing healthcare to its beneficiary population.

Demand. When healthcare services and illness are treated as a simple cause and effect relationship, the true utilization phenomenon is missed - an individual deciding what to do.

Examining the differences between who gets sick and who seeks care lead to a different way of understanding healthcare utilization and consequently, cost containment. If demand does not equate to illness, then solutions may lie outside the traditional medical model. Focusing on how someone responds to an illness experience differs from focusing on the illness itself (Lynch, Eddington, Johnson, 1996). A nonprofit health education organization, Healthwise, designed a health education project for four Southwestern Idaho counties. The goals of the project were to improve the quality of healthcare that participants provide at home in partnership with their doctors, increase satisfaction with the healthcare system, and reduce healthcare costs. Molly Mettler, project director states, "Partnership and cooperation are the keys. The project's goals are for patients to be informed about their health and to work in partnership with their doctors in managing their healthcare" (Sasenick, 1996).

Demand is composed of four components: morbidity, perceived need, patient preference, and nonhealth motives. The boundaries between these components are not distinct and there is much overlap. Prevention is the primary demand management tool for morbidity. Studies have indicated that there is the potential for \$1.3 billion in direct care cost savings if current methods for preventing disease were fully applied. Education is the primary influence on perceived need, and studies of asthmatics have shown a 75 percent decrease in readmission rates and a 54 percent decrease in hospital days for

patients given self-care information during an admission. Patient preference can be equated to informed consent. Patients of a health plan that were shown a video on the possible outcomes due to having surgery for benign prostatic hyperplasia had a 50 percent reduction in the surgical rate for this procedure as opposed to those that did not view the video. Nonhealth motives may be equated to "moral hazard"; and there is little quantitative data to illustrate its effect upon demand management (Vickery, Lynch 1995). Teaching consumers to make safe, appropriate and informed healthcare choices can yield a shortterm cost benefit. Demand management programs have reported a 7 to 17 percent decrease in utilization through patient education (Terry, 1998).

Demand management, by identifying patients facing a major health decision, considering a procedure with varied preferred methods of treatment, or lacking resources about their options, can find opportunities to support the individual's involvement in decisionmaking. The results of such involvement include increased satisfaction with care, stronger compliance with the concept of informed consent, and a greater sense of participation in the decision process. Lack of such participation is a known factor in malpractice lawsuits (Lynch, 1996).

These examples of research indicate that the concept of demand management is certainly on the rise. An illustration of this rise, and the potential for demand management to be accepted as an standard of care comes from a market analysis

that predicts that at least 200 million Americans will be covered by demand management programs in the next few years. This will create a market in excess of \$200 billion dollars. A survey of healthcare marketing firms revealed that demand management is the number one marketing theme for the immediate future (Vickery, 1996).

PPIP. The Putting Prevention into Practice Program changes the focus from diseases to "actual causes of death". A 1993 report listed the actual causes of death to be: tobacco (400,000 deaths in 1990), diet and activity patterns (300,000), alcohol (100,000), microbial agents (90,000), toxic agents (60,000), firearms (35,000), sexual behavior (30,000), motor vehicles (25,000), and illicit use of drugs (20,000). The most prevalent causes - tobacco, diet and activity patterns, and alcohol - are all behavior choices (McGinnis, Foege, 1993). These numbers are enhanced by the fact that thirty percent of adults and eleven percent of children in the United States are overweight. Simply stated, we are the fattest nation in the world (Butler, 1999).

Health care costs in the United States reached approximately \$900 billion, an average of \$14,000 annually for each family with four members in 1993 (Burner, Waldo, Mckusic, 1992). The preponderance of this expenditure was devoted to treatment of conditions ultimately recorded on death certificates as the nation's "leading causes" of death. Only a small amount went to controlling many of the risk factors that are the "actual causes" (Griffith, Dickey, 1995).

This data would logically lead one to believe that the

health care industry recognizes the need for prevention and preventive services. However, studies have shown vast inconsistencies in the manner in which prevention is practiced across the country. The incidence of breast cancer in black women continues to increase, and that breast cancer is diagnosed at later stages than it is in white women. Also, patients in low-socioeconomic status are less likely to be current on immunizations and screening tests than other patients of higher status (Soban, 1998).

