

A Financial Analysis of the Patient Access and Advice Line
An Instrument of Demand Management at the
USA Medical Department Activity-Heidelberg

Submitted to
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in Partial Fulfillment of
the Requirements for a
Masters, Health Care Administration

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REPORT DOCUMENTATION PAGE

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OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY <i>(Leave blank)</i>	2. REPORT DATE May 1998	3. REPORT TYPE AND DATES COVERED FINAL REPORT (07-97 TO 07-98)	
4. TITLE AND SUBTITLE		5. FUNDING NUMBERS	
6. AUTHOR(S) Major Richard T. Phillips, MS		8. PERFORMING ORGANIZATION REPORT NUMBER 40-98	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) US Army MEDDAC Heidelberg CMR 442 APO AE 09042		10. SPONSORING / MONITORING AGENCY REPORT NUMBER	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) US Army Medical Department Center and School BLDG 2841 MCCS-HRA US Army-Baylor Program in HCA 3151 Scott Road Suite 1412 Fort Sam Houston Texas 78234-6135		11. SUPPLEMENTARY NOTES APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED	
12a. DISTRIBUTION / AVAILABILITY STATEMENT		12b. DISTRIBUTION CODE	
13. ABSTRACT <i>(Maximum 200 words)</i> The concept of managed health care was developed in the 1930s in an effort to provide affordable health care. Managed care came to dominate the healthcare landscape by promising to reduce the astronomical rise in healthcare costs experienced in the 1980s. Demand management has become one of the tools managed care companies propose to use to sustain the cost cutting potential of managed care. One key component of demand management is nurse assessment and advice offered by telephone, formerly called a "nurse advice line" or "telephone triage". Demand management systems integrate Primary Care Managers, prevention and wellness programs, self-care instruction, and telephone advice and triage. A call center, typically staffed with Registered Nurses, acts as the focal point for access to the health care system in a mature managed care environment. With the start of TRICARE-Europe and the cessation of the CHAMPUS demonstration project on 1 October 1997, the military health care system in Europe entered a managed health care environment for the first time. This change has required every health care facility in Europe to evaluate how it is doing business to ensure that every dollar spent contributes to meeting the health care needs of its patient population. This project provides a financial analysis of the Patient Access and Advice Line currently in operation at the U. S. Army Medical Department Activity in Heidelberg Germany. This paper describes the cost to implement and run the current system, and evaluates the expected cost savings and benefits. It answers the question, "Are the benefits of the PAAL worth the costs?"			
14. SUBJECT TERMS Demand Management, Nurse Advice Line, Managed Care		15. NUMBER OF PAGES 52	
17. SECURITY CLASSIFICATION OF REPORT N/A		16. PRICE CODE	
18. SECURITY CLASSIFICATION OF THIS PAGE N/A		19. SECURITY CLASSIFICATION OF ABSTRACT N/A	
20. LIMITATION OF ABSTRACT UL			

Acknowledgments

I owe a great deal of gratitude to my preceptor LTC Barbara Wright for the inspiration and support she has offered me this year, and on this project.

I am also very grateful to MAJ Mark Perry for his constant mentoring and support of me during the project and his patience with me during this year.

Without the help of Ms. Lisa Thomas and Mr. Keith Dearden, I could never have gathered nor understood all this data.

Finally, I am always fortunate to have the patience and friendship of my wife, Joyce and my children, Jeremy, Becky, and Katie.

Abstract

The concept of managed health care was developed in the 1930s in an effort to provide affordable health care. Managed care came to dominate the healthcare landscape by promising to reduce the astronomical rise in healthcare costs experienced in the 1980s. Demand management has become one of the tools managed care companies propose to use to sustain the cost cutting potential of managed care. One key component of demand management is nurse assessment and advice offered by telephone, formerly called a "nurse advice line" or "telephone triage".

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Introduction.

Managed care has evolved in recent years to be a driving force in the delivery of health care. The promise of managed care is its ability to contain the rising costs of healthcare. The challenge to managed care is to maintain high clinical quality in the delivery of health care. Clinical outcomes in the US healthcare system have been and continue to be excellent (Ruth, 1993). Costs, however, were climbing out of control before the advent of managed care. In the 1980s, health care costs were experiencing double-digit inflation (Edwards, 1998). By the mid-90s, managed care had slowed medical inflation to 1% or less. Now that managed care has matured, the cost of health care is again climbing, although slower than in the past. The most recent figures for medical inflation show it running at around 5% (Hansen, 1997). Proponents of managed care must figure out how to again control costs while maintaining quality if it is to survive.

Demand management is one tool that has shown great promise in helping managed care plans control cost while still ensuring that clinical quality remains high. Demand management can be defined as "the use of decision and self management support systems to enable and encourage its consumers to make appropriate use of medical care." (Wolcott, 1996). It recognizes that there are several factors affecting the decision of a consumer to seek health care services. In addition, the principle goal of demand management is not demand reduction. Rather, the principle goal of demand management is the appropriate use of healthcare services by the consumer and the provider. One key element in almost all demand management systems is the use of telephone decision

support services, formerly called nurse advice lines, as a first point of contact for consumers into the health care system.

Nurse advice lines can trace their history to nurses providing advice and information by phone from a doctor's private office. This unstructured system worked well in the fee-for-service environment, which existed many years ago. However, as the healthcare market has matured and become more complicated, the concept of nurse advice by telephone has had to mature and become more sophisticated. In addition, as society became more litigious, nurse advice lines were forced to adopt more controls to ensure clinical quality and consistency. These nurse advice lines eventually became the telephone decision support systems that form the nerve center of modern demand management systems. For many in today's healthcare market, the real promise of demand management systems in general, and nurse call center specifically, is cost containment. Whether this goal is appropriate or not is debatable, but the fact that cost containment is often attributed to these systems is not. Despite these claims, the cost containment record of demand management systems is dubious.

Figures documenting the cost containment potential of demand management abound. One source reports that fifty percent of emergency room visits are for non-emergencies, costing the healthcare industry billions of dollars every year (Anders, 1997). Another source reports that for every \$1 spent on a call center, health plans can save \$2 in reduced ER usage (Anders, 1997). The nurse advisor program operating at Fort Sill Oklahoma claims annual cost savings of \$165,000. Even the Patient Access and Advice Line currently operating at the US Army MEDDAC, Heidelberg Germany claims potential cost savings based on reduced outpatient and ER visits. Visit reductions of from

20% to 35% are projected to save millions of dollars over a five-year period. The problem with all of these cost savings claims is that they are often taken and/or presented without being put in the proper context. There are two key questions that must be addressed when one wishes to discuss cost savings related to health care. The first question is, "Who are you?" Payers, patients, employers, or health care providers all view the issue of cost differently. The second question is, "What type of health care market are you operating in?" For-profit, not-for-profit, and government health care systems respond to and view costs differently. Therefore, answering these two questions is critical to any valid discussion of health care costs and cost reductions. The best way to answer these questions is with two scenarios.

The first scenario involves a privately insured patient who has copayments and deductibles, after which the insurance company pays for the visit. We will call this patient Mr. Bear. Mr. Bear is sick, and goes to see his doctor. The doctor charges \$100 for this visit. Several people incur costs in this scenario. Mr. Bear pays his \$10 copayment, which counts toward his yearly deductible. Mr. Bear's insurer pays \$90, the balance of the charge. The doctor incurs a cost of \$12, the variable cost of a visit at his office.

Now Mr. Bear's insurer has contracted with a nurse assessment service to help control costs. Mr. Bear is sick again, except now he calls the nurse assessment service instead of going to his doctor. The nurse advises him to take some medication, get some rest and drink plenty of fluids. Ironically, this is the same advice he got for this condition the last time he visited his doctor. Again, several people incur costs in this scenario, and some people save money. Mr. Bear now pays no copayment. He saves \$10. The insurer

does not have to pay the charge for a visit, saving \$90. However, the insurer does have to pay for the new nurse assessment service. This cost is small, only \$1 per member per month, but this is now a sunk cost of doing business for the insurer. The doctor's practice saves the \$12 variable cost of Mr. Bear's avoided visit, assuming it would have had to see him had he chosen to come in for a visit. Mr. Bear, the insurer, and the physician practice all benefited to some degree from this service, saving both time and money.

