

AN EXAMINATION OF THE EFFICACY OF REIMBURSEMENT PROTOCOL IN
PRIMARY CARE PRACTICES IN THE UNITED STATES

by

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INTRODUCTION

American healthcare today is too expensive. Among developed nations, Americans pay far more for much less (Young, 2012). Healthcare reform is at the top of the national agenda. Rising costs, restricted access, and decreasing satisfaction levels with care weigh heavily on the minds of American citizens, employers, physicians, and policymakers.

Extensive literature and research supports the importance of primary care and a litany of solutions for the problem. In this paper, I will attempt to shed light on an apparent black hole in primary care research: what actually takes place behind the closed door of a consultation room in a primary care physician's office. I set out to determine how physicians spend their time and bill for in their practice. Under the current system, physicians use Current Procedural Terminology (CPT) codes to bill for their services. Remuneration numbers show a gross disparity in income levels between primary care and specialist physicians. There is also an alarmingly low number of medical students matching into primary care residencies. The goal of my research was to discover whether the reimbursement system is the source of the problem; how well these CPT codes align with the actual work of primary care physicians. In other words, are these doctors being compensated for what they are actually doing? I hypothesize that family doctors are performing more activities than they are being reimbursed for during routine consultations.

I will first distinguish between primary care and specialty care, establish the role and value of primary care, and explain the current climate for primary care. After

explaining these matters, I will explain my observation experience at JPS Hospital in Fort Worth in the summer and fall of 2012, where I collected primary data for this project. After analyzing the results, study implications and areas for future research are discussed.

The purpose of this project was to answer this question: Under the existing reimbursement system, are family physicians being accurately remunerated for the services they provide to their patients? This question is relevant to demonstrate the necessity for healthcare reform,

LITERATURE REVIEW

Primary Care

Primary care, as defined by the Institute of Medicine in a 1978 report (Starfield, Shi, Macinko, 2005), is a “provision of integrated, accessible health care services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients, and practicing in the context of family and community.” The four primary functions of primary care (Starfield, Shi, Macinko, 2005) are:

- First contact access for each new need
- Long-term person—not disease—focused care
- Comprehensive care for most health needs
- Coordinated care when it must be sought elsewhere

Primary care physicians include family doctors, general internists, geriatricians, pediatricians, nurse practitioners, and physician assistants (Bodenheimer and Pham, 2010).

The other side of the coin in healthcare is specialty care. Specialty care encompasses all “ologist” physicians, such as cardiologists, neurologists, endocrinologists, as well as surgery, including general. Primary care and specialist physicians both go to four years of medical school; the difference comes from the amount

of training after school. Primary care physicians typically go through three years of training, while specialists will undergo two to three years of general training and another two to three years of specific training for their chosen area of focus (Young, 2012). Specialty care has taken a more prominent, attractive role in the American healthcare system. The current reimbursement system incentivizes physicians to perform more procedures, which is one reason why specialists' salaries are, on average, three times higher than those of primary care physicians (Leigh, J., Tancredi, D., Jerant, A., & Kravitz, R., 2010).

Value of Primary Care

Primary care is valuable to society for a number of reasons. Primary care is consistently associated with improved health outcomes and lower costs. In the US, states with higher concentrations of primary care physicians have better health outcomes, including lower rates of all causes of mortality, heart disease, cancer, stroke, infant mortality, low birth weight, and poor self-reported health (Shi, 1994). The same study also linked a higher supply of primary care physicians to lower smoking rates, less obesity, and even higher seat-belt use.

A commonly held belief is that specialists only must manage chronic diseases, such as diabetes. However, primary care physicians do at least as well as specialists in caring for specific common diseases. Moreover, when measures of care are made more generic, such as overall health of patient as opposed to disease-specific measures or adherence to guidelines, primary care physicians outperform specialists in disease management (Starfield, Shi, Macinko, 2005).

Empirical evidence supports primary care when comparing the health of those with and without a primary care physician. Results from a US national survey revealed that those who identify a primary care physician as their regular source of care had lower subsequent five-year mortality rates, after controlling for differences in health status, demographics, health insurance status, health perceptions, reported diagnoses, and smoking status (Franks & Fiscella, 1998). This is a brief synthesis of the current research supporting primary care. With this limited amount of information, however, primary care adds extraordinary value to our healthcare system.