In 1997, the National Committee for Quality Assurance (NCQA) released a report confirming the wide variation in the delivery of preventive services. The report shows that 86 percent of New England children under age 2 enrolled in managed care plans received appropriate immunizations. The rate for the Mountain region was only 59 percent (Soban, 1998).

Preventive services have shown themselves to be cost effective. One study, conducted by Mandelblatt and Fahs found that for low income elderly women who had not had a Pap smear in many years, that screening for cervical cancer saved money as well as lives (Russell, 1993). Another study found that smoking cessation is extremely cost efficient. As the intensity of the intervention increased, the lower the cost per QALY (quality adjusted life year) indicating that greater net benefits can result from greater spending (Cromwell, Bartoschj, Fiore, 1997).

There are gaps in the literature as it examines PPIP. No formal, or informal, research has been conducted to determine the impact of implementing PPIP on an organization from a

personnel stance. The Department of Defense web site that deals with PPIP discusses what job positions are associated with the program. It does not, however, develop a factor that can be used in determining the increase workload that an organization may experience.

Military Healthcare. The mission statement contained in the strategic plan of the Military Health System states "the MHS supports the DoD and our nations security by providing health support for the full range of military deployments and sustaining the health of members of the armed forces, their families, and others to advance our national security interests". The strategic plan includes five goals for the MHS: joint medical readiness, benchmark health system, healthy communities, resource and structure, training and skills development, and technology integration. Each of these goals contains either direct references to prevention/wellness or links to them. It is from these goals and their linkage to prevention/wellness that the basis for DoD support of PPIP implementation is derived.

The uniqueness of the military's health care system rests in its assumption of responsibility for total care (Williams, Torrens, 1993). If this were truly the case, then certainly encouraging the prevention of the "leading causes" of death would be a logical part of the military's responsibility to beneficiaries. The elimination of health threats to military and family members falls within the purview of military health care leaders (Roark, Tucker, 1997). Encouraging beneficiaries

to stop smoking will reduce costs and improve the overall health status of the beneficiary population (Rubenstein, 1990).

Demand management principles have been applied to, and been successful at the local MTF level. A study analyzed a Self-Care Intervention Program (SCIP) that was implemented with a Health Promotion Pharmacy (HPP) at an MTF. Participants received a questionnaire at the mid-point of the trial to assess program objective achievement. The response rate to the survey was 67.5 percent (191 responses from 283 questionnaires). Each of the six program objectives received positive responses. The calculated return on investment (ROI) was 11:1 (Steinweg, 1997).

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Purpose

Putting prevention into practice is a reality that all of the Department of Defense must address. The purpose of this study is to develop a methodology for implementing the PPIP program in one Family Care Clinic (FCC) within DACH and for potential use as a template for implementation for the remainder of the hospital.

Methods and Procedures

The literature review illustrated that the PPIP program is a fundamental change in the delivery of healthcare. The military faces a further challenge because of the nature of the armed forces. Turnover within the patient population is high and constant. Deployments take active duty personnel away from their installation MTF's and cause the migration of dependents back to their home of record. This type of turbulence creates a

tremendous demand upon any system to accurately track and influence its beneficiary population. In addition, the positive and negative impacts of any new program must be weighed against the primary mission of the MHS and DACH - readiness.

The methodology chosen for PPIP implementation at DACH will be a three phased multi-functional approach. Utilizing a phased approach will optimize the commanders' ability to evaluate and adjust the implementation process as it occurs. The phased methodology eliminates the tendency to proceed with the process based solely on time. Progression is based upon the completion of the succeeding phases. However, partial expansion may be required due to budgetary constraints.

The first phase consists of all the tasks that are directly related to the start of any new program, such as selecting an initial implementation site. Next, a beneficiary group within the sites' population must be selected. The primary care clinics within the Darnall system have large beneficiary populations, so it is necessary to select a sample that is of a manageable size for the initial implementation in order to validate the process and procedures used. Third, a proven means to evaluate the implementation must be selected. This evaluation tool must be consistent with recognized standards and practices. Also during this phase, a methodology must be developed to determine the personnel requirements. Lastly, a means to train and evaluate the personnel involved in the PPIP program must be developed.

