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Naval Hospital Pensacola Nurse Call Center

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Disclaimer

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Abstract

This study is a summative evaluation of the Nurse Call Center (NCC) at the Naval Hospital Pensacola (NHP), Florida. This management project discusses the current and historical aspects of telephone advice and triage call centers and provides a historical overview of the NCC at NHP. The study also identifies various strengths and weaknesses of the NCC and makes recommendations for improvement.

Naval Hospital Pensacola Nurse Call Center

Introduction

Purpose

This study is a summative evaluation of the Nurse Call Center (NCC) at Naval Hospital Pensacola (NHP). A summative evaluation primarily provides a historical overview of the subject of interest. This study will provide that overview as well as discuss identified areas of potential improvement and possible quantitative evaluation methods for the NCC.

Conditions Which Prompted the Study

The United States Navy supports the mission of the Department of Defense. The mission of the Navy is to maintain, train, and equip combat-ready Naval forces capable of winning wars, deterring aggression and maintaining freedom of the seas (US Navy Website, 2005). To accomplish the Navy mission, Navy Medicine must achieve their mission. The mission of the Navy Medical Department is to support the deployment readiness of all uniformed services, and to promote, protect and maintain the health of all those entrusted to its care at anytime and anyplace (Navy Medicine Fact-sheet, 2003).

"Navy Medicine provides high quality, economical health care to about 700,000 active duty Navy and Marine Corps members. It serves a total 2.6 million active duty (includes all services), retired and family members at a little more than half

the national per capita average cost. All while supporting
contingency, humanitarian and joint operations around the world
with highly trained, dedicated health care professionals
adhering to the principles of Total Quality Leadership" (NMO Web
Site, 2005).

In August 1995, the Department of Health Affairs (DHA),
through the Assistant Secretary of Defense Office, issued a
memorandum to establish uniform Access to Care (ATC)
requirements for primary care managers (PCM). This mandate
required all facility commanders to meet the same access
standards for TRICARE Prime enrolled populations. Four main
baseline requirements were established. The first is that
travel time should not exceed 30-minutes from the enrollee's
home to the delivery site. The second is that emergency
services will be available and accessible within the service
area 24-hours a day, seven days a week. The third requirement
is that the office wait time for enrollee's in non-emergent
situations are not to exceed 30-minutes. The final requirement
is that enrollee's will have access to PCM services on a same-
day basis. Access must be available by telephone or appointment
on a 24/7 basis. When the PCM is not available, adequate
coverage that meets the needs of the enrollee must be arranged
(DHA, 1995).

In September of 1996, the DHA issued a memorandum that was intended to clarify policy concerning after-hours care for TRICARE prime enrollees. The DHA reinforced the requirement for PCM access as a tool designed to address acute care needs that often surfaced during evening hours. These needs have traditionally caused a significant increase in emergency room workload, which in turn results in increased health care costs. The intended effect of the PCM access requirement was to increase beneficiary access to information and clinically appropriate intervention while reducing costs associated with inappropriate use of emergency services. This memorandum further identified that the after hours PCM should be available to triage Prime beneficiaries, either directly, or by providing back-up consultation through an advice nurse (DHA, 1996).

The Problem

Since the DHA released the ATC standards, military facilities have strived to establish a creative method that will provide increased access to care for beneficiaries in an effective, efficient, and equitable manner. Utilizing a demand management (DM) tool that many civilian organizations have been using since the 1980s (Lynch & Otis, 2000), NHP established the NCC.

The goal of the NCC is to reduce human error during telephone triage. The NCC seeks to provide patients with a

telephone triage service that is based on scientific knowledge and provides timely information without potential harmful delays in care, allowing the patient to be better informed when making health care decisions (NCC SOP, 2003). Although the NCC currently monitors its level of patient demand/workload, there is currently no method available to measure the achievement, or lack there of, for the NCC meeting its prescribed goal of reducing human error during telephone triage.