The Cost of Healthcare

The US spends more on healthcare as a portion of its GDP than any other nation in the world. 19% of our GDP, which translates into \$1.182 trillion, goes to healthcare costs (Figure 1). To put that figure in perspective, our education system accounts for 13% and national defense accounts for 14% (www.usgovernmentpending.com). Among developed nations, the average percentage in 2012, according to a report released by the Organization for Economic Co-operation and Development (OECD)—an international economic coalition of 34 developed nations—was 9.5%. A 2012 PBS article, *Health Costs: How the US Compares with Other Countries*, points out that we spend an average of \$8,233 per person per year on healthcare—the highest of any member nation and two and a half times the OECD average of \$3,258 (Kane, 2012).

These alarmingly high figures beg the question: are we getting what we pay for? OECD data indicates the answer is a resounding *no*. Per capita, there are fewer physicians and hospital beds than the majority of other OECD nations. Perhaps most importantly, US life expectancy, at 78.7 years in 2010, is more than one year lower than the OECD

average of 79.8 years. The life expectancy at birth for all persons has increased by almost nine years since 1960. However, this is more than two years below the OECD average gain of over eleven years.

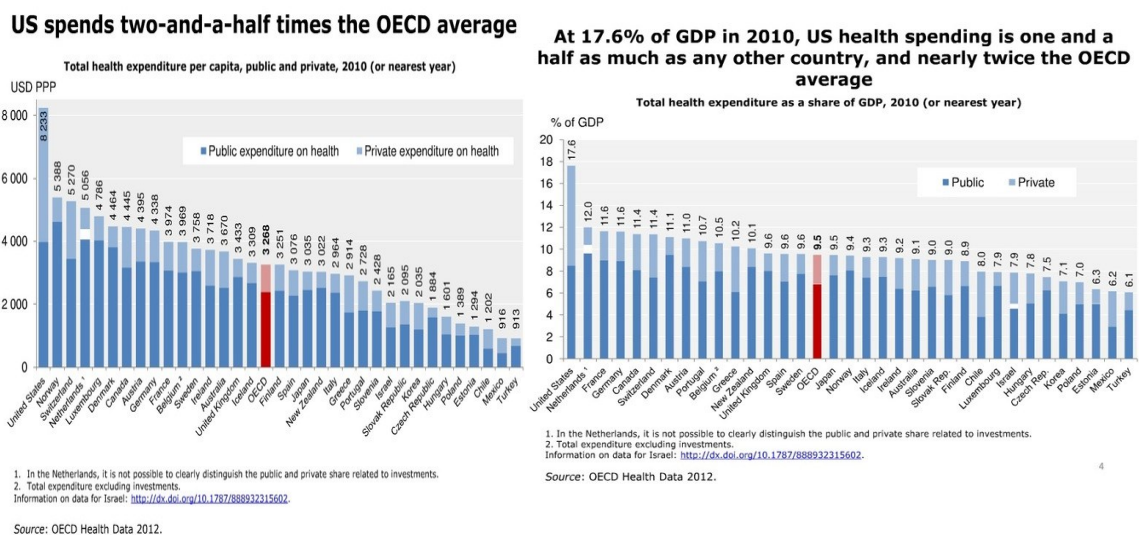


Figure 1. OECD Data on Member-Nation Healthcare Costs

This OECD data supports this assertion: healthcare in the US is too expensive. Now, how does primary care fit into the picture? In addition to better health outcomes, the supply of primary care physicians is also linked to lower *total* healthcare costs. Areas with a higher supply of primary care physicians had much lower total health care costs than other areas. Why? Because preventive care and lower hospitalization rates are associated with an increased number of primary care physicians (Starfield, Shi, and Macinko, 2005). Finally, care for illnesses common in the general population, such as pneumonia, was more expensive if provided by specialists than generalists and realized no better outcomes (Starfield, Shi, and Macinko, 2005).

Current Situation

Primary care physicians are overworked, underpaid, and under supported by the healthcare system. Dr. Thomas Bodenheimer, MD, a professor in the UCSF Family &

Community Medicine department, offered this cautionary note concerning the industry: “Patients are increasingly dissatisfied with their care and with the difficulty of gaining timely access to a primary care physician; many primary care physicians, in turn, are unhappy with their jobs...quality of care is uneven, reimbursement is inadequate, and fewer and fewer U.S. medical students are choosing to enter the field” (Bodenheimer, 2006). Hence, those are the three main problems facing primary care today: patient and physician dissatisfaction, lack of popularity among medical students, and a broken reimbursement system.