A medical record screening model must be developed in order

to gather the data necessary to determine a baseline indicator for the number of beneficiaries of FCC Darnall that meet the PPIP eligibility requirements. The data that is collected may be used as the PPIP implementation matures to compare baseline rates to those collected at the time of any additional studies. The model recommended for the data collection is a 1996 study conducted by George Kikano ,et al, Put Prevention into Practice: Outcomes in a Family Practice Center.

This study screened the records of patient encounters from one day per week for three months prior to PPIP implementation at the family practice center. The same procedure was again followed for three months following implementation. This gave the researchers a base line of data that indicated the change in the rates for screening and counseling services.

The Kikano study reviewed 282 patient records prior to the introduction of PPIP, and 297 records post introduction. The two samples were treated as independent groups and CHI-square and *t test* statistics were used to compare rates and means of them. The study found no differences in the pre and post samples in terms of age, gender, type of visit, and provider training level. The study indicated no significant differences in the rates at which screening tests were performed. The delta appeared when the study examined referrals for services on future visits. For example, the percentage for referring for Pap smears was 15.8 percent post PPIP and 8.3 percent pre implementation ($P = .08$). Recommendations for mammograms rose to 30.6 percent v. 16.7 percent ($P = .14$). Kikano also

indicated that there were great successes noted in tobacco cessation documented in the patient's records, but no statistical evidence was presented.

The second phase of Darnall's PPIP implementation will involve an evaluation and validation of Phase I. Input from staff participating in the initial phase will be gathered and lessons learned will be collected. Pending the results of the training on the PHCA software, staff and patient comments, and the availability of funding, the PPIP program will expand to include the remainder of FCC DACH's beneficiary population.

An integral component of the PHCA software is the automated HEAR. The automated HEAR is not a one time, take-and-forget assessment. It must be updated annually. Primary Care Manager's use the information provided in the HEAR survey to assess the overall well being of the patient.

Setting up the HEAR survey for each beneficiary does not require a "provider" to accomplish. One method that can, and, should be used for the administration of the automated HEAR within the FCC setting is a dedicated nurse educator. However, beneficiaries with questions about how to answer questions, particularly those of an extremely personal nature, may not feel comfortable talking to anyone other than a physician or nurse. It is essential to the success of the PPIP program that the information provided on the automated HEAR be as accurate and timely as possible. The presence of a nurse educator to answer such questions can facilitate ensuring the validity of the process.

Phase III will be the continued expansion of the PPIP program to encompass the other family care clinics within the Darnall network. The primary concern being the availability of funding necessary to provide for the expanded staffing needed to conduct the HEAR surveys and to allow for the number of expanded patient visits. A partial expansion may be required, similar to the initial phase, so that more of the active duty beneficiary population can be exposed to the benefits of PPIP.

Results

The Family Care Clinic chosen for the initial implementation of PPIP is FCC Darnall. The choice was deliberate and is based upon three critical factors. The first and perhaps the primary factor is control. The patient population empannelled to FCC Darnall is relatively stable. The provider population is also a very stable entity. This stability in both providers and patients gives the commander a controlled environment in which to initiate the PPIP process. Using FCC Darnall as the beta site for DACH allows for a degree of flexibility and modification that would not be as readily available in a more removed location such as FCC Monroe or FCC Bennett.

The second factor is the inherent limitations of the PHCA software. Darnall will receive approximately 25 workstations to operate the PHCA software. This software is an application system that coordinates data from the automated Health Enrollment Assessment Review (HEAR), the Record Management System (RMS), and the Composite Health Care System (CHCS). The

fielding will include only one server to accumulate and process the data from all of the 25 computers. The greater the distance the workstations are from that server, the slower the processing time. Locating the majority of the workstations in close proximity to the server is critical to the success of the initial fielding. Utilizing FCC Darnall allows the workstations to be located adjacent to the server. Additionally, both the workstations and the server will be easily accessible by DACH's Information Management Division (IMD), the department responsible for the systems maintenance.