The primary catalyst that has brought increased attention on efficiency is the Navy Surgeon General's call for quality economical health services (SG Priorities, 2004). This is a direct reflection of the Secretary of the Navy's initiative to use smart business practices as the Navy invests the American taxpayers' hard-earned dollars (National Press Club, 2004). Therefore, Navy Medical facilities are reevaluating their programs to ensure the most efficient utilization of resources. Since establishment, NHP's Nurse Call Center has not had any analysis conducted to provide an evaluation of its benefit to stakeholders. In order for NHP to properly evaluate the effectiveness of the NCC, a measurement tool must be established to identify both the success rate of mission achievement and the areas of needed improvement for the NCC.

Background

In June 2002, the TRICARE Management Activity (TMA),
through the Bureau of Medicine and Surgery, provided ten million
dollars of funding to support ATC for each branch of service.
In order to receive funding for ATC projects, each facility was
required to review ten categories in which the projects could be
requested and had to meet approval criteria. Once approved, TMA
would monitor the metric for each funded proposal quarterly, for
a period of eighteen months. At the conclusion of the trial
period, the project would either continue to receive funding or
be discontinued (Lyons, 2002).

Captain Pamela Roark had the vision of establishing a
standardized system at NHP that would reduce human error during
telephone triage. In relation, Captain Kim Lyons felt the
organization could greatly benefit from the hiring of an Access
to Care Manager. The funding available through TMA created an
opportunity for both of these visions to be realized.

Upon notification of the opportunity, Captain Lyons quickly
created and submitted a proposal for the hospital with five
possible projects to improve ATC at NHP. The first proposal was
to establish an Access to Care Manager. The second and third
proposals, in accordance with the prescribed TMA guidelines,
were to hire one full time equivalent (FTE) to provide training
at NHP and its twelve Branch Health Clinics (BHCs) on the use of
ATC tools and measures. The fourth proposal was to hire three

registered nurses (RNs) add support to the Central Appointment staff that could triage telephone calls using a standardized algorithm-based software system for providing and recording medical advice. The final proposal submitted to TMA was to contract with a consultant to evaluate and facilitate Open Access for the Internal Medicine and Family Practice Clinics (ATC Proposal Matrix, 2002). "Open Access" is the ability of a patient to receive a primary care appointment in a timely manner (Murray and Tantau, 1999). Of the five projects submitted for approval, two were accepted and funded, the proposal for an Access to Care Manager and the hiring of three triage nurses. These resources were combined to create what today is the Nurse Call Center (NCC).

In August 2002, Captain Kim Lyons led a working group that formed to create a project implementation plan for the NCC. It was decided that a staff nurse, CDR Roesgen, would act as the ATC Manager. The working group was required to provide a complete and solid plan of action for the implementation and establishment of the NCC.

In November of 2003, NHP established the NCC to embody its strategic plan of safe, effective, patient-centered, timely, efficient and equitable world-class health care. Since the NCC goal is to reduce human error during telephone triage, a computerized, up-to-date triage database, called Care-Enhance

Call Center© (CECC), was utilized (NCC SOP, 2003). The CECC

program is a product of McKesson Health Solutions, a well known

corporation that identifies themselves as a leader in products

designed to reduce costs and improve quality across health care

(McKesson Homepage, 2004).

In November 2004, the NCC staff was increased from three

full time equivalents to six full time equivalents. Further,

the NCC staff was moved into a room in the facility to allow

them to operate interdependently. These steps have been taken

without the knowledge of whether or not the NCC has been

successful in meeting its goal. Without the ability to measure

the productivity of the NCC, NHP's ability to optimize all its

resources will be left in question.