Currently, reimbursement is based on *quantity* of services delivered instead of *quality* of outcomes. This forces family doctors and other primary care physicians to pack their schedules and rush visits. The four primary functions constitute an attitude of caring for the patients overall wellbeing and not just diseases. However, survey results from two studies and fourteen states suggest that whole-person care from primary care physicians is considered subpar by patients (Safran, 2003) because physicians simply do not have the time they would like to spend with their patients. It would take 10.6 hours per working day for primary care physicians to deliver the recommended care for patients with chronic conditions, plus an additional 7.4 hours per day to provide evidence-based preventive care to a panel of 2500 patients (Østbye, T. et al., 2005). Current reimbursement procedures simply do not allow these doctors to personalize visits to the level desired by patients.

A panel of 2500 patients per physician might seem like an overload, and it is. Even though 56% of visits to physicians’ offices are for primary care, only 37% (287,000) of physicians practice primary medicine (Bodenheimer, T. & Pham, H., 2010).

In 2005, 65 million Americans lived in what are officially deemed as primary care shortage areas (Bodenheimer, T. & Pham, H., 2010). A 2008 Medicare Payment Advisory Commission beneficiary survey found that 28% of beneficiaries lacking a primary care physician experienced difficulty in finding such a physician, representing a 17% increase from 2006. There are not enough primary care doctors and the ones in practice are not adequately geographically distributed.

This is a serious issue, and it is only getting worse. A 2007 survey of fourth-year medical students found that only 7% of respondents planned on entering careers in adult primary care (Bodenheimer, T. & Pham, H., 2010). As Figure 2 shows, the number of medical students matching into primary care internal medicine positions declined 54% between 1999 and 2006 (Schwartz M, Durning S, Linzer M, Hauer K, 2007). “There’s a crisis in primary care, probably much worse than most people realize,” said Dr. Steven Berk, Dean of the School of Medicine at Texas Tech University, in a NY Times interview.



Figure 2. US graduates primary care residency match numbers.

There will be a shortage of 45,000 primary care doctors in the US by 2020 if current matching rates persist, according to the Association of American Medical Colleges, and that deficiency should increase to 65,000 by 2025 (Novak, 2012). The number of primary care doctors will increase by 2-7% from 2005 to 2025, while the workload for these doctors will increase by 29% (Colwill, J., Cultice, J., & Kruse, R., 2008). This problem is amplified by the passage of the Affordable Care Act, which “will put a stress on the system immediately,” according to Dr. Russell Phillips, director of the Center for Primary Care at Harvard Medical School (Novak, 2012). There must be a paradigm shift in American healthcare, accompanied by a policy change.

So why are medical students avoiding primary care as a career option? Culture is a large part of the issue. Dr. Marjorie A. Bowman, Chairman of the Department of Family Medicine & Community Health at the University of Pennsylvania, says, “if you’re looking for prestige, family medicine is not where you go” (Novak, 2012). Dr. Morris-Singer is a member of Primary Care Progress, an advocacy group for primary care practitioners, and he explains that this belief is pushed during students’ education: “A lot of medical schools disparage primary care,” Dr. Morris-Singer says. “They say primary care isn’t a good use of medical school resources, and this is communicated to students in a direct way” (Novak, 2012). Specialist physicians are expected to stay abreast of every new breakthrough, discovery, and nugget of information pertaining to their chosen body part or system. Family doctors, meanwhile, must do the same for all new medical knowledge. Nonetheless, primary care is still seen as inferior to specialty care in the ivory tower of medical school. A root cause for this problem is expected earnings.

The largest barrier for most medical students is future remuneration. Primary care physicians earn 36-48% less than specialist physicians (Leigh, J., Tancredi, D., Jerant, A., & Kravitz, R., 2010). Perceived remuneration is proven to be a significant factor for students when choosing a career (DeZee, K., et al. 2011). This is highly understandable, considering that the average 2012 medical school graduate walked across the stage with \$166,750 of debt to their name (AAMC, 2012). With such an outstanding amount of debt to their name, it is understandable that medical students choose higher-paying medical specialties.