In the second scenario we have Mrs. Bear, a family member of an active duty soldier. She is enrolled in TRICARE Europe Prime. She never has a copayment or a deductible if seen in the MTF. Also, TRICARE Europe Prime enrollees never have copayments or deductibles if they are referred to a host nation provider by their Primary Care Manager. The insurer, the U.S. Government, incurs no additional cost for providing health care within the military system. The Military Treatment Facility (MTF) is already budgeted to provide health care to active duty and family members of active duty. Mrs. Bear is sick and goes to see her doctor. Mrs. Bear is charged nothing for this visit. Mrs. Bear pays no copayment. Mrs. Bear's insurer (the U.S. Government), does not have to pay for the visit because the cost is already figured into the MTF's annual budget. The clinic, however, still incurs the \$12 variable cost of a physician visit.

Now Mrs. Bear's MTF has contracted with a nurse assessment service to help control costs. Mrs. Bear is sick again, except now she calls the nurse assessment service instead of going to her doctor. The nurse advises her to take some medication, get some rest and drink plenty of fluids. Once again, this is the same advice she got for this condition the last time she visited her doctor. Again, several people incur costs in this scenario, and some people save money. Mrs. Bear is obviously not charged for a visit.

No visit occurred. She pays no copayment. Mrs. Bear's insurer (the U.S. Government), still does not have to pay for the visit. The MTF, however, has to pay for the new nurse assessment service. The cost is still small, only \$1 per member per month, and this is now a sunk cost of doing business for the MTF. The doctor's clinic saves the \$12 variable cost of Mrs. Bear's avoided visit, assuming it would have had to see her had she chosen to come in for a visit. The nurse assessment service saved the clinic \$12 in variable costs. Mrs. Bear benefited since she saved the time and disruption it would have taken to go to the doctor. Also, the MTF can now see another, sicker patient in the appointment that would have been filled by Mrs. Bear.

The two scenarios above, while obviously over-simplified, demonstrate that costs and cost savings are effected by one's position in the health care market. Costs and savings are also affected by the volume of services provided.

Conditions Which Prompted The Study.

The United States Army Medical Department Activity-Heidelberg (USAMH) is one of three geographical and command entities within the European Regional Medical Command (ERMC), supporting the United States Army Europe (USAREUR). The United States Army Medical Department Activity-Heidelberg is a military health care system consisting of nine outlying health clinics and a community hospital. The catchment area encompasses 6,216 square miles in central Germany. The USAMH is responsible for over 73,000 covered lives.

The community hospital itself is a 63-bed facility located on Nachrichten Kaserne in Rohrbach, on the southern edge of Heidelberg. This hospital provides support to all outlying health clinics within the catchment area, some of which are located quite some

distance from the hospital. For instance, the southern-most clinic in Stuttgart is 74 miles to the southeast. The northern-most clinic, located in Butzbach, is 79 miles to the north. The USAMH initiated the Patient Access and Advice Line (PAAL) in September 1997 to assist in ensuring patients are appointed to the right level of care when they access the health care system. This PAAL consolidates the functions of central appointments and a nurse advice line. It is one form of demand management. It allows nurses to triage patients to the right level of health care, from home care to a clinic visit or a visit to the emergency room, according to the acuity of the patient's medical condition. This PAAL was initiated with much fanfare and with high expectations on the part of the USAMH Command Group that it would improve access, manage beneficiaries health care more efficiently, and reduce costs. Operating budgets for USAMH are projected to remain flat or decline slightly. In the future, enrollment based capitation may even decrease the operating budget further. Meanwhile, the workload is not expected to decrease at the same rate or to the same level. In this environment, initiatives such as the PAAL are increasingly important. This study looks at one aspect of the PAAL performance; cost savings.

Statement of the Problem

Can the PAAL act as a cost effective demand management tool to encourage and enable patients to access the health care system appropriately, and at the right place and time? What are the costs of operating the PAAL? What are the benefits of the PAAL to the US Army MEDDAC Heidelberg? Do the benefits provided by the PAAL outweigh the cost of operating the PAAL?

Literature Review

Managed care dates back to the early '30s, when Kaiser Permanente designed the first capitated health plan (Kaiser Permanente Celebrates its 50th Anniversary Year, online, 1998). However, managed care was essentially a niche market until the passage of the HMO Act of 1973. Signed into law by President Nixon, this legislation required employers to offer HMO managed care plans along with traditional fee-for-service health plans to employees. Even with the passage of this legislation, managed care continued to occupy only a small portion of the health care market. It was not until the 1980s, which saw double digit medical inflation and employer concern over the spiraling costs for health care, that managed care began to dominate the health care landscape. With the failure of the Clinton Health Plan in 1994, managed care became the answer most given for how to control health care costs. Managed care was going to control health care costs while preserving the high quality clinical outcomes that the American public had come to accept as a birthright.

Without much of a honeymoon, managed care quickly became everyone's favorite target for complaints about healthcare. HMOs did themselves no favors by gaining reputations as "gatekeepers," designed to hold down costs by denying services to the very consumers they were supposed to be serving. Stories of denied claims and bad outcomes became commonplace, causing consumer backlash. Even worse, healthcare costs began to climb again, leading some to say that the cost containment potential of managed care was short-lived and overstated. It was in this environment that demand management emerged as the latest cost containment strategy, and the future of managed care.

In 1997, demand management is a part of most health plans. For example, according to a nationwide study by The Center for Corporate Health, 93% of HMOs offer a health newsletter to members, while 58% provide telephone-based advice services for health problems, patient counseling and education. Forty-eight percent have self-care books dealing with prevention or advice on common conditions (Sixteen Secrets, 1996). The healthcare landscape has evolved from a fee-for-service dominated environment to a managed care dominated one. In 1996, the percentage of employees covered by managed care plans exceeded 50% for the first time (Jacobs, 1996). Under managed care, healthcare organizations typically operate under capitated budgets. The health of the population served becomes as important as the health of the individual patient. Healthcare organizations are penalized for providing excessive or unnecessary healthcare and rewarded for keeping populations healthy. Stated another way, healthcare organizations under managed care are penalized for over-utilization of resources and rewarded for appropriate utilization. This dramatic shift in the healthcare landscape has bolstered the importance of demand management.

What makes demand management different from other programs? Demand management “steers consumers to the right health care behavior, rather than merely discouraging wrong behavior” (Partridge, 1996). Demand management puts the patient in the driver’s seat and the healthcare provider team in the role of coach and facilitator. As healthcare organizations compete more for the number of “covered lives” versus number of inpatient beds, and offer amenities such as valet parking and home health care, demand management will more and more become one more way of providing quality service to healthcare customers. The Managed Care Information Center, a think-tank in

Wall Township, NJ, noted the importance of focusing on customer service. It cited a study by the Hay Group which found that those companies in the top 15 percent of growth and/or earnings put proportionately more people in customer contact positions than other companies (Sixteen Secrets, 1996). The goal of healthcare organizations should be to delight, rather than just satisfy, their customers. Quality care means more than just making ill people well again; it means avoiding or lessening sickness through preventive services, patient education, and health promotion (Ranbom, 1997). This type of quality care will delight customers, not just satisfy them.

Healthcare organizations are in the business of meeting the healthcare demands of their customers. Demand management recognizes that this demand comes from several sources. The four primary sources of demand are morbidity, perceived need, patient preference, and non-health motives.

Morbidity is the prevalence of disease or injury in a population. It is the most obvious source of demand. Some injuries or illnesses, such as a broken leg, will generate a demand 100% of the time. However, in general there is not a direct correlation between morbidity and demand. In fact, morbidity accounts for only a small portion of the variation in healthcare utilization. The primary management tool for morbidity is prevention, but studies have shown that while preventable causes account for as much as 2/3 of the deaths and years of potential life lost, these same studies suggest that preventable causes account for only 30% of inpatient hospital bed days. It appears that, if our focus is on managing hospital utilization, prevention may not be enough.

Perceived need is the most important factor influencing a person in his or her decision to utilize healthcare services. While morbidity accounts for only 6% to 14% of

the variation in healthcare utilization, studies have found perceived need to account for up to 42% of the variation in healthcare utilization (Vickery & Lynch, 1995). Given these numbers, perceived need appears to offer more opportunity to influence healthcare utilization than prevention alone.