Literature Review

Traditionally, health care has been coordinated in

person, at the hospital. Appointments, diagnosis, treatment,

recovery, and referrals have all been functions that could only

be accomplished in the presence of a medical staff. Today, many

of these standard practices have changed because of the growth

and advancement in technology. Common practices will continue

to change as technology advances. The atmosphere is ripe for

innovation as technology continues to flourish. Consumers are

becoming more aware of health care and alternative methods for

gaining information concerning diagnoses, disease conditions,

and treatment options (Henry, 1998). This trend is referred to as *Consumerism*. Patients want information at their fingertips and desire to know more about their care (Haag, Cummings, and McCubbrey, 2004).

In 1999, over seventy million Americans used the Internet to obtain health information and that number has continued to grow each year (Shi & Singh, 2001). A Pew Internet and American Life Project study showed fifty two million adults used the Internet to search for health care information (Simmons, 2001). Of these users, the majority, seventy percent, stated that the information obtained influenced their decision making process in treating an illness or condition. Today, according to WebMD.com, over twenty million people access WebMD daily to obtain health care information (WebMD, 2004).

Although many patients have taken advantage of the technology that has increased their access to health care information, the majority reach a point at where they can become confused by the medical terminology and how to use the information obtained (Levine & Birnbaum, 1998). To address the issue of moral hazard, many organizations utilize demand management. DM can be defined as a collective process of providing patients with health care information, along with the support to use it appropriately (Levine & Birnbaum, 1998). Jan Kastens (1998) defines DM as the provision of health information

to consumers, which leads to an educated and empowered member, who then is able to access and participate in medical care decisions to assure the right kind of care is provided at the right time. Kastnes further notes that ninety percent of a health plan's expenditures are consumed by the healthiest one third of it members, with the remaining ten percent being its members that have chronic or life threatening illnesses. The healthy ninety percent can be a major focus for the health plan through the utilization of DM techniques.

Albert and Rioran (2002), define DM as the restriction or limitation of health care services to reduce utilization and control moral hazard. In their assessment, DM is useless in reducing moral hazard when the patient does not feel the economic impact and is insulated from the costs of health care as a result of insurance coverage. Further, they identify DM as a technique which simply informs the patient of the various options for health care, without assisting the patient in making an informed decision.

As observed throughout the literature, DM programs have been said to be more useful in the managed care setting versus the fee for service arena. In the managed care setting, DM programs seek to educate patients and encourage them to seek appropriate health care prevention and treatment, resulting in the avoidance of more costly chronic or life threatening

illnesses (Mohler & Harris, 1998; White, 1998). This is
particularly important since many managed care organizations
generally receive a capitated payment to treat an identified
population. On the other hand, a fee for service organization
may elect to increase utilization through the use of DM tools by
encouraging their patients to obtain health care services over
self-care options (Mohler & Harris, 1998; White, 1998).

Authors Lynch and Otis (2000) note that thirty to forty
percent of physician visits are unnecessary and simply were
cases where the patients overestimated the severity of their
illness. This is time spent with the provider that could be
utilized by another patient whom is truly in a state of need.
These authors also argue that family doctors in the past, whom
answered their own telephone calls and managed their own
schedules, probably performed some sort of triage and education
or self care advice over the telephone, thus making individual
practitioners the beginnings of telehealth.

The roots of DM go back much farther than many
professionals realize. Levine and Birnbaum (1998) indicate the
beginnings of DM as having started with the US Army's Automated
Medical Outpatient System (AMOS) in 1960, then to self care
texts that appeared in 1976. Throughout the 1970s and in the
1980s, several scientists researched self care and DM showing
that utilization of health care services was highly dependent on

attitudes, beliefs, values, and expectations. Finally, DM was
expanded beyond wellness and acute symptoms to chronic illness,
telephone outreach and telecare management (Levine & Birnbaum,
1998).