THE PROBLEM

Primary care physicians lower costs, improve overall health in a community, and are underpaid to do so. With such a shortage of primary care doctors in the future, I sought to understand why these physicians are being paid so much less than their specialist peers. The reimbursement process is a primary source of the problem (see Appendix A for detailed description of reimbursement system).

One study, conducted by the Wisconsin Research Network (WReN), set out to explore the number of problems managed by family physicians during patient visits. Their hypothesis was that family physicians manage multiple problems during office visits and, furthermore, that considerable differences exist between what actually occurs during the consultation and what is recorded on the chart and even what is listed on the bill. Instead of physically observing physicians, as Dr. Young and I did, these researchers enlisted 29 family doctors to record the number of problems managed during patient visits over a period of time. A problem, as defined for the purposes of this study, was any issue about which the clinician gathered information and made a decision during the

encounter. They cross-referenced these problem logs with chart information and copies of the bill to ascertain their data. Their findings were very telling and consistent with my own hypothesis. Participating doctors reported, on average, 3.05 problems per encounter in the log, document 2.82 in the chart, and billed for 1.97 (Beasley, J. et al., 2004). One very important observation that comes from this study is that primary care is a comprehensive approach to healthcare, which does not fit well into the current system that reimburses on a more narrow-minded basis.

In a similar approach to the WReN study, I set out to discover:

1. How well do existing CPT codes capture the full range of activities performed in routine patient consultations?
2. Do primary care physicians spend more time per each patient than the CPT codes reimburse?
3. Do primary care physicians “undercode,” or report a fewer number of problems per visit than the number recorded by a 3rd party observer?

I expect to see a higher number of problems managed by physicians than reimbursed by the codes. I also expect to find that family medicine doctors spend more time with each patient than CPT codes pay for. One last expectation is that this observed number will be higher than the physician-reported number. These three issues plague primary care and an empirical study on the matter will guide policymakers towards more effective reimbursement policies and procedures.

METHOD

Procedure

This project was inspired by an article in the Fort Worth Star Telegram published in January, 2012. Dr. Richard Young was selected as one of 73 physicians around the country to participate in a federal innovation center formed by the 2010 Affordable Care Act. The center was created as a think tank to rapidly test care and payment models, reduce costs, and encourage widespread use of better healthcare practices (Branch, 2012).

After reading this article, I contacted Dr. Young to inquire about participating in his research. He agreed to let me participate in his research after obtaining permission from the JPS Institutional Review Board. We set out to capture the activity of family medicine doctors in the Dallas-Fort Worth Metroplex.

From June to October, 2012, I shadowed doctors in the family medicine clinic at JPS. The purpose of my research was to study the physician, not the patient. Still, we drafted a letter that the nurse gave each patient to read over that explained the purpose of my research and the reason for my being in the room (Appendix B). The letter also allowed patients to opt out of having me in the room. No patient in my observations did so, although I did leave the room several times for a few minutes in several visits per request of the physician or patient.

Sample

Private practice physicians in the Dallas-Fort Worth Metroplex and family medicine doctors at a public hospital, JPS Hospital, participated in this study (Table 1). The private practice physicians are Dr. Young's peers in the medical community and allowed him to observe their work in their clinics. The participants at JPS were either

residents or attending family medicine physicians. These doctors were selected solely based upon who was working and willing to allow me to shadow them during a typical day of visits. The sample pool represents the practicing primary care physician population in North Texas well because there is a diverse amount of experience, gender, and roughly even split between private practice and hospital practitioners. I make no distinction between private practice and hospital doctors, because my focus is on the industry at large rather than potential subtle differences between these two subcategories.

Table 1. *Participating Family Medicine Physician Information*

Physician	Years in Practice	Gender
Dr. Swegler	26	Female
Dr. Coleridge	31	Male
Dr. Matthews	3	Female
Dr. Salazar	10	Male
Dr. Paik	8	Female
Dr. Watson	3 rd Year Resident	Female
Dr. Sheu	2 nd Year Resident	Female
Dr. Collins	2 nd Year Resident	Female
Dr. Ashraf	2 nd Year Resident	Male
Dr. Richardson	Geriatrics Fellow (post-residency)	Male

Measures

I carried a clipboard and pen and took notes on a template designed by Dr. Young (Appendix C). For each patient, I recorded the amount of time spent on different parts of the visit. I broke each consultation up into preparation, history, exam, discussion, time taken for ordering tests, and documentation and recorded in one-minute increments.

