An Analysis of the Effectiveness of a Coding Compliance Training Program at the Troop Medical Clinic at Moncrief Army Community Hospital

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The Troop Medical Clinic (TMC), supported by Moncrief Army Community Hospital (MACH), experiences 2000 average annual patient encounters weekly. Based upon an initial audit of 107 records conducted by the Patient Administration staff in July of 2006, only 28% are coded in accordance with the Evaluation and Management Codes (E & M). If one executes an extrapolation for 50 weeks, then nearly 72,000 patient encounters are documented and reported incorrectly. These incorrect medical documentation errors potentially cost MACH over $750,000 on an annual basis. By October 2006, coding compliance had improved to around 60% as measured by an audit of 120 records. MACH’s Commander after a decision briefing by the acting Chief of Patient Administration opted to hire additional certified coders through an existing contract and reorganized the utilization of the six certified coders employed by MACH on October 17, 2006. Initially two dedicated coders were assigned to the TMC to train, audit and assist clinicians in the coding process. Additionally, the Armed Forces Health Longitudinal Technology Application (AHLTA) decision concentrated his efforts to improve each clinician’s skills, knowledge and abilities in the usage of AHLTA. The results of
Measuring Outpatient Medical Coding Training Effectiveness

RUNNING HEAD: Measuring Outpatient Medical Coding Training Effectiveness

Army-Baylor University Graduate Program in Health and Business Administration

An Analysis of the Effectiveness of a Coding Compliance Training Program at the Troop
Medical Clinic at Moncrief Army Community Hospital

A Graduate Management Project Submitted to the Program Director for the Degree of Masters in
Healthcare Administration

April 27, 2007

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Fort Jackson, SC 29207
Measuring Outpatient Medical Coding Training Effectiveness

Thanking each and every individual who has facilitated my earning of graduate degree is a task too large to list on one page. This document’s genesis is from the vision of Lieutenant Colonel James Laterza, the Deputy Commander of Administration at Moncrief Army Community Hospital (MACH). This document evaluates a training program he conceived and the Patient Administration Department executed. Many thanks to him for guaranteeing ample time was always available for this document’s completion. Without the three data sets generated by the Patient Administration Department and the assistance from the MACH librarian, there would be no completed Graduate Management Project (GMP). Not enough can be said about the assistance provided by the Army-Baylor faculty, especially Doctor Kenneth Finstuen.

Completing a graduate degree was totally facilitated by my family. My parents provided the resources and the support for most of my undergraduate education and for that I am truly grateful. My wife Kristin, even in the midst of her own tragic loss, has remained ever supportive of my attending and completing the Army-Baylor program. Without my fellow classmates, my surviving the first didactic semester would have been doubtful.

Deserving of most of my gratitude and the dedication of this document is my late maternal grandmother, Louise Eugenia Smith Surratt. Education was her second religion. She was a fierce competitor who possessed enough ambition for her entire family. Without inheriting some of her drive, I would have never completed a graduate degree.
Measuring Outpatient Medical Coding Training Effectiveness

Abstract

The Troop Medical Clinic (TMC), supported by Moncrief Army Community Hospital (MACH), experiences 2000 average annual patient encounters weekly. Based upon an initial audit of 107 records conducted by the Patient Administration staff in July of 2006, only 28% are coded in accordance with the Evaluation and Management Codes (E & M). If one executes an extrapolation for 50 weeks, then nearly 72,000 patient encounters are documented and reported incorrectly. These incorrect medical documentation errors potentially cost MACH over $750,000 on an annualized basis. By October 2006, coding compliance had improved to around 60% as measured by an audit of 120 records. MACH’s Commander after a decision briefing by the acting Chief of Patient Administration opted to hire additional certified coders through an existing contract and reorganized the utilization of the six certified coders employed by MACH on October 17, 2006. Initially two dedicated coders were assigned to the TMC to train, audit and assist clinicians in the coding process. Additionally, the Armed Forces Health Longitudinal Technology Application (AHLTA) trainer concentrated his efforts to improve each clinician’s skills, knowledge and abilities in the usage of AHLTA. The results of the final audit in January 2007 showed coding compliance had increased to over 83%. This study showed improved coding compliance. An analysis of the audit results via Chi Square suggests that the improvement in coding was likely due to the training program and not subject to random events.
Measuring Outpatient Medical Coding Training Effectiveness