It is well noted that DM tools have the potential to
contribute to cost-efficient quality care, improve outcomes, and
even increase patient satisfaction, but they are not guaranteed
(Mohler & Harris, 1998; Lynch & Otis, 2000). According to White
(1998), it was estimated that the United States was spending in
the range of 200 billion dollars on inappropriate health care.
More and more, taking the opportunity to become more cost-
efficient is being sought. Inappropriate utilization encourages
health care organizations toward the use of some variation of DM
to educate and redirect patients seeking inappropriate care
towards a more suitable option. Some examples of DM tools or
technologies are self-care books and other health education
materials, telephone triage services, decision support services,
health risk appraisals, health promotion, and disease and
disability management programs (Mohler & Harris, 1998; Lynch &
Otis, 2000).

Telephone call centers are being widely used today.
Typically, an individual seeking health care information or
advice can simply call into the center. The call is directed
dependant on the caller's concern, clinical or non-clinical.

From that point, the caller is triaged, evaluated, and educated as he is directed to the appropriate healthcare resource. Call Center nurses are assisted in this task through the utilization of clinical algorithms (pathways/protocols). Each call receives appropriate attention as a result of specially designed software that reduces variation in procedures (Levine & Birnbaum, 1998; Mohler & Harris, 1998). Although call centers provide an excellent opportunity for DM, the seldom addressed issue of miscommunication between the sender and receiver can occur. Call centers must be particularly vigilant to ensure seekers of health care information indeed understand the recommendations for care they receive (Leclerc, 2003).

Throughout the literature review, no quantitative research has been noted for DM. However, several qualitative studies have been conducted with encouraging results. These studies have shown that if the option was given, seventy seven percent of those surveyed would rather avoid going to the doctor's office if their concerns could be addressed over the phone (Herzog, 2003). Typical patient satisfaction rates have also been recorded as high as ninety five percent (Lynch & Otis, 2000). The results vary, but many show great opportunity for improvement in health care deliver.

Population

The population discussed is that of the active duty military, their family members, retired military and their family members, reservists on active duty and their family members and all ineligible care seekers that accessed the NCC.

Ethical Considerations

Ethical concerns may be present if staff members perceive the possibility of reprimand or negative outcomes as a result of a negative evaluation. Interpretation of the summative evaluation and the relationship between the researcher and staff personnel may be another concern.

Data Collection/Source

The data used to identify the category and number of calls received by the NCC was obtained from the Senior Nurse Supervisor of the NCC, Mrs. Judith Allen-Jewell. This data was pulled from the NHP CHCS computer database.

Validity and Reliability

Data collected will be considered valid and reliable as the information is subjected to validation by the NCC staff, as well as by the quality assurance staff and officer. As with any research, the possibility of human error exists.

The Nurse Call Center

The NCC of NHP established its standard of care in accordance with the accepted practices standards of the American Academy for Ambulatory Care Nursing (AAACN). Registered Nurses

(RNs) staff the NCC and must meet prescribed educational and experience requirements to be hired. The four goals for the NCC's Patient Care Delivery Model are: (1) improve patient access to care; (2) increased efficiency in healthcare delivery/management; (3) ensure appropriate utilization of available resources; and (4) return beneficiaries to the Military Treatment Facility (MTF) for care. The NCC operational hours are Monday through Friday, 0600-2000 and Saturday and Sunday 0700-1200. After hours calls are taken by the Emergency Room staff.

Training for the NCC is conducted for newly selected triage nurses, provided by McKesson computer education facilities. Annual competency training is also conducted. Triage procedures for the NCC are up-to-date with current practices and involve a patient-centered approach to encourage collaboration of treatment needs with the patient/caller. There are three defined triage categories. The first is emergent, which covers problems deemed to pose an imminent threat to life, limb, or vision. The second category, urgent, comprises problems that are deemed to pose a potential threat to life, limb, or vision. The final category, non-urgent, includes problems that pose no reasonable threat to life, limb or vision and will receive home care instructions or a routine appointment with instructions for follow-up). Risk management and performance improvement issues

are also addressed, to include special and difficult situations
and reporting procedures (NCC SOP, 2003).