Patient preference is the most rapidly expanding focus of demand management. Studies have shown that, given a preference, most patients will opt for the low intervention, low cost treatment (Vickery & Lynch, 1995). This is particularly apparent in decisions made at the end of life. In one study, patients with advance directives had medical bills three times smaller than those patients without advance directives (Vickery & Lynch, 1995). It seems likely that the patients without advance directives received care they might otherwise chosen to forgo if they had been able to make the choice.

It is no secret that patients often access the healthcare system to qualify for sick leave or workers compensation. Such use of the healthcare system is categorized as non-health motives. Such use is often built into the structure of our organizations with little thought to its effect on healthcare costs. However, all healthcare utilization costs money, whether any treatment is rendered or not. Consequently, demand management seeks to reduce such non-health motive utilization.

Each of the four sources mentioned above generates demand. Any effective demand management program must address each of these sources. Prevention and patient education programs must both be offered. Also, structurally induced demand must be reduced or eliminated where possible.

The tools of demand management have been around for decades. However, it was not until 1992 that these four tools were brought together into what is now known as

demand management. These four tools are telephone-based decision support, self-care communications, healthcare education programs, and health promotion programs. Used properly, these four tools can help patients choose the right treatment from the right provider at the right time. Demand management requires the patient's involvement in the decision-making process. With patient involvement comes increased satisfaction with care and greater compliance with provider guidelines. Also, such involvement is the basis for true informed consent, an area of growing concern in healthcare today.

Telephone-based decision support systems, formerly nurse-advice lines, provide patients with information as well as decision and behavior support. Staffed by experienced nurses, and sometimes even physicians, these telephone-based decision support lines rely heavily on standardized algorithms to guide staff members through a patient encounter. These algorithms are designed to screen out the most serious possibilities first to prevent the "missed diagnosis" most feared by everyone (Anders, 1997). Once the most serious possibilities are eliminated, providers assist patients in determining the best course of treatment for a given condition. Studies of telephone-based triage have documented as much as 3 to 1 dollar savings from such systems (Demand Management, 1996). In addition, such telephone-based triage lines have proven effective in reducing utilization while still satisfying customers. In one study involving 107,938 calls to a pediatric advice line over a 4-year period, just over half the patients were managed with home care only. Another 28% were given initial home care advice and an appointment for the next day to see the pediatrician. Patient satisfaction in this study ranged from 96% to 99%. Provider satisfaction with the program was 100% (Poole, et al., 1993). One executive from another company, when discussing their

telephone-based decision support system said it all when he stated, "Parents thank us for having the system." (Grandinetti, 1996).

Self-care publications give individuals in-hand resources about self-management of minor acute illnesses and injuries. Examples of common problems addressed in these publications include management of fevers, headaches, and rashes in children (Pantell, 1993). One study by Vickery showed a 17% lower rate of doctor visits by a group given self-care publications when compared to a group given no such publications (Vickery, 1996). The self-care manuals can work hand-in-hand with the telephone-based decision support line. Often, providers on the phone will refer patients to something in the self-care book. This same interaction needs to occur between primary care providers and patients. Therefore, primary care providers must first know about the self-care books and second know what advice they provide. Demand management works best when all the pieces work together.

Healthcare education programs are designed to teach patients about self-management of chronic conditions such as diabetes, heart disease, and arthritis. Because of the chronic nature of such conditions, these patients can represent a disproportionate amount of healthcare utilization. However, when properly educated, these patients are capable of self-managing many aspects of their own care. This self-management can dramatically reduce healthcare utilization. Providing medical consumers with information and guidelines about self management can reduce utilization, often by as much as 17% (Fries, et al., 1993).

Traditional health promotion programs assist patients in making beneficial lifestyle choices. These programs typically focus on areas such as weight loss and

smoking cessation. They are often based in the workplace or health club, but can be available at the mall or clinic in the form of a "health fair". Traditional health promotion programs have the potential to increase demand in the short-term. Patients given cholesterol screening and informed that their cholesterol is high will likely seek further care. However, in the long-term, demand will decrease as the effects of healthy lifestyle choices begin to manifest themselves throughout the population. Numerous studies have demonstrated substantial decreases in the number of sick days used, outpatient costs, and hospitalization costs. These same studies indicate cost savings three or more times greater than the cost of the program (Fries, et al., 1993).

Together, these "tools of the trade" of demand management empower members to better utilize healthcare resources. Traditional decision making by healthcare consumers has led to a situation where 50 percent to 80 percent of patients who really don't need a doctor's care are seeking it. Moreover, 70 percent to 80 percent of most health problems can be safely taken care of at home. Another study conducted by the Information Access Company found that more than half of health information seekers surveyed reported that the information they found influenced their medical decision-making, allowing them to forego or delay medical care and reduce their use of the healthcare system (Sixteen Secrets, 1996). The healthcare system can no longer afford to provide inappropriate or unnecessary care. It is doubtful that it ever could, but such waste was often invisible in traditional fee-for-service healthcare.

Demand management is not about rationing healthcare. The main role of the primary care manager is not to act as a "gatekeeper" who rations out treatment options to contain costs. Rather, the role of the primary care manager is to care for the patient

within the scope of his or her training and to coordinate any additional specialty or support services the patient may require (Lore, 1996). Demand management is not about rationing care, but about providing decision support within its “scope of practice” and guiding patients to the right level of care. Demand management actually allows more patients to access the healthcare system by expanding the reach of providers. Demand management is about the appropriate use of medical care. It is about empowering patients and relying on their good judgment. While this may scare some providers, studies have found that when given the right information, most patients choose the low-cost treatment alternative (Vickery & Lynch, 1995).

Doctors who fear that demand management will interfere with the doctor/patient relationship are simply misinformed. First, demand management seeks to guide the patient to make appropriate choices concerning healthcare. This will likely result in doctors being able to focus their efforts on those patients who will most benefit from visiting a physician. This helps ensure that the doctor/patient relationships formed will be beneficial and that the doctor will have more time for those who truly need him or her. Additionally, this fear fails to account for the realities of today’s information age. Doctors today are faced with patients armed with the latest medical knowledge, courtesy of the Internet and other sources. This information is often offered free and unedited, without comment or clarification, by numerous web sites. A well-run demand management program helps insure that patients receive reliable information on their health status, instead of the unfiltered, unedited information available on the Internet.

Purpose

The purpose of this study is to describe the cost benefit analysis the Patient Access and Advice Line currently operating at the U.S. Army Medical Department Activity - Heidelberg, Germany. The PAAL was expensive to build and is expensive to operate. In addition, the PAAL utilizes 11 FTEs in its operation. These numbers may not be justified if the cost savings of clinic visits avoided do not at least equal the cost of PAAL operation. Furthermore, any dollar savings from clinic visits avoided must allow for the reallocation of physician and ancillary staff from low volume to high volume areas. If no reallocation of staff is possible, no cost savings can be realized. If no cost savings can be realized from the PAAL operation, some other benefit must be attributed to the PAAL in order to justify its expense.

Methods and Procedures

The following methods and procedures were used:

1. Conduct a cost analysis of PAAL implementation. Using historical data, the cost of implementing the PAAL was calculated. This included such costs as computer hardware and software, furniture, telephone support, and personnel.
2. Determine the current cost of operating the PAAL. Using data available from the Resource Management and Civilian Personnel Departments at USAMH, the relevant monthly costs associated with operating the PAAL were determined. This included the costs of the FTEs required to run the PAAL, monthly telephone costs, and computer software upgrades. Some costs such as fixed costs and/or

sunk costs, are not relevant to an analysis of the cost of operating the PAAL. If a cost cannot be avoided or recovered no matter what we do with the PAAL, they are not relevant to this analysis.