The third factor influencing the decision to implement PPIP in FCC Darnall is the development of a Family Practice Residency program there. The residency program will not be in place until the year 2000. However, the PPIP program within FCC Darnall will be mature and the transition of the residents into the practice of practicing prevention should be an easy one. The Director of the Residency program, Colonel W. Schirner, stated that "it is important to the success of both programs that they operate together" (Schirner, personal communication, October 16, 1998). Literature on PPIP indicated that the most successful implementations of PPIP in civilian health care organizations were in family practice settings. Prevention and preventive services are the essence of the care provided by family practitioners. Once the residency program is in place and operational, the number of beneficiaries enrolled to FCC Darnall will be reduced to approximately 10,000. This is due to the restrictions on the number of patients that residents may see

and still have over-sight by the faculty. The demographics of the "new" beneficiary population will be ideally suited with PPIP expansion because it will include young families, single active duty soldiers, and a number of patients over the age of 65.

The initial focus of the implementation will target only a few of the broad range of preventive programs contained in the overall PPIP program. The areas of concentration will be tobacco cessation, papanicolaou (PAP) screening, and mammography. It is not only important to screen for risk factors in these categories, but also to have the capability to refer the patient to the follow-on services each of these require. Darnall has viable educational and clinical services in place to support these areas.

The success of any prevention program can only be determined by long term study. However, it is important to develop a base line of data that indicates what the health status of the patient population is. Family Care Clinic, Darnall uses February, March, and April 1998 as its baseline quarter for analysis purposes. These three months are utilized in order to factor out seasonal usage (e.g. heavy use in fall and winter and lighter use during summer months). During this baseline quarter, the providers in FCC DACH had a total of 17,138 patient encounters (Feb = 5,384, Mar = 5,892, Apr = 5,862). Patient enrollment during the baseline quarter was 11,987, 12,166, and 13,148 for February, March, and April respectively. Current enrollment, as of 2 November 1998, was 14,202 for FCC DACH.

The criteria that FCC Darnall uses for scheduling patients for preventive tests and services follow national guidelines and in some cases exceed them. All women age 18 and above are screened annually using PAP tests. This does not include women with diagnoses requiring more frequent or more extensive testing. During FCC DACH's baseline quarter, 62 percent of the patient encounters were with women eligible for a non-complication related PAP test (10,656 of 17,138 total encounters).

The criteria for mammography screening within FCC DACH are also consistent with national practices. A baseline mammography is done for all women between the ages of 35 and 40. Patients between the ages of 41 and 50 are screened every other year. Patients age 51 and older receive a mammography screening annually. The number of women who were eligible for a mammogram during the baseline quarter were: 1,532 (baseline), 1,392 (age 41 - 50), and 700 (age 51+). These numbers do not discern women with diagnoses requiring more than preventive testing from those seeking preventive services only.

The data discussed for FCC Darnall's baseline quarter was obtained using the Medical Expense Performance Reporting System (MEPRS). This information is helpful in determining a basic expectation of the numbers and types of patients that will be seen. However, MEPRS data is not sufficient for determining how patients actually meet the age and gender criteria for the PPIP program.

The reference manual for PPIP, the Clinician's Handbook

of Preventive Services (CHPS) establishes the age and gender eligibility criteria for preventive services. Patient records were screened retrospectively using the CHPS criteria to determine:

(a) The patients meet the age and gender eligibility for the four areas DACH is concentrating on and,

(b) They have no recorded evidence of having received counseling or testing services for the areas of interest (tobacco cessation, papanicolaou (PAP) screening, and mammography). Patient confidentiality was maintained because names and social security numbers (SSN's) are omitted from the study. Only the occurrence, or lack of occurrence of referral/testing/counseling, was noted. This type of information gathering technique is used daily in DACH and has been approved by the EXCOM and the Medical Staff Executive Committee (MSEC). This baseline data collection is necessary in order to provide the Hospital Commander the information needed to evaluate the program on an ongoing basis.