In addition to time, I recorded the number of discreet problems managed during each visit. In this study, a problem is defined as a unique incident that required the physician to make a medical decision and consumed at least one minute of his or her time in the visit. After leaving the patient's room, I asked the physician for their opinion on

how many problems they believed they managed and recorded this number, as well. Doctors typically do the necessary documentation for each patient consultation during and immediately after the visit. In some cases, however, doctors were too busy to document their notes after each patient and were in habit of waiting till the end of the day to complete their documentation. In these instances, I do not have data on how much time was spent on documentation and, thus, the total time for the consultation does not tell the full story of the appointment. These cases were left out of the data seen in the results section.

I also recorded the CPT code the doctor intended to use for billing after each visit. Not all of my observed visits have a designated CPT code because some doctors hold off on making that decision till they have time to complete their documentation or consider the issue further.

I noted additional observations, as well, such as the necessity of a translator, how many tests, screens, procedures, or referrals were ordered. These factors contribute to the complexity and duration of the visit and provide more insight into how family physicians are spending their time.

RESULTS

Data was collected from observation of ten family medicine doctors during 48 unique patient visits. The main findings of this study for all encounters are presented in Figure 3. The observations are not distinguished by observer, however, because I was trained by Dr. Young on what to watch for before beginning research. In addition, at the end of each day of observations, Dr. Young and I discussed my findings to make sure they were reasonable. There is also no distinction reflected in the data between private

practice physicians and hospital employees. The purpose of this study is to examine the primary care industry as a whole and not sector-by-sector. The most important metrics in this study were number of problems managed and time spent on each patient. This study also examined the difference between the number of problems reported by the physician and the observer. Any discrepancy in these numbers will suggest a natural bias among physicians to undercode for their services, as seen in the WReN study.

The data is only separated by code used by the doctor, 99213 and 99214. Other codes showed up in the data, but I limited my results to these two since they are the dominant codes used in family medicine. Each of these codes reimburses for a maximum of two problems, with the difference in pay associated with a rise in complexity of issues from 99213 to 99214. Figure 3A shows that when the 99213 code was used, physicians reported managing an average of 2.65 problems, *32.5% above* the reimbursed level. For a 99214 code, physicians reported themselves as managing an average of 4.86 problems, *143.2% more* than the reimbursed level.

The discrepancy in the number of problems reported by the physician and by the observer was measured to search for a tendency for the physician to consistently underestimate the number of problems managed. Participating physicians reported managing *13% fewer* problems in visits involving 99213 and 99214 codes, proving a tendency to undercode (Figure 3B).

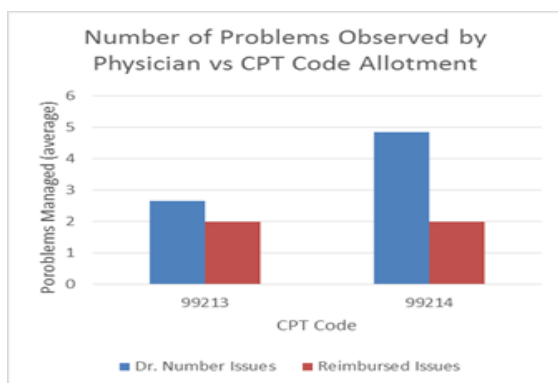


Figure 3A.

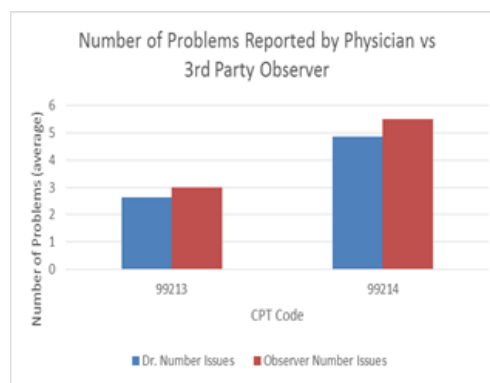


Figure 3B.