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Measuring Outpatient Medical Coding Training Effectiveness

Introduction

Moncrief Army Community Hospital’s (MACH) primary medical mission is supporting the training of Initial Entry Training (IET) soldiers in the United States Army at Fort Jackson, SC. IET is commonly referred to as Basic Training. This medical support is primarily achieved through the Troop Medical Clinic (TMC). The TMC is a high volume outpatient clinic experiencing up to 2,000 patient encounters weekly during training surges occurring each summer. An average of 15 providers who are physicians, physician assistants (PA) and nurse practitioners (NP) provide the primary care to the soldiers in training. These providers are Active Duty Military and General Schedule Employees (GS). All providers are compensated by salary. The GS employees may receive performance bonuses. Reimbursement for the care provided to IET soldiers is not through the TRICARE system.

Accurate and precise measurement of patient workload in the Military Health Care System (MHS) is often a daunting undertaking that is fraught with unique hurdles indigenous to the United States’ Federal Health Care Sector. The federal health care system is primarily composed of the Veterans Administration (VA), the Department of Defense (DOD) and the US Public Health Service (USPHS). Lacking either explicit financial rewards or penalties, it is difficult to directly provide incentives to federal sector clinicians to invest the necessary time to correctly document every patient encounter. According to Armour, Pitts, Maclean, Cangialose, Kishel, Imai, and Etchason (2001), the utilization of financial incentives is a technique that Managed Care Organizations (MCO) use, in the attempt to manage clinician behavior. Additionally, Coleman, Moran, Serfilippi, Mulinski, Rosenthal, Gordon, and Mogielnicki (2003) directly suggest that documentation of clinical encounters is “inconsistent” within the VA. They
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cite several causes for these inconsistencies from providers’ duties to differing levels of coding proficiency among the providers.

Compounding the Military Health System’s difficulties in attaining accurate and consistent measures of its provider productivity is the implementation of new computer systems that facilitate every patient in the MHS possessing an Electronic Medical Record (EMR). The most recent computer software system is the Armed Forces Health Longitudinal Technology Application (AHLTA). AHLTA started its lifecycle being called Composite Health Care System II (CHCSII). As AHLTA relies on CHCS data and is being implemented in phases, legacy systems such as CHCS are still in operation due to problems with AHLTA that are beyond the scope of this project. These operational issues AHLTA possess do not affect coding accuracy in this project. For simplicity, it is safe to assume that providers possess differing levels of proficiency using AHLTA. These differing levels of proficiency are considered within the US Army Medical Command (MEDCOM) to vary substantially.

To combat these varying levels of proficiency and to implement the usage of AHLTA, a specialized software trainer is employed at MACH. Proficiency with AHLTA is the foundation to accurate EMR documentation. Without proper documentation, there is no vehicle to monitor the intensity of care provided to the patient. Improper documentation can potentially adversely affect the quality of care a patient receives. If no vehicle exists that accurately and reliably summarizes the aggregate amount of care the Medical Treatment Facility (MTF) delivers, how can administrators forecast and justify the resources required to provide a population care?

One of the more accepted tools to measure the amount of outpatient care provided in the United States is the Resource Value Unit (RVU). The RVU is a function of the International
Disease Classification, 9th edition (ICD-9CM), Current Procedural Terminology (CPT®) and Evaluation and Management (E & M) coding. The foundation for the RVU is correct ICD-9CM since it is the diagnosis of the problem or issue that has generated the need for medical care.

The ICD-9CM codes (diagnosis) leads to treatment (s). Every treatment possesses a specific code called the E & M code. According to Ingenix (2006), the application of Anesthesia for Trans Urethral Resection of the Prostate (TURP) has a CPT® code of 00914 (p35). Modern computer systems like AHLTA require accurate codes to correctly document procedures. If a biopsy is performed by the Urologic Surgeon, then a CPT® Code of 52204 is noted (Ingenix, 2006). In an outpatient care setting, all the care the patient receives until the patient departs the medical facility is noted by codes into the Electronic Medical Record (EMR) and upon release, all the codes are tabulated yielding a Resource Value Unit (RVU).