3. Determine cost of a clinic visit. Using MEPRS data, the cost of a clinic visit was determined, specifically a visit to the USAMH Emergency Department, the Family Practice, Pediatric, or Internal Medicine Clinics.
4. Determine the number and trends of clinic visit avoidance. Using the PAAL nurse self-reported data, I determined what impact the PAAL nurses were having on clinic utilization by patients. The nurses track the impact of each call. Specifically, they note whether or not a visit was avoided based on the phone call. The cost savings potential of the PAAL is based on avoided visits, so this is statistic was critical.
5. Determine the cost savings from clinic visit avoidance. The hospital saves the variable cost of a clinic visit for every visit avoided. In the short term, the cost savings cannot be fully realized, if each avoided visit is simply filled by another patient. However, in the long term, avoided visits will allow resources to be reallocated from one section of the hospital to another, thus resulting in long-term cost savings.
6. Compare the cost savings of clinic visit avoidance with the cost of operating the PAAL. After determining the cost of operating the PAAL and the cost savings from avoided visits, the two costs were compared to determine whether or not the PAAL costs or saves the

hospital money. In today's fiscally constrained environment, the PAAL cannot be justified by customer service alone. Rather, it must be financially viable and provide the Hospital Commander with options for the reallocation of resources if it is to be considered a success.

Validity And Reliability

Validity and reliability are two critical issues that must be addressed. Reliability is measuring things correctly. Validity is measuring the right things.

Validity To determine the cost/benefit of the PAAL, both the costs of operation and the savings related to avoided visits were measured. This is sufficient to do a cost/benefit analysis. It is not, however, a complete analysis of the PAAL. A complete analysis would require an analysis of patient satisfaction and patient acuity levels, as well as a cost/benefit analysis. Such analysis, while necessary, is beyond the scope of this project.

Reliability In this study, costs were measured using the Manpower and Expense Reporting System (MEPRS) and the Managed Care Program (MCP). Clinic visits were measured based on the MED302 report and UCAPERS and avoided visits were measured based on the self-reported statistics available from the PAAL nurses.

Findings

Implementation Costs The Patient Access and Advice Line implementation required significant start-up costs. Both equipment and personnel had to be acquired in order to build the PAAL. The equipment came primarily from new purchases, while the personnel came from both the movement of personnel positions within the organization

and from new hires. In all, eleven new positions were created to form the PAAL. Although the personnel costs far outweigh the equipment costs in running the PAAL, in the start-up phase, equipment costs outweighed the personnel costs, since salaries are spread out over twelve months while equipment purchases are typically one-time payments.

The main pieces of equipment purchased for the PAAL, computers, headsets, and answering machine, were considered to have a 6-year life span. The computer software site license purchased can also be assumed to have a 6-year life span. Ten headsets (\$2004), one answering machine (\$38.33) and four new computers (\$10,500) were purchased for use by the PAAL nurses. The main expense, the purchase of the Healthwise computer software site license for \$42,654, and installation of toll free and DSN phone lines pushed the total initial investment for equipment and software to \$55,196.33.

Eleven personnel positions were added to the five positions that already existed in central appointments in order to implement the PAAL. Of the eleven positions created to implement the PAAL, six were new hires and five were internal reassignments. For the purpose of this study, the salary cost of funding these eleven positions (\$326,290) is considered part of the start-up cost. The salary cost of the five positions which existed prior to the PAAL are not considered part of the start-up cost of the PAAL.

The total initial start-up cost for the PAAL was approximately \$380,000. Of this cost, \$326,290 was for personnel and \$55,000 was for equipment and/or computer software. The remaining amount was for recurring telephone charges, new furniture, and building upgrades to accommodate the new operation.

Operating Costs The cost to operate the PAAL consists of the personnel costs (salary) for staffing and the recurring costs for telephone service. The overhead (lights, utilities, etc), is not a relevant cost for this analysis, since discontinuing the PAAL operation would not effect this cost. Some other operation would occupy the space currently occupied by PAAL, and the cost for overhead would remain. Although there is a recurring cost for telephone service, it is so small (\$73 per month) that is essentially irrelevant for the purpose of this analysis. This leaves the personnel cost of operating the PAAL as the only relevant cost.

As stated earlier, there are currently sixteen full-time personnel assigned to the PAAL operation, six nurses and ten appointment clerks. The number of personnel assigned to the original central appointments operation was five, all appointment clerks. Since it can reasonably be assumed that whether the PAAL existed or not, these five positions would be retained, it is only the cost of the six full-time nurses and five appointment clerks that will be considered as the operating cost of the PAAL. The supervisory nurse of the PAAL earns \$39,700/year. A full-time clinical nurse working at the PAAL earns \$36,051. Since there are five clinical nurses at the PAAL, the total cost for clinical nurses is \$180,255. An appointment clerk working at the PAAL earns \$21,267. Since there are five of these at the PAAL, the total cost for appointment clerks is \$106,335. The total personnel cost, and therefore the total relevant cost, to operate the PAAL for one year is \$326,290 for full time personnel, or \$27,190.83/month. (Table 1)

Table 1

PAAL Monthly Personnel Operating Costs.

Position	Number	Salary	Total	Monthly Cost
Supervisory Nurse	1	\$39,700	\$39,700	\$3,308.33
Clinical Nurse	5	\$36,051	\$180,255	\$15,021.25
Appointment Clerk	5	\$21,267	\$106,335	\$8861.25
Total	11		\$326,290	\$27,190.83

Clinic Visit Costs The PAAL has been said to save money based on its ability to avoid clinic visits. Before this issue can be discussed further, it is necessary to determine the cost of a clinic visit so cost savings due to clinic visit avoidance can be calculated.

The cost of clinic visit was calculated using MEPRS data. The first level of analysis of MEPRS data can determine the overall cost of a clinic visit by dividing the cost attributed to a given clinic by the number of visits performed by that clinic to arrive at a cost per patient visit. This level of analysis reveals a clinic visit cost of \$148 for the Emergency Room, \$100 for Family Practice Clinic, \$85 for Pediatrics, and \$124 for the Internal Medicine Clinic. The average cost of a visit to a primary care clinic at the Heidelberg MEDDAC is, therefore, \$114.

However, in order to further break down the cost of a clinic visit to fixed and variable cost, it is necessary to do further analysis. This is important because fixed costs do not change based on volume, whereas variable costs do change based on volume. In

other words, fixed costs remain the same whether a clinic sees 100 patients or 10 patients, while variable costs are higher when a clinic sees 100 patients and lower when they see 10 patients. Therefore, it is only possible to save the variable cost of a clinic visit by avoiding patient visits, since only these costs are effected by volume. The fixed costs remain the same regardless of volume, and are therefore unaffected by avoiding a patient visit.

Further analysis reveals that the variable cost for a clinic visit is as follows: \$20 for the Emergency Room, \$16 for Family Practice Clinic, \$13 for Pediatrics, and \$17 for the Internal Medicine Clinic. This variable cost is all that can be saved in the near-term. The average variable cost of a visit to a primary care clinic in Heidelberg is \$16.50. A breakdown of costs for the Heidelberg Emergency Room is shown below in Table 2. A complete breakdown of costs for the Family Practice Clinic, Pediatric Clinic, and Internal Medicine Clinic is included in Appendices B, C, and D.

Table 2

Cost per Visit for Emergency Room.

Total Visits for ER	
(FY97)	22661
Variable Costs	
Supply	\$89,431.00
Ancillary	\$307,561.02
Support	\$45,333.00
Total Variable Cost	\$442,325.02
Variable Cost per Visit	\$19.52
Fixed Costs	
ER Personnel Costs	\$1,839,664.00
Ancillary Costs	\$1,036,682.59
Depreciation	\$30,325.63
Total Fixed Cost	\$2,906,672.22
Fixed Cost per Visit	\$128.27
Total Cost per Visit	\$147.79

Visit Avoidance Trends Clinic visit avoidance trends are reported by the PAAL nurses in the Healthwise Call Manager Case Impact Report. This report tracks numerous statistics relating to patient contacts during a given period. An example of the Case Impact Report is included in Appendix C. Visit avoidance trends for the first six months of PAAL operation are shown in Table 3 below.

Table 3

Visit Avoidance Trends.