The period of time covered for the analysis was February, March, and April 1999. This mirrors the clinic's baseline analysis period (February through April 1998). The data utilized in the initial study was collected using the composite health care system (CHCS) and the ambulatory data system (ADS). This method for determining baseline information was utilized in order to minimize time and maximize available personnel. There were a total of 9,387 visits by female beneficiaries (within the PPIP age classifications listed earlier) to FCC Darnall during

the period February to April 1999. The results of the pre-implementation analysis indicated that 168 (1.78%) women were referred to the Department of Radiology for a mammography or related procedure. In addition, a total of 602 (6.41%) PAP exams were performed by providers assigned to FCC Darnall. There is no mechanism currently in place to track referrals for the tobacco cessation program at Darnall. That capability will be developed in conjunction with the implementation and expansion of the PPIP program.

The results of this initial study would seem to indicate that the population is relatively healthy. However, the numbers of patients referred for a speciality consultation such as mammography should not be the sole basis for determining the health of a segment of the overall beneficiary population. Women routinely forego annual PAP and mammography examinations because of fear of pain or because they are afraid that an abnormality will be indicated. In addition, many women do not come into the FCC on an annual basis. Some never come in until they have an acute illness they cannot treat at home. Those patient's, while eligible under the guidelines and possibly in need for testing, are never referred because their records are never examined. The use of PHCA in conjunction with PPIP, will eliminate the guess work by providing flags on patient records which show a shortfall in required preventive health testing.

The MEPRS program contains a sub report that lists employees by name, specialty, available hours, and Full Time Equivalent's (FTE's). Available hours indicate the amount of

time that an employ^oee is present in the clinic and providing patient services. During FCC DACH's baseline quarter, the physicians, physician's assistants, and nurse practitioner's had a total of 5858.28 available hours. The administrative clerks had a total of 1320 hours for the same period. MEPRS data will be collected during the study period to determine the effects of available hours on the number of patients seen and the impact that the requirements for additional patient education and referrals have on the number of patients that can be seen.

The largest administrative requirement in implementing PPIP is the data input into the automated DD 2766. Darnall currently has approximately 100,000 persons within its catchement area. Each individual has a medical record containing information that must be manually input into the PHCA program. A conservative estimate of the time required to scan, and input this data is 20 minutes per record. This number is not based upon scientific evidence - because there is no organization or installation currently utilizing the PHCA software. The time is based upon the best available input from personnel within the medical records, managed care, resource management, and information departments of DACH.

Using the twenty minute time period as a baseline figure, it would take literally years to process all of the outpatient records in DACH if such processing were done retrospectively - that is after the patient had enrolled in an FCC and turned the medical record to them. A more aggressive approach to the capture and aggregation of the medical data is needed. The

backlog of unprocessed medical records can not be reduced without implementing a data input plan that would be combined with in-processing procedures that are already in existence. Placing remote terminals containing the PHCA, HEAR and the immunization/RMS software, and trained personnel to operate them at central in-processing points would significantly reduce the number of records within the backlog. Such utilization would prevent additional records from being added to the queue.

The Chief, Managed Care Division DACH, Major Lisanne G. Gross stated " the one-stop TRICARE Inprocessing Center sees approximately 90 new beneficiaries a day, 1900 a month. Adding a prevention aspect to the process would certainly enhance our ability to provide quality service to our beneficiaries" (Gross, personal communication, April 9, 1999). The space limitations that exist in the current " one-stop shop" preclude placement of the automated HEAR in it at this time. Once a larger facility is available, time will limit the number of beneficiaries that can take the HEAR survey there. At an average of 20 minutes per beneficiary, it would take over 30 hours a day to handle 90 surveys. However, the benefit of the number that could be completed would be realized in reduced patient in-processing time in their assigned FCC.

The aggressive data collection during in-processing, combined with the annual relocation of active duty personnel and their dependents would allow for an effective and timely reduction in the backlog of outpatient records that had not been screened. This screening can be accomplished by the hiring of

temporary employees - for a set period of time - with a well established task of screening outpatient records and inputting the required data into the PHCA program. The FCC Darnall has a present patient population of 14,202. Using the 20-minute estimate per record, combined with the hours per FTE per year, it would take approximately 950 hours for one employee to clear the backlog of unscreened records for FCC DACH. The time required to in-put the data can be reduced by adding more employees to the task. Obviously the limiting factor in determining the number of personnel available to accomplish this task will be determined by the availability of funds.