The reader should note that the ICD-9CM is the starting point and the note that the CPT® as the path to the E & M code. Often in medicine there are multiple paths or treatments to manage a specific condition or disease. Some differing treatments yield the same E & M code while other patient treatment schemes are more or less resource intensive when directly compared.

Through a formula, each RVU is converted into a reimbursement rate for MACH. For Fiscal Year (FY) 2007, each RVU is valued at $49.92 according to FY 2006, July Performance Based Budget finalized on September 15, 2006 (http://seportal.amedd.mil/sites/rmFY06%20profit%20and%20loss20data20site/forms/allitems.aspx). The RVU value is based upon the intensity of the E & M code for outpatient care.
Conditions Prompting the Study

MACH’s senior leadership was faced with the reality that reimbursement for rendered medical services to trainees in the Troop Medical Clinic (TMC) was not achieving expected levels. Leadership expected a gap to exist between reported work load and actual work load. An explorative audit of 107 records selected on a random basis in the TMC, revealed that only 28% of the audited medical records were coded correctly based upon the documentation each medical encounter possessed. This audit was conducted by the acting Chief of Patient Administration (PAD). From extrapolation, one could estimate that this lack of coding compliance at the TMC was costing the MTF over $750,000 on an annualized basis FY 2006, July Performance Based Budget finalized on September 15, 2006 (http://seportal.amedd.mil/sites/rmFY06%20profit%20and%loss20data%20site/forms/allitems.aspx). Of more concern to the command was the likelihood that a much lower volume of work was being reported than the MTF was actually providing.

Coding compliance at the TMC is critical for MACH, since the TMC is where the bulk of the MACH patients are treated. At the TMC infrequent coding compliance training had been occurring as well as incomplete AHLTA initial training. It was also evident that AHLTA recurring training was less than optimal. In fact, coding compliance is one of the eight key initiatives that MACH leadership must assess and brief the South Eastern Regional Medical Command on a recurring basis. According to the eight key initiatives for FY 2006, MACH’s over all coding compliance rate for outpatient services was 78% with a stated compliance standard of 100% (FY 2007 MACH Business Plan). Referring to the graphical depiction in
figure 1, the reader can note that outpatient care at MACH constitutes a large majority of the
total care as the care relates to total reimbursements for care provided.

As expected, leadership at the MTF became very interested in improving coding
compliance at the TMC. As providers’ awareness of the leadership’s interest increased, the
providers nearly doubled their coding accuracy over a six week period without any direct
influence from a training program.

Statement of the Problem

A subsequent exploratory audit of the TMC occurring in October 2006 has shown an
improvement in coding compliance. From a rate of 28% correctly coded in July 2006, the
October rate improved to nearly 60%. 60% compliant still denies the MTF substantial
reimbursements for care that is provided to patients. The Hawthorne Effect may account for this
initial improvement in coding since no additional system was activated to train clinicians in
coding compliance or the use of AHLTA.¹

This study will examine the affect of implementing a coding compliance training
program at the TMC. The TMC is the site of care where the medical record is updated with each
patient encounter. For any training program to be effective, it must improve provider proficiency
in the use of AHLTA, thereby improving the medical documentation for every patient encounter.
With improved documentation in the EMR, the foundation is set for correct coding of the
encounter.

¹ The Hawthorne Effect as described by Robbins in 2003, postulates that workers are motivated by conformity to
such things as group standards, group sentiments, and security. The Hawthorne Studies have led to greater
paternalism exercised by management resulting in management interest yielding increased worker output.
The purpose of this literature review is to establish foundation as to why coding is essential to any health care organization and cite that the research suggests that correct coding is difficult to attain. First, the literature review will begin with a history of coding, and transition to how coding has shaped the current health care landscape. A discussion will follow of how differing health care entities interact with coding systems. The differing health care entities include but are not limited to third party payers, patients, providers, and supporting professions such as health care administrators, information management professionals and medical coders. Another aspect of the literature review is to discuss how coding compliance is an issue facing providers throughout the United States Health Care delivery system.