Month	Avoided Visits
Sept	143
Oct	138
Nov	143
Dec	199
Jan	144
Feb	155
Total Avoided Visits	922
Average Avoided Visits	
per month	154

Visit Avoidance Cost Savings It can be assumed that each avoided visit results in a savings of the variable cost of that visit. Therefore, 100 avoided visits will result in a

savings of \$1650. Currently, the PAAL averages 154 avoided visits per month for an average monthly cost savings of \$2535.50. This translates to a annual cost savings of \$30,426. Using a variable cost per visit of \$16.50, it would require 1600 avoided visits a month to equal the cost of operating the PAAL. Since this is nearly half as many visits as are conducted each month, the PAAL would have to reduce clinic utilization by nearly 50%. This reduction in utilization would result in a reduction in staff, and this reduction in staff would definitely result in a cost saving. It must be noted, however, that reducing the staff is not a painless process. Certainly, as workload shifts from inpatient to outpatient and from outpatient to home care, staffing patterns will change accordingly. However, it should not be expected that initiatives such as the PAAL will single-handedly reduce clinic utilization by 50%. So, if the only way for the PAAL to save money is to avoid visits, and the PAAL cannot single-handedly reduce visits by the number required for it to pay for itself, it stands to reason that the PAAL cannot save money for the USAMH. Visit avoidance cost savings are shown in Table 4 below.

Table 4

Visit Avoidance Cost Savings.

Month	Avoided Visits	Average Cost per Visit	Cost Savings
September	143	\$16.50	\$2359.50
October	138	\$16.50	\$2277.00
November	143	\$16.50	\$2359.5
December	199	\$16.50	\$3283.50
January	144	\$16.50	\$2376.00
February	155	\$16.50	\$2557.50
Monthly Average	154		\$2535.50

Cost Comparison One further problem with the avoided visit scenario of cost savings is that the avoided visit statistic is a self-reported statistic. It is neither monitored nor independently verified. After a patient contact, the PAAL nurse closes the call by entering the impact he or she has had on the patient's decision to seek further care. If the patient was initially planning on scheduling a provider visit and has been redirected to home care by the PAAL nurse, that contact is listed as an avoided visit. No one follows up on that patient to see if he follows the plan of care suggested by the PAAL nurse. That patient may call directly to the clinic and book an appointment or go to the Emergency Room for care despite the recommendation of the PAAL nurse. Anecdotal evidence suggests that this scenario occurs in perhaps 10% of the patient contacts. If this occurs,

that avoided visit recorded by the PAAL nurse is not only irrelevant, it distorts the true picture of any potential cost savings attributed to the PAAL.

Since no methodology exists for tracking this information, it is impossible to determine what percentage of the avoided visits are actually avoided visits. Since the number of avoided visits currently reported is insufficient to equal or exceed the cost of operating the PAAL, any reduction in the true number of avoided visits undermines the already untenable cost saving potential of the PAAL.

Table 5

Cost v. Savings Comparison.

Month	Avoided Visits	Average Cost per Visit	Cost Savings	PAAL Cost	Difference
September	143	\$16.50	\$2359.50	\$29,173.58	-\$26,814.08
October	138	\$16.50	\$2277.00	\$29,173.58	-\$26,896.58
November	143	\$16.50	\$2359.5	\$29,173.58	-\$26,814.08
December	199	\$16.50	\$3283.50	\$29,173.58	-\$25,890.08
January	144	\$16.50	\$2376.00	\$29,173.58	-\$26,797.58
February	155	\$16.50	\$2557.50	\$29,173.58	-\$26,616.08
Monthly Average	154		\$2535.50	\$29,173.58	-\$26,638.08

Conclusions and Recommendations

Cost, quality, and access, are all important considerations in any health care system. While all three issues should be considered by decision makers, cost should rarely be the determining factor in healthcare decisions. While this study looks exclusively at cost, it is important to note that the true benefits of a system like the PAAL are in improving the quality of patient care and access to the health care system. This is particularly true in light of the findings of this study that the PAAL does not have

significant cost savings potential at a military hospital implementing TRICARE in Europe.

Conclusions The Patient Access and Advice Line does not save money in its operation. It does not even break even. Rather, it costs approximately \$26,000 per month, or \$312,000 per year, for the USAMH to operate the PAAL. This estimate is based on every avoided visit saving the facility an average of \$16.50 in variable cost avoided. However, even this cost is probably understated for two reasons. First, not every avoided visit documented by the PAAL nurse is truly an avoided visit and second, actual clinic usage has not decreased. Patient appointments are still filled at the same level as before the PAAL was implemented.

Currently, no independent verification of an avoided visit is conducted. Once the PAAL nurse has spoken to a patient, recommended home care, and documented an avoided visit, nothing stops the patient from coming to the Emergency Room or calling the clinic directly for an appointment. Even if this occurs only 10% of the time, it reduces the monthly cost savings of the PAAL by \$1000. It is important to determine if an avoided visit truly kept the patient out of the facility. An analysis needs to be done to determine if patients who call the PAAL desiring an appointment, and are treated with home care and counted as avoided visits, are seen in a clinic or the Emergency Room for the same complaint within 24 hours of the call. This analysis could be accomplished by conducting a cross match between avoided visits and CHCS appointments.

The second reason that avoided visits do not save money is that the actual usage level in the clinics has not decreased significantly since the implementation of the PAAL. For the first half of FY97, before the PAAL was implemented, the three main primary

care clinics, Internal Medicine, Family Practice, and Pediatrics saw an average of 3,619 patients per month. During the same period in FY98, after the PAAL was implemented, these same clinics saw an average of 3,597 patients per month. These clinics continue to book appointments at the same rate now as they did before the PAAL was implemented.

Perhaps the implementation of the PAAL has reduced the number of patients requiring a referral to a host nation provider for a primary care visit. This deserves to be explored to determine if significant cost savings potential exists in this area. However, since referrals to host nation providers do not currently impact the USAMH core budget, savings in this area could not be used to fund an internal operation such as the PAAL. In the future, when CHAMPUS dollars become part of the USAMH core budget, savings in this area would directly benefit the local MTF.

Recommendations Continue operation of the Patient Access and Advice Line while conducting further research on the impact of the PAAL on the quality of care provided at USAMH and patient satisfaction with the operation. In addition, further research on the effect of the PAAL operation on referrals to host-nation providers should be conducted to determine if there is unrealized potential of saving CHAMPUS dollars. If the PAAL results in a significant CHAMPUS dollar savings, USAMH should petition the TRICARE Europe Support Office (TESO) to share at least a percentage of the savings for funding of the PAAL.

While the PAAL does not and probably cannot save money, this does not mean that it is not a valuable or worthwhile operation. Rather, it is an integral part of implementing managed care at the USAMH. In addition, it is a key component for providing quality customer service to the beneficiaries in the USAMH health network.

Rather than looking to the PAAL to save money, the USAMH should ensure that the service is provided in as cost effective manner as possible.

Implementing managed care requires the ability to collect, analyze and use data. The PAAL provides an operation uniquely suited to assisting in this data collection effort. Staffed by Registered Nurses and operating a sophisticated data collection system, the PAAL can properly assess a patient and direct him or her to the appropriate level of care. The PAAL nurse can authorize appropriate care after duty hours and initiate a Non-availability statement, making the claims process simpler and easier for the patient. It is even possible for the PAAL nurse to act as the first level reviewer in an outpatient utilization management system, which is coming to the USAMH in the near future.

Once the burden of attempting to save money is lifted off the PAAL, it can begin to realize its full potential to improve the quality of patient care, improve patient satisfaction, and improve access to care within the USAMH footprint. The PAAL is a vision of the future of healthcare, but its operation must be tailored at the facility level, not bound by some external vision of what a nurse assessment system should be. As health care continues to move from an inpatient model to an outpatient model, and from an outpatient model to a wellness model, operations like the PAAL will increasingly be the link between the MTF and the patient. The future is here at our fingertips. We must seize it and tailor it for our facility.

References

Anders, G. (1997). Phone nurses hold down costs, but some experts fear mistakes. [on-line], Available: <http://interactive5.wsj.com/editorials>

Anders, G., & Winslow, R. (1997). Turn for the Worse: HMOs' Woes Reflect the Conflicting Demands. The Wall Street Journal.

Choate, K., & Walton, L. (1997). Cost Analysis and Patient Satisfaction of a Health Care Advisor Program.