Additional workload (and cost) is attributed to obtaining and distributing the educational materials essential to the PPIP program. Each individual seen, counseled, and/or referred for a pap smear, mammography, and smoking cessation should receive educational materials on that particular topic from their PCM. These materials can be downloaded from the Internet, bulk purchased from various suppliers, or locally produced. Each of the three methods requires personnel and equipment to execute.

Family Care Clinic Darnall currently utilizes all three methods to obtain patient education materials. The clinic has a computer and printer dedicated for storage, download, and printing of those materials. Family Care Clinics without a dedicated "patient education" computer and printer will need to be resourced for that as the program expands. In addition, FCC DACH has purchased a CD-ROM from the American Academy of Family Physician's, that contains patient education materials on a

broad range of subjects. The NCOIC spends approximately \$500.00 monthly to obtain additional patient information pamphlets and brochures.

Typically, the patient receives his/her education material from their PCM. The PCM either has the material present, or asks that it be provided during the course of the encounter. A nurse or other available personnel obtains the required information using one of the three sources listed above and gives it to the provider. The provider then uses the material to elaborate on the preventive topic being discussed with the patient. Should the patient have additional questions or desire more information following the PCM/patient encounter, a nurse in the clinic addresses those questions and/or provides the additional information requested.

This is an inefficient utilization of the nursing staff. Each time a patient has information needs that were not met by their PCM, a nurse must stop whatever he/she is doing to meet with that patient. If the nurse cannot immediately meet with the patient, then the patient must spend additional time waiting. This creates dissatisfaction among both beneficiaries and staff. As stated earlier, a dedicated nurse educator, whose duties do not include direct patient care responsibilities would increase the ability of the clinic's staff to perform its mission in the most efficient manner.

Clinicians in FCC DACH are already counseling and referring patients for the three areas of interest. Documenting that counseling and those referrals either via the automated PHCA

system or the manual DD 2766 is the training challenge. This is a fundamental change in the way that physicians have traditionally allocated their time with each patient.

Under the PPIP program, the PCM not only has to interact with the patient and make any necessary referrals based upon the result of the interaction; he or she must now also allow for the time to manually or through the automated PHCA software, to document that interaction (to include patient education provided and referrals given) while the patient is present. Furthermore, if the automated software is utilized, an updated copy of the DD 2766 must be placed in the patient's out-patient record.

The fielding of, and training on the operation of the PHCA software will provide data on the need for an increase in length of appointments or need for more providers. Additionally, the impact on cost quality and access can truly be assessed only after the program is implemented. The need for additional clerical personnel and/or personnel with greater medical training, such as a nurse educator, to in-process patients for clinic visits will also be identified during the fielding/training period. Currently, FCC DACH has 5 medical clerks. These clerks work varying shifts to accommodate the clinic being open till 2000 hours Monday through Friday, and mornings on Saturday and Sunday.

Training on the concepts of the PPIP program will begin well before the fielding of the PHCA software. Opportunities such as Officer Professional Development (OPD) classes will be used to target the providers within FCC DACH. In addition, in

service training and staff updates will be used by the senior leadership to emphasize the importance of the program and its benefits to the population we support. Once the PHCA program and its associated hardware are in place, training will be focused on mastering the additional tasks associated with them. Initially the training will focus only on the staff of FCC DACH, but will expand to other FCC's as the PPIP program at Fort Hood grows.

The fielding of the hardware and PHCA software will begin in the Summer of 1999. The first 14 days will consist of technicians from the contractor working with DACH's IMD to position the server and configure network connections. During this period, the personnel from IMD will be trained in the operations of the system and the maintenance requirements associated with it. This will certify the IMD to conduct future training on the operation of the system.

The training for the users will follow for the next 5 days. This training will be segmented based upon the area of the program the provider will be associated with. Providers will train with the immunization - RMS portion, the automated HEAR, and/or the actual PHCA (DD 2766). As stated above, the focus for the PHCA portion will be centered initially on those providers in FCC DACH. Training on the program will be scheduled for the remaining family practice professionals as the program progresses. Lessons learned and modifications to procedures will be an important aspect to that training.

The final portion of the training will be the actual

activation and full up implementation of the program in FCC DACH. The complicating issue is the fact that there will be no contractor support for this period. All technical support for this period will be provided by the IMD of Darnall. This fact makes the training for the Information Management Department crucial.