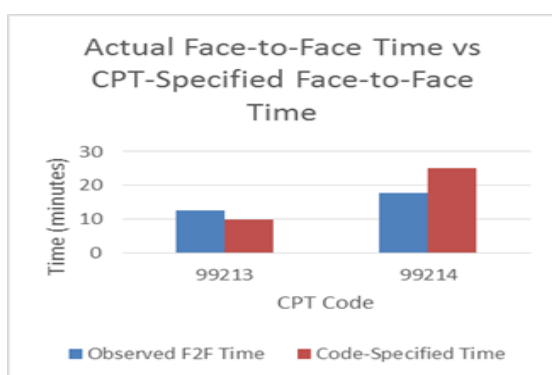


Figure 3C.

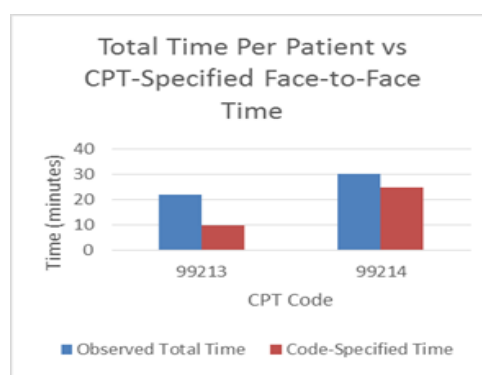


Figure 3D.

Figure 3. Results of study.

The CPT manual recommends 10 minutes of face-to-face (F2F) time per patient for a 99213 code and 25 minutes for a 99214. Results from this study showed an average of 12.45 minutes for 99213 and 17.82 minutes for 99214 (Figure 3C). The 99213 figure is 24.5% higher than the CPT-suggested amount while the 99214 average is actually 28.73% lower than the CPT-specified amount; this was an unexpected finding and one that will be discussed in more detail in the implications section. This study also captured total time per patient (Figure 3D). This metric captures everything left out when only face-to-face time is considered, including preparation, ordering of tests, and documentation. These are all necessary parts of the patient management process and their

inclusion in the reimbursement standards would improve measurement of physician activity. The average total time spent on each patient when a 99213 code was used was 21.95 minutes, *119.50% more* than the allotted ten minutes per patient. For a 99213, average total time was 30.27 minutes, *21.1% more* than the CPT code suggests.

DISCUSSION

These results support my previous expectations that primary care physicians are spending more time, managing more problems for each patient than the reimbursable amount, and undercoding for their services. Face-to-face time for 99214 is the lone exception to the expectations I had prior to this study. Doctors are actually spending less time with their patients than this particular code recommends. However, when the CPT-code suggested face-to-face time of 25 minutes is compared to total time-per-patient, doctors spend 21.5% more time on each patient, the equivalence of about five minutes. This suggests that the CPT code 99214 makes too large of an increase in expected face-to-face time from the 99213 code, an inaccuracy not predicted but detected, nonetheless. One doctor that participated in the study used 99213 for all of her visits in a morning, regardless of problems managed or time spent on each patient. When I asked her about this tendency, she explained that this was the safest way to ensure reimbursement. She may not be demonstrating best practices or putting forth enough effort to gain full reimbursement. However, this habit is a distinct side effect of this error in the 99214 code description.

The obvious next step is to investigate the root of this problem and discuss remedies. First, I will examine a few different prototypical patient visits in detail. This will provide more insight on what activities actually consume physicians time. Another

relevant topic of discussion is the changes in physicians approach to treatment that would be brought about by an improvement in the reimbursement system. I will conclude by explaining a few proposed solutions, including a comprehensive plan created by Dr. Young, and highlighting the successful implementation of reform in a small town in Colorado.

Sample Visits

The Good

Very rarely, the current system accurately captures the services rendered in a visit, and it is important to highlight such an event. In one visit, a patient reported for a regular check-up. The physician spent roughly one minute reviewing the patient's information on the Electronic Medical Record (EMR) chart before stepping in the room to see the patient. After a few moments of chit chat, the doctor discussed the patient's medications regimen and inquired on how well it was working. After a five minute conversation, the doctor wished the patient a good afternoon and left the room. Documentation only took two minutes, so the whole visit was kept to ten minutes and one problem. The doctor correctly used the 99213 code to receive the proper remuneration amount for the visit.