The origin of our modern medical coding system dates back to the Bertillon Classification of Disease. Doctor Bertillon was a French physician who devised the first recognized system in 1893. Today, in the United States, his system has evolved into the International Classification of Disease, 9th edition, Clinical Modification (ICD-9 CM). ICD-9 CM is a coding system whose publishing proponent is the World Health Organization (WHO) (Whalen, 1998). The genesis of the ICD-9 CM system dates to 1977 when a steering committee was appointed by the National Centers for Health Statistics and its purpose was to provide “advice and counsel” in the modification of the ICD-9 to fit the clinical needs in the US (Ingenix, 2006, pii). “Prior to the 1980s the purpose of coding diagnosis and procedures was primarily for internal use by the health care facility (Trully & Rulon, 2000).”

When using ICD-9 CM codes, providers are referring to the diagnosis only. The diagnosis usually leads to a course of treatment acceptable to the standards of care. The
treatment is described in a standardized manner by the CPT® codes. CPT® codes were first devised by the AMA and officially published in 1966. Once published, their use became nearly ubiquitous in the medical arena by both providers and third party payers. According to the AMA (2006), the adoption of CPT® codes by the Centers for Medicare and Medicaid services (CMS) in 1983 solidified the use of the standardized coding system. This adoption by CMS mandated the use of CPT® codes if the US government was funding the care through Medicare or Medicaid.

To determine how complicated the care delivered was to patients, certain codes generated, and to predict the quantity of resources certain codes consumed, Yale University’s Diagnostic Related Groups (DRGs) were developed. Since the DRGs could somewhat reasonably translate a diagnosis and treatment into a certain magnitude of resources consumed, the DRG were adopted by CMS as part of the Prospective Payment System (PPS). DRGs became applicable to hospital inpatient care in 1983 (Jacobs, 1991). Other coding systems to affect the health care delivery system, namely the Evaluation and Management (E & M), Ambulatory Payment Classification (APC), and the Resource Value Based Relative Value Scale (RVRB) exist or have existed in the healthcare arena. Dorman, Loeb, and Sample (2006) describe at length the continuous evolution process procedural terminology undergoes with WHO, AMA, and CMS. Furthermore they outline the ramifications for over coding medical encounters.

The functions of the coding system are manifold. In addition to coding’s use for reimbursement, coding serves to populate the data bases that are local for the provider as well as national and international data bases that compile health care statistics. Alexander,
Conner, and Slaughter (2003) specifically note that coding systems only function as intended when accurate charting by the clinician occurs. The old adage, “garbage in yields garbage as an output” suggests that inaccurate medical coding leads to unreliable data bases regarding health care data. Moss and Schexnayder (2001) posit that good patient care is the primary reason to code correctly.

According to Duck, Delia and Cantor (2001) measuring the productivity of primary care providers is difficult, since health status is a difficult quantity to measure (p3-4). Additionally, Albritton, Millier, Johnson and Rahn state “Relative Value Units (RVUs) offer one way to measure productivity directly (1997, p715).” The reader may conclude that the RVU is an expedient tool to measure provider productivity. Hence, DOD has experienced the adoption of the RVU across the entire spectrum of outpatient care in the MHS.

One issue the RVU possesses is the fact that incorrect coding leads to RVU values that are wrong. Glass states (2002) that “RVUs are closely tied to coding, appropriate coding is key to the provision of good data used in any analyses (p51).” Since the MHS relies upon data residing in the Military Health System Mart (M2) correct coding is essential if one is to accept Glass’ statement, the reliability and validity of M2 data is directly impacted by accurate and precise medical documentation in AHLTA. AHLTA is a primary source of data that populates the information contained in M2. Without sound coding compliance, M2 is likely a poor source of outpatient information. Without accurate and reliable information, it may be assumed that health care administrators will have unreliable information to base their decisions. Patients, clinicians, and US tax payers will ultimately gain by better coding compliance.
According to Hoffman and Jones (1993) intense coding compliance training programs increase hospital reimbursements at least 10%. They state the importance of training programs being sustained for both providers and the medical coders is paramount. As the reader can note, coding compliance has been of interest to administrators for at least a dozen years.