CONCLUSIONS and IMPLICATIONS

The analysis presented in the attached Appendix uses data collected utilizing MEPRS. The time period captured is Fiscal Year 1998 and includes the total number of patient encounters by age and sex. These encounters were then incorporated into a time analysis which evaluated all aspects of the patient visit and prescribed a base time to each action/requirement during that encounter. The ages selected were in accordance with the standards published in The Clinician's Handbook of Preventative Services for the areas of PAP Smears, Mammography and tobacco cessation.

The patient will see the most dramatic impact from PPIP implementation. When the automated HEAR is on-line, an average of 20 minutes will be added to the patient's initial visit to their PCM. The automated HEAR is an annual requirement, so that 20 minutes will be required each year - generally on the anniversary of that initial visit. The second, and perhaps most beneficial impact on the patient, will be the increased emphasis on patient education. Currently, the provider and nurse provide educational materials, but in a disjointed and less than efficient manner. Under the PPIP program, the use of the DD Form 2766, or the automated DD 2766 formalizes the requirement to

provide and document specific episodes of patient education.

The nurses assigned to FCC Darnall will also see dramatic changes in the time spent with patients as a result of PPIP implementation. As stated earlier, patient education plays a vital role in the overall success of the program. Documentation of that education will become not just the responsibility of the PCM, but also of the nurse (or nurse educator). The use of the existing nursing staff, with their existing direct care duties will further reduce the staff's overall effectiveness. The use of a nurse educator will only serve to enhance the educational experience for the patient and increase the efficiency of the Clinic.

The impact upon the PCM's will be negligible. They are providing preventive clinical counseling and that counseling is documented in the patient's record. The PPIP program merely requires that the documentation be annotated on a form that concisely collects patient history, immunization data, serious illnesses, and education. When the computer or automated DD 2766 is on-line, this documentation will be a seamless process.

The purpose of this study was to develop a methodology for implementing the PPIP program in one Family Care Clinic (FCC) within DACH and for potential use as a template for expanding it into the remainder of the hospital's Family Practice settings. As with any new program, the implementation is a constantly evolving, ever changing situation. Some elements such as the fielding of the hardware and software associated with the automated HEAR and PHCA are controlled at levels beyond the

control of DACH.

Consideration must be given to the cost in time and monies as Darnall expands its implementation of PPIP program to encompass larger portions of the beneficiary population and prevention categories. For example, dedicating a nurse educator to oversee the administration of the automated HEAR and to provide patient education materials within the clinics, while more efficient, may prove to be cost prohibitive.

The standard 15 minute appointment time may not be adequate for a PCM to complete the basic requirements of the PPIP program. In fact, all of the "well woman" appointments are 30 minute encounters. If this proves to be the case in the initial fielding within FCC DACH, the ramifications would be enormous. The adjustment of appointment templates to accommodate the PPIP program could directly impact beneficiary access to the system. If templates are not adjusted, then the overall perception of the quality of the PCM/patient interaction could suffer (shorter time for the provider to address the reason the patient came in to the clinic). A decrease in access coupled with a perception that quality has lessened, could drive up the MTF's cost as beneficiaries dis-enroll from the Darnall network and seek care through the contractor network.

The cost of computer hardware needed to compliment the equipment provided during the fielding of PHCA (this includes RMS and the automated HEAR) is another factor requiring examination. Clinics will require additional computers and printers to provide patient education materials. Expansion of

the automated HEAR into the central in-processing stations and the TRICARE "one-stop-shop" will require enhancement of the available telephone lines and additional servers to facilitate the reliable transfer of data.

The PPIP program was not given central funding through the DHP and Health Affairs. As a result, MTF's such as Darnall Army Community Hospital, are left with competing priorities for the limited resources at their disposal. The "payback" for this program is not a short term one. The ultimate objective of achieving a healthier, better-educated beneficiary population will occur over many years and many iterations of the PPIP program. Flexibility and adaptability are key in bringing this needed service to our beneficiaries.