Demand Management Generates Bottom-Line Results. (1996). [on-line]. Available: www.medsource.com

Edwards, B., (1997). Insurance Costs to Rise. Morning Edition (NPR) [on-line], Available: <http://www.elibrary.com/>

Edwards, B., (1998). Health Care Costs Rising. Morning Edition (NPR) [on-line], Available: <http://www.elibrary.com/>

Grandinetti, D. (1996, June). Patient phone calls driving you crazy? Medical Economics. 72-85.

Hansen, F., (1997). Healthcare Costs: Where Are They Headed? [on-line], available: <http://www.elibrary.com/>

Jacobs, C.M. (1996). The challenge for managed care is demand management. [On-line], Available: <http://www.interqual.com/medint1.htm>

Kaiser Permanente Celebrates Its 50th Anniversary Year. [on-line], Available: <http://ncal.kaiserpermanente.org>

Lore, A. M. (1996). Is there a pot of gold at the end of the managed care rainbow? Managed Healthcare, 42-44.

McCarthy, R. (1997). It Takes More than a Phone to Manage Demand. Business and Health, 36-42.

Pantell, R.H., Fries, J.F., & Vickery, D.M. (1993). Taking Care of Your Child: A Parent's Guide to Complete Medical Care. (4th ed.) . Reading, Massachusetts : Addison-Wesley Publishing Company.

Partridge, P. (1996). Demand management moving to forefront. Health Care Strategic Management, 14 (4), 14-16.

Perry, M. (1998). A White Paper on the Supply and Demand for Military Health Care Benefits

Ranbom, R. (1996). Health-care costs have risen at three times the general rate of inflation, and last year, Americans spent \$738 billion on health care—more than any other nation in the world. [on-line], Available, www.cols-ceo.com

Simon, R. (1993). A Flawed Remedy MANAGED CARE. Time.

Sixteen Secrets to Managed Care Market Growth. The Managed Care Information Center. (1996). Jenkins, M.A., editor.

Vickery, D.M. (1996). Toward appropriate use of medical care. Healthcare Forum Journal, 39 (1), P 15-19.

Vickery, D.M. & Lynch, W.D. (1995). Demand Management: Enabling Patients to use Medical Care Appropriately. Journal of Occupational and Environmental Medicine, 37 (5), 551-557.

Wolcott, B. (1996). Managed Care's Driving Force: Demand Management.

Healthwise Call Manager**Case Impact Report**

Date of Report 3/2/98

DateRange 2/1/98 to 2/28/98	Case Status Closed Only	Program All	Group All
	Counselor All	Provider All	Home Site All

Total cases: 1145

Avg. Contacts/Case: 1.1

Contacts with research assigned: 0.1%

Problem Categories

Respiratory	300	26.2%
Ear-Nose-Throat	291	25.4%
Infectious Disease	164	14.3%
Digestive System Disorders	75	6.6%
Bone/Muscle/Joint	74	6.5%
Dermatology	71	6.2%
Urology	43	3.8%
Ophthalmology	27	2.4%
Gynecology	25	2.2%
Neurology	24	2.1%
Pediatrics	16	1.4%
Referred	10	0.9%
Wellness	8	0.7%
Obstetrics	6	0.5%
Endocrinology	4	0.3%
Cardiology	3	0.3%
Dental	2	0.2%
Immunology	2	0.2%

Problem Descriptions: Top 40

Colds/Flu (465.9)	156	14.8%
Fever (780.6)	134	12.7%
Ear Infection (382.9)	118	11.2%

Healthwise Call Manager

Case Impact Report

Date of Report 3/2/98

DateRange	Case Status	Program	Group
2/1/98 to 2/28/98	Closed Only	All	All
	Counselor	Provider	Home Site
	All	All	All
Strep/Sore Throat (462.0)	90	8.6%	
Cough (786.0.2)	88	8.4%	
Sinusitus (473.9)	59	5.6%	
Rash (691.0)	41	3.9%	
Urinary Tract Infection (599.0)	39	3.7%	
Vomiting (787.03)	25	2.4%	
Asthma (493.9)	19	1.8%	
Bronchitis (490.0)	19	1.8%	
Abdominal Pain (789.0)	18	1.7%	
Conjunctivitis (372.3)	17	1.6%	
Diarrhea (558.9)	17	1.6%	
Back Pain (724.2)	16	1.5%	
Other (000.00)	15	1.4%	
Infectious Mononucleosis (075.0)	13	1.2%	
Other (000.00)	12	1.1%	
Other (000.00)	10	1.0%	
Referred (0.0)	10	1.0%	
Scarlett Fever (034.1)	10	1.0%	
Abnormal Vaginal Bleeding (626.8)	9	0.9%	
Headaches (307.8)	9	0.9%	
Other (000.00)	9	0.9%	
Ringworm (110.9)	9	0.9%	
Extremity Pain (729..5)	8	0.8%	
Headaches: Migraine (346.0)	8	0.8%	
Neck Pain (723.1)	7	0.7%	
Other (000.00)	7	0.7%	
Other (000.00)	7	0.7%	

Healthwise Call Manager

Case Impact Report

Date of Report 3/2/98

DateRange	Case Status	Program	Group
2/1/98 to 2/28/98	Closed Only	All	All
	Counselor	Provider	Home Site
	All	All	All
Shoulder Injury (959.2)	7	0.7%	
Yeast Infections (112.1)	7	0.7%	
Other (000.00)	6	0.6%	
Wheezing (786.09)	6	0.6%	
Joint Pain (719.4)	5	0.5%	
Other (000.00)	5	0.5%	
Other (000.00)	5	0.5%	
Ankle Injury/Sprain (959.7)	4	0.4%	
Fracture (829.0)	4	0.4%	
Pregnancy (V22.2)	4	0.4%	

Reason For Call

Considering MD office visit	891	77.8%
Considering Urgent Care appt	136	11.9%
Information Seeking	91	7.9%
HT/Self-Care information	42	3.7%
Considering ER visit	12	1.0%
Considering PCM Phone consult	6	0.5%
Medication Refill	5	0.4%
Other	5	0.4%
Considering medical test	4	0.3%
Considering treatment/procedure	1	0.1%
Prevention/screening info	1	0.1%
Wellness info	1	0.1%

Primary Care Providers: Top 40

Craig Webb	146	14.9%
Mark O. Grajcar	100	10.2%
Glynda Lucas	97	9.9%

Healthwise Call Manager

Case Impact Report

Date of Report 3/2/98

DateRange 2/1/98 to 2/28/98	Case Status Closed Only	Program All	Group All
	Counselor All	Provider All	Home Site All

Annemarie Woda	70	7.1%
Kenneth Trzepkowski	67	6.8%
Andrew Barr	65	6.6%
Michael Serwacki	59	6.0%
Andrew O. Torrance	58	5.9%
Tracey Saboy	57	5.8%
Civilian Not Assigned	55	5.6%
Andrew Bauer	49	5.0%
Maria Vandermeid	45	4.6%
Military or Family Member Retired	34	3.5%
Robert Walker	25	2.5%
Patient Nato	12	1.2%
Robert D. Swift	11	1.1%
Emil P. Lesho	10	1.0%
Newborn Not assigned,	6	0.6%
ERIC JONES	4	0.4%
Edward Michaud	3	0.3%
Grant Foresster	3	0.3%
Active Duty Not Assigned	2	0.2%
Ethan Emmons	2	0.2%
Erik Jones	1	0.1%
Other reasons Not assigned	1	0.1%
Thomas Frank	1	0.1%

HomeSites: Top 40

Heidelberg	1,112	93.3%
Heidelberg-pay patient	54	4.5%
OLC-Babenhausen	8	0.7%

Healthwise Call Manager

Case Impact Report

Date of Report 3/2/98

DateRange
2/1/98 to 2/28/98

Case Status
Closed Only

Program
All

Group
All

Counselor
All

Provider
All

Home Site
All

OLC-Mannheim	7	0.6%
OLC-Darmstadt	3	0.3%
	2	0.2%
OLC-Butzbach	2	0.2%
OLC-Freidberg	2	0.2%
OLC-Hanau	2	0.2%