King, Sharp and Lipsky (2001) illuminated coding as an issue with their nationwide study of 600 randomly selected family physicians in the United States. They concluded that family physicians have “substantial” coding error rates and a portion of their error rate is directly attributable to a lack of training in coding. Nationally, this can be a very large sum of money. With the Prospective Payment System (PPS), there is “the implication that organizations must control their operations, matching or exceeding competitive alternatives (Griffith, & White, 2002).” It seems evident that with PPS, providers must provide care at a low enough cost to justify their continued existence. Maximization of revenues from any third party payer can only be obtained through perfect coding.

**Purpose**

To determine the affects of investing resources in the implementation of a specified training plan whose goals are to improve coding compliance at the TMC. Correct coding is one aspect of maximizing revenues for MACH. Also it is of interest to determine the magnitude of any improvements the coding compliance training program generates. If the coding compliance training program significantly improves coding to a significant measurable degree, then the training program can be expanded to other outpatient clinics at MACH including, Pediatrics, Internal Medicine and the Urgent Care Clinic.
Ethical Considerations

Patient confidentiality was safeguarded by the fact that the Patient Administration Division at MACH maintained the security of the medical records before, during and after the three audits. The author never had access to the names or content of the records selected for the randomized audits.

Method and Procedures

Three independently executed audits of the proper application of E & M codes were conducted. The first was an exploratory audit revealing significant coding deficiencies in the TMC. The first audit was 107 independently selected random medical records executed by the PAD acting chief. The first audit examined the number of under coded records (where documentation justified a more acute case than was reported through the record’s code) as 57, the number of correctly coded records was 30, and the number of over coded records as 20. Over coded records are of special interest because over coding can lead to additional audits to investigate fraudulent medical billing by outside agencies. Table 1 depicts the results of the first audit.
Table 1.

Results of the August 2006 Audit of the Troop Medical Clinic’s Coding Compliance Audit

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correctly Coded</td>
<td>30</td>
<td>28.04</td>
</tr>
<tr>
<td>Under Coded</td>
<td>57</td>
<td>53.27</td>
</tr>
<tr>
<td>Over Coded</td>
<td>20</td>
<td>18.70</td>
</tr>
<tr>
<td>Total</td>
<td>107</td>
<td>100.00</td>
</tr>
</tbody>
</table>

n=107 randomly audited records. Note: Specific errors only in E & M codes were noted.

For reliability and validity of the audit results, all three audits were executed by the acting Chief of PAD. Internal consistency of the audits was achieved by each audit being conducted by the same individual. To improve audit reliability in future studies having a panel of auditors to conduct audits would likely improve the integrity of the audits. Since this study directly compares audits number two and audit number three, unaccounted for variability may exist between the two audits. For illustrative purposes audits one and two are compared as well as audits two and three. Table 2 shows the results of the second audit.
Table 2.

Results of the October 2006 Audit of the Troop Medical Clinic’s Coding Compliance Audit

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correctly Coded</td>
<td>73</td>
<td>60.8</td>
</tr>
<tr>
<td>Under Coded</td>
<td>20</td>
<td>16.7</td>
</tr>
<tr>
<td>Over Coded</td>
<td>27</td>
<td>22.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>120</td>
<td>1.00</td>
</tr>
</tbody>
</table>

n=120 randomly audited records. Only E & M coding errors were noted

This study’s duration is 90 days between the second and third audits. The training plan was devised by Brenda Briggs, the acting Chief of the Patient Administration Division and Lieutenant Colonel James Laterza, the Deputy Commander of Administration at MACH. On October 18, 2006, Colonel James Mundy, the Commander of MACH authorized the following plan:

1. Hire two additional medical coders for the purpose of having two coders in the TMC. In the TMC one will serve as coding compliance trainer to coach and teach clinicians. The second coder will primarily audit records to provide feedback to the clinicians. Feedback will not only consist of oral pointers, but will also consist of a documented written scorecard so clinicians and their supervisors can directly track the progress or lack of progress clinicians have
toward coding compliance. Driggs and Zupko (2000) suggest that audits by coders benefit clinicians by providing them with feedback regarding their documentation in the medical record.

2. The contract AHLTA training individual will devote his primary efforts to the TMC where he can actively implement recommendations in AHLTA that are clinician driven to better utilize the clinicians time. These recommendations will consist of templates tailored to the TMC and specific computer utilization techniques for navigating through the many user screens AHLTA possesses.