Determining whether the objectives of achieving a healthier, better educated beneficiary population are met will depend upon the continued examination of patient acuities. Areas for further study should include record reviews at six-month intervals following implementation utilizing the Kikano model. The results of these studies should be compared against previous results and or the baseline review as appropriate. This "continual review" will provide the continuity of data necessary to complete the type of longitudinal study critical in determining PPIP's effectiveness.

Another area for further study and investigation will be the analysis of the workload generated by the implementation and eventual expansion of PPIP. MEPEERS and ADS data should be examined in order to determine if the proper numbers and types

of employees are available where needed. Focused employee time studies should also be used to ensure that the time factors developed in this implementation plan are correct reflections of post implementation time needs.

In addition, the ratios developed in that analysis can be used to study patient waiting times, which ultimately impact overall satisfaction and willingness to participate in the program. After all, patient participation and cooperation are vital to the success of PPIP. The study of PPIP without a concurrent study of the attitudes of the beneficiary population will result in flawed data that does not accurately measure effectiveness and or success/failure.

APPENDIX - DATA ANALYSIS - FAMILY CARE CLINIC, DARNALL

<u>TASK #1 - DATA COLLECTION</u>		(FY 98)	44181
REGISTRATION / IN PROCESSING:		One Time	Automated
		HEAR	HEAR
PATIENT	1 20	44181	883620
CLERK	1 0	44181	0
NURSE	7 20	309267	883620
PHYSICIAN	0 0	0	0
OTHER	0 0	0	0
APPOINTMENT			
PATIENT	5 5	220905	220905
CLERK	0 0	0	0
NURSE	0 0	0	0
PHYSICIAN	5 5	220905	220905
OTHER	0 0	0	0
POST APPOINTMENT			
PATIENT	1 1	44181	44181
CLERK	1 1	44181	44181
NURSE	5 5	220905	220905
PHYSICIAN	0 0	0	0
OTHER	0 0	0	0
TOTAL	26 57	1148706	2518317
<u>TASK #2 - MAMMOGRAPHY APPOINTMENT/PAP EXAM</u>		(FY 98)	32,156
APPOINTMENT			
PATIENT	30 30	964680	964680
CLERK	0 0	0	0
NURSE	7 7	225092	225092
PHYSICIAN	30 30	964680	964680

APPENDIX - DATA ANALYSIS - FAMILY CARE CLINIC, DARNALL

OTHER	0	0	0	0
TOTAL	67	67	2154452	2154452
<u>TASK #3 - TOBACCO CESSATION</u>			(FY 98)	44181

APPOINTMENT

PATIENT	15/30	15/30	662715	1325430	662715	1325430
CLERK	0	0	0	0	0	0
NURSE	7	7	7	7	309267	309267
PHYSICIAN	15/30	15/30	662715	1325430	662715	1325430
OTHER	0	0	0	0	0	0
TOTAL	53/83	85/115	1634697	2960127	1634697	2960127

	TOTAL TIME IN HOURS	
	One Time HEAR	Automated HEAR
TASK #1 - DATA COLLECTION	= 19145.10	41971.95
TASK #2 - MAMMOGRAPHY APPOINTMENT/PAP EXAM	= 35907.5	35907.53
TASK #3 - TOBACCO CESSATION		
15 minute appoitment	= 27244.95	27244.95
30 minute appoitment	= 49335.45	49335.45

INDIVIDUAL TIME ANALYSIS:

	TOTAL TIME IN HOURS	
	One Time HEAR	Automated HEAR
PATIENT	43322.95	57313.60
CLERK	1472.70	1472.70
NURSE	17742.18	27314.73
PHYSICIAN	41850.25	41850.25

APPENDIX - DATA ANALYSIS - FAMILY CARE CLINIC, DARNALL**NOTES:**

1. All times are in minutes unless other wise noted
2. The darker band indicates the time factor if the Automated HEAR is utilized.
3. Most breast and PAP exams are conducted during a "Well Woman" appointment and are done during the same visit.
4. Tobacco cessation counseling and/or referral can be done during a normal 15 minute exam a "well woman" exam or Part II physical exam.
5. Each military provider is available 145.06 hours per month
6. Each civilian clerk is available 168.0 hours per month
7. Each nurse is available 164 hours per month.

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