Program Impact

Severity

Moderate	638	55.8%
Mild	474	41.4%
Severe	32	2.8%

Impact

Moderate	648	56.6%
Minimal	413	36.1%
Significant	64	5.6%
None	19	1.7%

Type of Care Impact

	<u>Avoided</u>		<u>Expedited</u>		<u>Prepared</u>	
MD Visit	112	9.8%	418	36.5%	4	0.3%
ER Visit	43	3.8%	81	7.1%	2	0.2%
Self-Care	8	0.7%	251	21.9%	1	0.1%
MD Call	6	0.5%	48	4.2%	0	0.0%
Health Information Given	1	0.1%	152	13.3%	0	0.0%
Clinic Referral for disposition.	0	0.0%	14	1.2%	0	0.0%
Medication	0	0.0%	3	0.3%	1	0.1%
Other	0	0.0%	5	0.4%	1	0.1%
Sick Call	0	0.0%	11	1.0%	0	0.0%

Health Enhancements

Healthwise Call Manager

Case Impact Report

Date of Report 3/2/98

DateRange

2/1/98 to 2/28/98

Case Status

Closed Only

Program

All

Group

All

Counselor

All

Provider

All

Home Site

All

Coached in Self-Care	167	14.6%
Explained PAAL function/hours	128	11.2%
Health Information Given	125	10.9%
Improved Dr/Pt communication	5	0.4%
Asthma Educator Service Explaine	1	0.1%

Risks

Counseled

Significant Risk Reduction

Self Care Class	12	1.0%	0	0.0%
Smoking Cessation	2	0.2%	0	0.0%

Healthwise Call Manager

Call Activity Detail

Date of Report 3/2/98

Date Range

2/1/98 to 2/28/98

Case Status

All

Program

All

Group

All

Counselor

All

Provider

All

Home Site

All

Total Contacts during Date Range: 1214

Total Contacts To Date: 1215

Total Cases with a Contact during Date Range: 1151

Open: 6

Closed: 1145

Total New Cases: 1149

Avg # Contacts/Case during Date Range: 1.1

Avg # Contacts/Case To Date: 1.1

% Research Requests: 0%

Total First-Time Calls: 236

Subscribers using service to date: 789

Percent Utilization: 1%

Caller Demographics (Initial caller for case)

Subscriber: 423 34.8%

Spouse: 767 63.2%

Dependent: 12 1.0%

Other: 10 0.8%

Ineligible: 2 0.2%

Caller Age

Range: 5.9 to 67.7

Median: 34.7

Caller Gender

Female: 959 79.0%

Male: 245 20.2%

Healthwise Call Manager

Call Activity Detail

Date of Report 3/2/98

Date Range

2/1/98 to 2/28/98

Case Status

All

Program

All

Group

All

Counselor

All

Provider

All

Home Site

All

Patient Demographics (by case)

Subscriber:	161	13.3%
Spouse:	240	19.8%
Dependent:	801	66.0%
Other:	11	0.9%
Ineligible:	1	0.1%

Patient Age

Range: 0.1 to 75.3

Median: 10.7

Patient Gender

Female: 707 58.2%

Male: 496 40.9%

Problem Categories

Respiratory	319	26.3%
Ear-Nose-Throat	296	24.4%
Infectious Disease	183	15.1%
Digestive System Disorders	84	6.9%
Bone/Muscle/Joint	77	6.3%
Dermatology	72	5.9%
Urology	44	3.6%
Gynecology	28	2.3%
Ophthalmology	27	2.2%
Neurology	25	2.1%
Pediatrics	17	1.4%
Referred	11	0.9%
Endocrinology	10	0.8%
Wellness	8	0.7%

Healthwise Call Manager

Call Activity Detail

Date of Report 3/2/98

Date Range

2/1/98 to 2/28/98

	Case Status	Program	Group
	All	All	All
	Counselor	Provider	Home Site
	All	All	All
Obstetrics	6	0.5%	
Cardiology	3	0.2%	
Dental	2	0.2%	
Immunology	2	0.2%	

Problem Descriptions: Top 40

Colds/Flu (465.9)	170	23.4%
Fever (780.6)	148	20.4%
Ear Infection (382.9)	119	16.4%
Cough (786.0.2)	90	12.4%
Bronchitis (490.0)	21	2.9%
Abdominal Pain (789.0)	20	2.8%
Diarrhea (558.9)	20	2.8%
Asthma (493.9)	19	2.6%
Conjunctivitis (372.3)	17	2.3%
Back Pain (724.2)	16	2.2%
Abnormal Vaginal Bleeding (626.8)	9	1.2%
Headaches (307.8)	9	1.2%
Extremity Pain (729..5)	8	1.1%
Headaches: Migraine (346.0)	8	1.1%
Ankle Injury/Sprain (959.7)	4	0.6%
Constipation (564.0)	4	0.6%
Fracture (829.0)	4	0.6%
Arthritis (716.9)	3	0.4%
Contraception (V25.09)	3	0.4%
Diaper Rash (691.0)	3	0.4%
Eye Injury (921.9)	3	0.4%
Hearing Loss (389.9)	3	0.4%
Alternative Medicine (000.00)	2	0.3%

Healthwise Call Manager

Call Activity Detail

Date of Report 3/2/98

Date Range

	Case Status	Program	Group
2/1/98 to 2/28/98	All	All	All
	Counselor	Provider	Home Site
	All	All	All
Carpal Tunnel Syndrome (354.0)	2	0.3%	
Circumcision (V50.2)	2	0.3%	
Croup (464.4)	2	0.3%	
Epilepsy/Seizure Disorders (345.9)	2	0.3%	
Eyelid Problems (373.0)	2	0.3%	
Heel Problems (Plantar Fasciitis) (2	0.3%	
ACL (Anterior Cruciate Ligament T	1	0.1%	
Airway Obstruction (519.8)	1	0.1%	
Allergies (477.9)	1	0.1%	
Bruise/Contusion (910.0)	1	0.1%	
Chest Pain (786.5)	1	0.1%	
Cleft Lip/Palate (749.0)	1	0.1%	
Cold Sores (054.9)	1	0.1%	
Contact Dermatitis (692.9)	1	0.1%	
Diabetes (250.)	1	0.1%	
Gout (274.9)	1	0.1%	
Growth and Development (V20.2)	1	0.1%	

Reason For Call

Considering MD office visit	934	76.9%
Considering Urgent Care appt	146	12.0%
Information Seeking	109	9.0%
HT/Self-Care information	45	3.7%
Considering ER visit	12	1.0%
Other	11	0.9%
Considering PCM Phone consult	6	0.5%
Medication Refill	5	0.4%
Considering medical test	4	0.3%
Considering treatment/procedure	1	0.1%

Healthwise Call Manager

Call Activity Detail

Date of Report 3/2/98

Date Range

Date Range	Case Status	Program	Group
2/1/98 to 2/28/98	All	All	All
	Counselor	Provider	Home Site
	All	All	All
Prevention/screening info	1	0.1%	
Wellness info	1	0.1%	

Primary Care Providers: Top 40

Craig Webb	147	14.8%
Mark O. Grajcar	100	10.1%
Glynda Lucas	98	9.9%
Annemarie Woda	70	7.1%
Kenneth Trzepkowski	67	6.8%
Andrew Barr	65	6.6%
Andrew O. Torrance	64	6.5%
Michael Serwacki	59	5.9%
Tracey Saboy	57	5.7%
Civilian Not Assigned	56	5.6%
Andrew Bauer	49	4.9%
Maria Vandermeid	45	4.5%
Military or Family Member Retired	34	3.4%
Robert Walker	25	2.5%
Patient Nato	12	1.2%
Robert D. Swift	11	1.1%
Emil P. Lesho	10	1.0%
Newborn Not assigned,	6	0.6%
ERIC JONES	4	0.4%
Edward Michaud	3	0.3%
Grant Foresster	3	0.3%
Active Duty Not Assigned	2	0.2%
Ethan Emmons	2	0.2%
Erik Jones	1	0.1%
Other reasons Not assigned	1	0.1%

Healthwise Call Manager

Call Activity Detail

Date of Report 3/2/98

Date Range

2/1/98 to 2/28/98

Case Status	Program	Group
All	All	All
Counselor	Provider	Home Site
All	All	All

Thomas Frank	1	0.1%
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HomeSites: Top 40