3. If positive results are measured via the third audit, the coding compliance training program will become a permanent fixture to the TMC and may be expanded to all outpatient clinics at MACH.

4. As an adjunct to the coding compliance training program, a career path of progression will be developed for the certified medical coders. At least two supervisor coding positions (inpatient and outpatient) plus one chief coder is likely to be created. Supervisory responsibility for the coders has yet to be determined in each individual clinic, but the command has strong interest in the coders answering to the TMC clinic chief.

Statistical analyses of the audits two and three occurred. Descriptive statistics for the three audits were computed. Table 2 depicts the results from audit two and Table 3 shows the results from audit three. The dependent variable is correct coding. The analysis is by Chi Square. The unit of measurement is the number of records audited. The dependent criterion variable of correct coding is dichotomously coded as 1, if the E & M is coded correctly. If the record is coded incorrectly, then the dichotomous coding will be 0. The independent variables will be categorical variable reflecting specific audits conducted.
The alternate hypothesis is that a coding compliance training program will positively affect correct coding compliance rates. The null hypothesis is that a coding compliance program will have no affect on coding compliance to any measurable degree that is significant.

Results

Table 1 shows the results from the explorative audit number one. With the January 2007 audit, 120 records were reviewed and 100 were coded correctly. Table 3 depicts the results of the final audit. Some of this improvement may still originate from the Hawthorne effect, but an increase from 60.8% correctly coded to 83.3% clearly demonstrates a measurable improvement in coding compliance. A Chi Square Analyses of the three audits was executed. Audits one and two were compared as well as directly comparing audits two and three to determine where the significance resides concerning the improvement in coding.

Table 3.

<table>
<thead>
<tr>
<th>Results of the January 2007 Audit of the Troop Medical Clinic’s Coding Compliance Audit</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
</tr>
<tr>
<td>Correctly Coded</td>
</tr>
<tr>
<td>Under Coded</td>
</tr>
<tr>
<td>Over Coded</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

n=120 randomly audited records. Only E & M coding errors were noted
Table 4 depicts the omnibus analyses of the three audits and the results of the analysis is Chi Square (2) = 71.65, p < .001. This is significant suggesting that the coding compliance improvement trend from August 2006 to January 2007 was not due to random chance. The reader can safely infer that the coding compliance training plan did indeed improve coding.

Table 4. Omnibus Chi Square Analyses of audits one, two and three

<table>
<thead>
<tr>
<th></th>
<th>August 2006</th>
<th>October 2006</th>
<th>January 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correctly Coded</td>
<td>30</td>
<td>73</td>
<td>100</td>
</tr>
<tr>
<td>Incorrectly Coded</td>
<td>77</td>
<td>47</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>107</td>
<td>120</td>
<td>120</td>
</tr>
</tbody>
</table>

Only E & M coding errors were noted

To determine where the significance exists regarding the coding compliance improvement audits one and two were compared by Chi Square as well as audits two and thee. Tables 5 and 6 depict the structure of the two analyses.
Table 5. Chi Square Analyses of audits one, and two.

<table>
<thead>
<tr>
<th></th>
<th>August 2006</th>
<th>October 2006</th>
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<tbody>
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<td>47</td>
</tr>
<tr>
<td>Total</td>
<td>107</td>
<td>120</td>
</tr>
</tbody>
</table>

Only E & M coding errors were noted

For audits one and two Chi Square (1) = 24.55, p < .001. This improvement is significant and may be attributable to the command’s interest in coding accuracy.

Table 6. Chi Square Analyses of audits two and three

<table>
<thead>
<tr>
<th></th>
<th>October 2006</th>
<th>January 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correctly Coded</td>
<td>73</td>
<td>100</td>
</tr>
<tr>
<td>Incorrectly Coded</td>
<td>47</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>120</td>
<td>120</td>
</tr>
</tbody>
</table>

Only E & M coding errors were noted

For audits two and three Chi Square (1) = 15.09, p < .001. This final observed improvement is still very significant, but the improvement’s magnitude was not as great as with the observed
improvement between the first two audits. This final improvement is still extremely important with such a strong computed value for Chi Square. In fact the smaller magnitude of improvement may be attributable to a ceiling of 100% for coding compliance. As one approaches 100% correctness, each measurable amount of improvement can become more difficult to attain with most any measured process.