Discussion

Reducing the cost of health care services is such an
important issue that the President has discussed it during
highly attended functions. In the State of the Union Address in
January 2004, President Bush noted that "Our nation's health
care system, like our economy, is also in a time of change" and
that the "dramatic progress has brought its own challenge, in
the rising costs of medical care" (Whithouse.gov, 2004). The
U.S. health care system has the latest developments in medical
technology and well-trained specialists, but these add to the
high costs of health care services (Shi & Singh, 2001). Demand
management strategies, such as the NCC, can be an unprecedented
opportunity to attack some of the negative aspects of America's
health care system, such as high cost.

It is obvious, as noted throughout the literature, that
nurse advice lines, such as the NHP NCC, are a value added
component of a health care organization. According to the
executive leadership at NHP, the operating cost for running the
NCC averages around $800,000 per year. Because of the continual
pressure to increase efficiency, military facilities must
continue to utilize techniques and better business methods that
provide an excellent return on investment (ROI).

During the calendar year 2004, the NCC received an average of 821 telephone calls each month. January 2004 was the low month with 492 call and August was the highest with nearly 1200 calls. In September 2004, a natural disaster hit the Pensacola region, Hurricane Ivan. This caused a reduction in the volume of incoming calls taken by the NCC during that month and the following months. However, as daily living returned to what could be described as normal, NCC phone calls jumped back over the 1000 call mark and has not fallen since. Figure 1 displays the trend in phone calls taken by the NCC from the period January 2004 through February 2005. This year already (2005), the average for the first two months of calendar year 2005 is 1612 calls each month (Figure 1). This number is expected to continue to rise as the NCC expands its job scope.

Currently, a staff physician conducts quality assurance reviews of the calls triaged by the NCC. This will be a vital evaluation method as the NHP leadership will soon authorized the NCC staff to approve prescription refills for patients from a pre-approved medication refill list. Furthermore, the NHP is currently evaluating and updating its active clinical practice guidelines (CPGs). As this process occurs, the NCC will be considered to evaluate patients using the CPGs, to reduce unnecessary visits for the patient. The Urinary Track Infection CPG is the first of these being considered for approved use by

the NCC (Allen-Jewell, 2005). These initiatives, as well as the diversion of telephone consults, follow-up calls and triage calls, are great examples of how the NCC has been a value added component of NHP.

There are professionals who believe that DM does not solve the moral hazard problem. Albert and Riordan (2002) would argue that, ceteris paribus, a patient in the DM system will indeed select futile medical treatment options. They further identify an ideal insurance model which specifies a treatment threshold that equates the marginal benefits of treatment to the marginal cost. The NCC combats the negative outcome of patients making poor choices when selecting treatment options. As prescribed in the NCC contract and SOP, the NCC staff routinely conducts patient education during every call to ensure the patient is fully informed of his treatment options and alternatives (NCC SOP, 2003; NCC Contract, 2004). Chapple and Rogers (1999) note that educated patients result in a reduction in utilization while having no negative impact on the quality of health and further reduces unnecessary health care consumption.

Another positive aspect of the NCC is that it combines DM with the essence of case management and disease management as they triage the population at hand. These types of efforts tie all aspects of health care into one continuum that elevates

positive outcomes for a population while more effectively utilizing all available resources.

Recommendations

The NCC boasts numerous positive aspects that lead observers to identify it as a viable and valuable component of NHP and rightfully so. However, there is always room for improvement. One issue that is recommended for consideration is the variation in practice patterns that may exist as a result of the NCC transferring responsibility for after hours triage calls to the ER department. The NHP meets the standards of having a contact point for patients after hours by using this method, but the question remains, "Is this the best utilization of the NCC and the ER department" and "Would the extra funding that pays the ER for after hours coverage for phone calls be used to hire additional nursing staff for late evening hour shifts?"

Next, it is recommended that further research be conducted to involve a comparison between the cost of the calls taken by the NCC and the cost avoidance for triaging those calls in the NCC versus the cost had the patient reported to the ER or his PCM. Dependent on the volume of calls during the month, the average cost per call for the NCC ranges from $11 - $25 (Allen-Jewell, 2005). Yet, the question still remains as to what value gained or additional cost was avoided by triaging the call through the NCC. This can be one useful measurement tool.