Heidelberg	1,123	93.3%
Heidelberg-pay patient	54	4.5%
OLC-Babenhausen	8	0.7%
OLC-Mannheim	7	0.6%
OLC-Darmstadt	3	0.2%
	2	0.2%
OLC-Butzbach	2	0.2%
OLC-Freidberg	2	0.2%
OLC-Hanau	2	0.2%

Healthwise Call Manager

Call Distribution Report

Date of Report 3/2/98

DateRange
2/1/98 to 2/28/98

Type of Calls
Both
Counselor
All

Case Status
All
Provider
All

Program
All
Home Site
All

Group
All

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Total
0600	3 0.2%	6 0.5%	8 0.7%	5 0.4%	10 0.8%	0 0%	0 0%	32 2.6%
0700	62 5.1%	90 7.4%	80 6.6%	76 6.3%	63 5.2%	0 0%	0 0%	371 31%
0800	53 4.4%	59 4.9%	58 4.8%	41 3.4%	41 3.4%	0 0%	0 0%	252 21%
0900	41 3.4%	58 4.8%	44 3.6%	29 2.4%	37 3.0%	0 0%	0 0%	209 17%
1000	33 2.7%	24 2.0%	21 1.7%	15 1.2%	19 1.6%	0 0%	0 0%	112 9.2%
1100	11 0.9%	26 2.1%	15 1.2%	12 1.0%	8 0.7%	0 0%	0 0%	72 5.9%
1200	6 0.5%	16 1.3%	8 0.7%	16 1.3%	12 1.0%	0 0%	0 0%	58 4.8%
1300	12 1.0%	13 1.1%	8 0.7%	1 0.1%	7 0.6%	0 0%	1 0.1%	42 3.5%
1400	10 0.8%	4 0.3%	6 0.5%	1 0.1%	6 0.5%	0 0%	0 0%	27 2.2%
1500	7 0.6%	7 0.6%	10 0.8%	2 0.2%	3 0.2%	0 0%	0 0%	29 2.4%
1600	3 0.2%	3 0.2%	3 0.2%	0 0%	0 0%	0 0%	0 0%	9 0.7%
1700	1 0.1%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%	1 0.1%
Total	242 20%	306 25%	261 21%	198 16%	206 17%	0 0%	1 0.1%	1,214 100%

COST PER VISIT FOR FAMILY PRACTICE						
Total Visits for Family Practice	22646					
			Ancillary Costs			
Variable Costs			Fixed	Variable	Total	
Supply	\$ 43,077.00	Pharmacy	\$ 681,421.64	\$ 238,867.87	\$ 920,289.51	
Ancillary	\$ 312,570.50	Clin Path	\$ 132,922.15	\$ 42,778.26	\$ 175,700.41	
Support	\$ 1,214.00	Anatomical Path	\$ 9,783.16	\$ 174.91	\$ 9,958.07	
Total	\$ 356,861.50	Blood Bank	\$ 15,992.89	\$ 314.63	\$ 16,307.52	
Variable Cost per Visit	\$ 15.76	Diag Radiology	\$ 75,472.37	\$ 10,893.35	\$ 86,365.72	
		Ultrasound	\$ 8,498.88	\$ 207.04	\$ 8,705.92	
Fixed Costs		CT Scan	\$ 6,134.14	\$ 147.18	\$ 6,281.32	
FP Personnel Costs	\$ 797,415.00	EKG	\$ 743.00	\$ 14.82	\$ 757.82	
Ancillary Costs	\$ 1,080,286.60	CSS	\$ -	\$ -	\$ -	
Depreciation	\$ 30,305.56	Observation Unit	\$ 24,795.15	\$ 420.48	\$ 25,215.63	
Total	\$ 1,908,007.16	Administrative Spt	\$ 50,342.99	\$ 15,479.69	\$ 65,822.68	
Fixed Cost per Visit	\$ 84.25	Base Opns	\$ 42,185.38	\$ 1,665.19	\$ 43,850.57	
		Logistics	\$ 31,994.85	\$ 1,607.08	\$ 33,601.93	
Total Cost per Visit	\$ 100.01	Total:	\$ 1,080,286.60	\$ 312,570.50	\$ 1,392,857.10	
		Note: Variable costs include the following:				
		Travel and Transport of Persons				
		Travel and Transport of things				
		Printing and Reproduction				
		Laundry and Dry Cleaning				
		Contract Health Care				
		Supplemental and Cooperative Health Care				
		Medical/Dental Supplies				
		Other Supplies				
		Pharmaceutical Supplies				

COST PER VISIT FOR PEDIATRICS						
Total Visits for Pediatrics		9059				
				Ancillary Costs		
Variable Costs				Fixed	Variable	Total
Ancillary	\$	97,115.24	Pharmacy	\$ 64,984.93	\$ 74,508.28	\$ 139,493.21
Cost Pool	\$	17,960.38	Clin Path	\$ 33,869.91	\$ 10,900.34	\$ 44,770.25
Total	\$	115,075.62	Anatomical Path	\$ 53.90	\$ 0.96	\$ 54.86
Variable Cost per Visit	\$	12.70	Blood Bank	\$ 199.78	\$ 3.93	\$ 203.71
			Diag Radiology	\$ 24,238.57	\$ 3,495.83	\$ 27,734.40
Fixed Costs			Ultrasound	\$ 1,563.62	\$ 38.09	\$ 1,601.71
FP Personnel Costs	\$	326,433.40	CT Scan	\$ 1,320.73	\$ 31.68	\$ 1,352.41
Ancillary Costs	\$	208,215.56	Observation Unit	\$ 16,652.68	\$ 115.38	\$ 16,768.06
Depreciation	\$	12,123.03	Administrative Spt	\$ 29,868.83	\$ 6,456.01	\$ 36,324.84
Cost Pool	\$	112,170.59	Base Opns	\$ 19,605.76	\$ 775.00	\$ 20,380.76
Total	\$	658,942.58	Logistics	\$ 15,856.85	\$ 789.74	\$ 16,646.59
Fixed Cost per Visit	\$	72.74	Total:	\$ 208,215.56	\$ 97,115.24	\$ 305,330.80
Total Cost per Visit	\$	85.44	Note: Variable costs include the following:			
			Travel and Transport of Persons			
			Travel and Transport of things			
			Printing and Reproduction			
			Laundry and Dry Cleaning			
			Contract Health Care			
			Supplemental and Cooperative Health Care			
			Medical/Dental Supplies			
			Other Supplies			
			Pharmaceutical Supplies			

COST PER VISIT FOR INTERNAL MEDICINE					
Total Visits for Internal Med	11013			Ancillary Costs	
				Fixed	Variable
Variable Costs			Pharmacy	\$ 98,555.02	\$ 112,668.52
Supply	\$ 11,922.00		Clin Path	\$ 93,602.22	\$ 30,105.93
Ancillary	\$ 175,089.36		Anatomical Path	\$ 2,703.56	\$ 48.34
Support	\$ 2,515.00		Blood Bank	\$ 634.14	\$ 12.48
Total	\$ 189,526.36		Diag Radiology	\$ 61,736.98	\$ 8,897.40
Variable Cost per Visit	\$ 17.21		Ultrasound	\$ 5,107.30	\$ 124.41
			CT Scan	\$ 19,069.96	\$ 457.56
Fixed Costs			EKG	\$ 1,011.96	\$ 20.70
FP Personnel Costs	\$ 636,171.00		PFT	\$ 24,736.61	\$ 2,033.01
Ancillary Costs	\$ 518,374.77		Observation Unit	\$ 50,073.82	\$ 883.21
Depreciation	\$ 14,737.00		Administrative Spt	\$ 113,096.59	\$ 16,428.07
Total	\$ 1,169,282.77		Base Opns	\$ 18,742.04	\$ 713.40
Fixed Cost per Visit	\$ 106.17		Logistics	\$ 29,304.57	\$ 2,696.33
			Total:	\$ 518,374.77	\$ 175,089.36
Total Cost per Visit	\$ 123.38				\$ 693,464.13
			Note: Variable costs include the following:		
			Travel and Transport of Persons		
			Travel and Transport of things		
			Printing and Reproduction		
			Laundry and Dry Cleaning		
			Contract Health Care		
			Supplemental and Cooperative Health Care		
			Medical/Dental Supplies		
			Other Supplies		
			Pharmaceutical Supplies		