**Discussion and Recommendation**

Continued training to sustain TMC coding compliance is indicated. An expansion of this particular training methodology is indicated for the rest of outpatient care at MACH. Additionally, other federal facilities may opt to apply this training model to their operations or alter this particular methodology to fit inpatient and outpatient coding indigenous to each specific facility.

At MACH, the PAD should continue randomized audits of coding compliance throughout the facility. At the TMC, the author recommends that during August 2007, and October 2007 that continuing audits occur to ascertain whether or not the coding compliance training is currently being sustained.

Implementing a coding compliance training problem at MACH was not without its problems and pitfalls. Most problematic was the original AHLTA training contractor. The Contracting Officer's Representative (COR) was not present at MACH. They were located in the Washington DC area and direct command and control of the AHLTA training individual was difficult to exercise. Once MACH officials were able to provide customer feedback to the AHLTA trainer, they chose to resign during November 2006. Several weeks later the contractor did provide a replacement, but a disruption in the training program did occur. Without this
disruption the TMC may have attained coding compliance in excess of 83.3% during the January
2007 audit.

At MACH in the near and mid term future, Health System Specialists can perform
comparison analysis from month to month and from current month to 12 months ago to ascertain
the status of coding in their clinics. Coding Compliance trends should be observable.

For future research, surveys of DOD residency training programs should be executed to
determine if coding compliance is included in the residency schedules. If coding compliance
represents a gap in DOD residencies, its inclusion into future physician training may be of
interest to DOD health care leaders. Also, the US Army’s Physician Assistant Program at the
AMEDD Center and School may decide to lengthen its program of instruction to better train
coding compliance among its graduates.

Conclusions

The coding compliance training program evaluated by this document was
significantly successful in improving coding compliance at the MACH TMC even in the midst of
previously discussed personnel challenges. This measured improvement must be sustained with
continued coding and AHLTA usage training. The importance of coding must be directly
communicated to every provider credentialed at MACH and to every clinical support staff
member must also know the importance of proper documentation in the EMR.


Moncrief Army Community Hospital Fiscal 2007 business plan.


FY06 Prospective Payment Earnings for MACH

RWP, $5,087,261

RVU, $22,500,985

Notes: 1. Source of RWP and RVU data is M2

2. RWP includes Mental Health which is normally by bed days

Figure 1. Outpatient verses Inpatient Care at Moncrief Army Community Hospital.
Correctly Coded Medical Encounters at the TMC during the three audits

![Bar chart showing correctly coded encounters in August 2006, October 2006, and January 2007.]

- August 2006: 0.28
- October 2006: 0.60
- January 2007: 0.83

Figure 2. Graphical Depiction of August 2006, October 2006 and January 2007 Audits regarding correct coding in the TMC
Appendix A (Listing of Acronyms)

Ambulatory Payment Classification (APC)
American Medical Association (AMA)
Armed Forces Health Longitudinal Technology Application (AHLTA)
Composite Health Care System (CHCS)
Composite Health Care System II (CHCS II forerunner to AHLTA)
Department of Defense (DOD)
Diagnostic Resource Group (DRG)
Electronic Medical Record (EMR)
Evaluation and Management Codes (E & M)
Fiscal Year (FY)
General Schedule Employees (GS)
Graduate Management Project (GMP)
Health System Specialists (HSS)
Initial Entry Training or Basic Training (IET)
International Classification of Disease, 9th edition, Clinical Modification (ICD-9 CM)
Managed Care Organization(s) (MCO)
Medical Treatment Facility (MTF)
Military Health Care System (MHS)
Nurse Practitioner (NP)
Patient Administration Department (PAD)
Physician Assistant (PA)
Prospective Payment System (PPS)
Relative Weighted Product (RWP)
Resource Value Unite (RVU)
Resource Based Relative Value (RBRV)
The Centers for Medicare and Medicaid Services (CMS)
US Army Medical Command (MEDCOM)
United States Public Health Service (USPHS)
Veterans Affairs (VA)