The Bad

More often than not, as the results section reveals, the CPT-code system does not provide sufficient coverage of the physician's services. In one visit, a patient presented with a chief complaint of numb toes and arthritis in her back. By presenting two problems from the beginning, any more problems managed would be cared for without remuneration. The patient proceeded to pull out a list of problems, forcing a decision

upon the physician: ask the patient to schedule another appointment in order to manage these other issues or take her time to fully care for the patient. The physician elected to allow the patient to list her problems, a total of seven, including prescription issues and depression. Face-to-face time only took 20 minutes, which is below the amount suggested for the 99214 code the physician used for this particular visit. However, the doctor prepared for the visit for four minutes and spent another 15 documenting the visit in the EMR system, for a total of 39 minutes spent on this one patient. Furthermore, the doctor considered adding on a modifier, which is an extra code that describes a service provided and can add more revenue to the bill. However, the doctor told me it would take too much time to sufficiently document this modifier to prove its merit and, consequentially, chose not to bother with the modifier. In this one visit, the physician gave away 19 minutes of her time and managed 5 problems at no cost to the patient or the system because she chose to put the patient's needs in front of her own, as doctors are trained to do. When total time per patient is ignored, the system ignores a large, necessary portion of time that each patient requires.

The Ugly

The system is proven to work in a few cases and not work in the majority. Sometimes, the CPT codes available do not even remotely capture the complexity, time, or care provided in a visit. One such event occurred while observing at JPS Hospital. The doctor spent six minutes reviewing the charts of a patient before going into the consultation room because of the patient's complex history. The patient was in the office to discuss prescription refills. However, he eventually brought up a total of eight problems in the visit, a number which both the doctor and I arrived at independently of

one another. The discussion took 35 minutes and a physical exam took another 5. The physician exited the room during the visit to seek counsel from another doctor, which took 5 minutes. Documentation for the visit took another 15 minutes, totaling 66 minutes on one patient. The physician used a 99214 code for the bill, which covers 25 minutes and two problems. This one patient consumed an extra 41 minutes of the physician's time and had 6 extra problems cared for, all for no additional fee.

One might wonder why the doctor would not use a higher-level code. The answer to that question is that there is not one available. The next step up for CPT codes is 99215. The CPT manual, however, specifies problems such as severe respiratory stress, psychiatric illness with potential threat to self or others, and acute myocardial infarction (heart attack) as problems that merit a 99215 code. No family doctor is equipped to manage these problems in a clinic and any patient with these issues would be immediately referred to a hospital. This code is made irrelevant and, predictably, I never observed it used once during my clinical observations.

Solutions

Much literature is available on remedies to the US healthcare system that pinpoints primary care as the solution. A team of researchers from the Department of Family and Community Medicine at University of San Francisco, including Dr. Thomas Bodenheimer, wrote an article that outlines the most pertinent changes that must be made to correct the system. Some necessary policy changes are listed below: (Berry-Millet, R., Bandara, S., & Bodenheimer, T., 2009)

- Increased reimbursement for primary care
- Standardize fees paid by private insurers, Medicare, & Medicaid

- Provide financial incentives for PCPs (primary care physicians) to deliver after-hours care
- Invest in a national program aimed at helping primary care practices implement same-day scheduling, team care, and other access improvements
- Provide reimbursement for email, telephone encounters and team care, including fees for allied health professionals who assist PCPs in managing chronic disease and preventive care

This team also explains the necessary changes primary care physicians must make. PCPs must take initiative to increase patient access, face-to-face and remotely. This involves reorganizing work hours to be in the office more and allocating time in front of the phone and computer while not in the office to field patients concerns. One advantage of these practices is the extension of time between visits for stable, healthy patients, thus freeing up more time in the day for doctors to spend on higher-need patients.

Dr. Young has created a comprehensive reimbursement plan that essentially separates primary care from specialist care. In his book, *American Health\$care*, he describes several changes that would go a long way towards improving health and dramatically driving down costs in America. Under his comprehensive plan, primary care doctors must commit to being a one-stop healthcare shop. This means fewer referrals and providing more hours of care for patients. The way to fix the reimbursement system is to allow primary care doctors to bill using an inventory-style list. A bill that allows doctors to add problems as they arise frees them up to handle all of a patients problems in a single visit. This eliminates the need for repeated appointments and drives down costs while increasing the quality of care the doctor is able to provide.