White (1998) highlights how the United States spends an estimated $200 billion a year on unnecessary and inappropriate care. Considering this, it is vital to establish a performance measurement instrument. The instrument will be utilized to make day to day decisions, as well as executive decisions affecting the NCC and NHP. Being that the NCC costs $800,000 a year to operate, it will behoove the NHP executive staff and managed care department to create a monitoring instrument that will provide them an accurate overview of the NCC and if the operating costs of operation is the best use of NHP resources.

Next, I believe further research needs to be conducted on other Nurse Call Centers or Nurse Triage Lines being utilized at various military instillations. It was recently discovered that other Navy military treatment facilities, such as Naval Hospital Jacksonville, FL and Naval Hospital Camp Lejune, NC also have a version of the NCC in operation. By conducting a comparative analysis of current NCCs in operation, the military can seek to create an optimal model for establishing, operating and monitoring military NCCs. This research could have to potential to affect the Department of Defense from an enterprise level, greatly reducing *growing pains* and redundant errors within the DoD, resulting in more effective and efficient utilization of resources while providing beneficiaries with an increased level of access to health care information.

Finally, I believe the NCC has not been optimally marketed to staff and patients. I myself, until this study, as well as other NHP staff members and many other active duty personnel and dependents, were not familiar with the NCC. Because of this, I do not believe the NCC has been utilized to its full potential. Many young families and service members are present in the population we serve. I believe that by adding a marketing tool to the mix, we can better educate our patient population from the beginning of their time under out care. Some suggestions are to have a NHP information packet for incoming personnel that check-in their medical record when reporting onboard or by having a staff member conduct a brief presentation at the Naval Air Station Pensacola base indoctrination class for newly reporting service members.

Conclusion

The NCC at NHP is theoretically an excellent resource for its patient population. Ensuring effective marketing of this resource will result in a better informed patient population. This will equip the beneficiaries with the option to seek professional advice without rushing to the ER or the waiting room of their PCM. According to Mohler and Harris (2001), this can lead NHP beneficiaries to have the information required to make informed health decisions that optimize health care resources and health outcomes.

The NCC supervisor monitors the level of workload realized through the NCC by documenting and tracking the number of calls received. During this documentation, the calls are dispersed into identified categories of triage, as noted in Figure 1. This monitoring instrument could possibly be used for many purposes, but is currently only being used to annotate the level and category of calls received. NHP should establish workload criteria for differing levels of NCC staffing. Then, a measurement tool should be created for evaluation of goal achievement. This will allow the executive leadership of Naval Hospital Pensacola the ability to make more highly informed decisions on the use and scope of the NCC as a demand management tool.

Figure 1

NCC Triage Disposition, per month for Jan 04-Feb 05

Feb 2004-Feb 2005 with 2004 Avg.
Disposition per Triage

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	2004 AVG	JAN 05	FEB 05
■ 911	20	10	29	19	10	24	17	31	28	31	23	18	22	35	39
◨ ER	42	77	88	89	59	98	106	121	71	58	66	80	80	97	98
■ Call PCM STAT	3	3	1	3	1	8	12	8	4	16	7	10	6	12	12
▨ 4 HOURS	46	44	75	81	61	152	122	113	59	105	91	98	87	128	167
□ 24 HOURS	170	198	272	276	181	289	324	433	192	254	287	345	268	477	498
▨ 72 HOURS	42	49	67	59	47	54	85	133	53	90	112	106	75	115	121
□ 2 WEEKS	12	12	34	12	13	30	28	34	18	26	37	22	23	42	40
■ Home Care	51	48	89	90	97	74	106	135	77	109	133	173	99	222	254
■ Other	106	255	219	205	110	151	179	182	94	98	143	190	161	376	491

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