Another strong source of cost-savings can be found in a human resources practice known as gainsharing. Gainsharing is a group incentive program that measures improvements in productivity and effectiveness and distributes a portion of each gain to employees (Noe, R., Hollenbeck, J., Gerhart, B. & Wright, P., 2011). Primary care doctors contribute to the exorbitant cost of healthcare in the US through unnecessary referrals and tests. The current system does not incentivize them to do otherwise because they see no revenue from more time spent on a physical exam or a thorough discussion that replaces an expensive test. If primary care physicians received a portion of the revenue they saved the healthcare system, this incentive would be created and PCPs would help drive down overall healthcare costs.

What Would Change?

Arguments for change are incomplete without discussion on the effect on reform on medical practice. In other words, what would doctors do differently if the pay structure was organized in a more efficient fashion? There is a common complaint among patients that family doctor orders too many tests or referrals to specialists. In my observations, I watched for this habit and found it in several incidents; doctors did make referrals simply because they did not have time to perform a specific procedure themselves. One doctor referred a patient to a physical therapist to perform an Epley maneuver, a simple, ten-minute procedure used to treat vertigo. The doctor reasoned that she did not have time to perform the procedure with a full load of patients for the day nor would she be reimbursed.

When doctors were asked what they would do differently if they were paid to spend more time with patients, the most common response was surprisingly simple: more patient education. One doctor explained that most of her colleagues have all but stopped educating their patients because they do not have time. Doctors told me they would spend more time educating patients on diet and exercise habits, smoking cessation, and treatment regimen compliance. Physicians also told me they would perform more physical exams instead of ordering CT scans and EKG's for their patients. These are expensive tests and the doctors told me they could often obtain the same information simply by a more thorough exam of the patient. However, they only get paid for a certain amount of time with each patient, which incentivizes physicians to order tests and get the next patient in the room.

Case Study: Grand Junction, Colorado

In August, 2009, President Obama visited Grand Junction, Colorado, located in Mesa County, to praise the high-quality, low-cost healthcare system as a model for the rest of the nation. Grand Junction has an average per capita Medicare expenditure of \$6,599—*24% lower* than the national average (Bodenheimer, T., West, D., 2010). This town of 50,000 also scored above the national average on quality metrics including preventive care, diabetes, and asthma, among others. Grand Junction uses 19% less healthcare services than the national average, making it the ninth-lowest service using region out of 404 in the US. This trend of low healthcare utilization is seen in Medicaid enrollees and privately-insured individuals, as well.

Dr. Thomas Bodenheimer and a team of researchers studied this town's unique healthcare system and found seven factors driving costs down and quality up:

1. Leadership by the primary care community
2. Payment system involving risk sharing by physicians
3. Regionalization of services into an orderly system of primary, secondary, and tertiary care
4. Limits on the supply of expensive resources, including specialists, beds, and equipment
5. Payment of primary care physicians for hospital visits
6. Robust end-of-life care.

The assumption of leadership by primary care physicians, according to Dr. Bodenheimer, has been the most pivotal event for Grand Junction's healthcare system. They control the dominant physicians groups in town and have implemented progressive policies in order to maintain this influential role. A fee-withholding system incentivizes physicians to keep costs low, publication of activity keeps doctors accountable, and standard fees for Medicaid and Medicare enrollees and privately insured individuals makes care more accessible. The presence of only one tertiary hospital in the area that provides interventional cardiac care, neurosurgery, and other subspecialized services keeps the number of expensive procedures to a minimum, while reducing the number of lengthy and expensive hospital stays at the same time. Unlike other communities, PCPs are paid to care for patients while they are in the hospital, for the purpose of improved care continuity and coordination. Low-cost end-of-life care is a priority in Grand Junction as well. Residents spend *40% fewer* days in the hospital in their last six months of life, *50% fewer* people die in hospitals, and patients spend *74% more* time in hospice than the national average. Grand Junction can teach the rest of the nation a great deal about

healthcare; this town is a perfect example of the potential improvements when primary care assumes the prominent role and patients are treated instead of diseases and systems.

Limitations

This study offers insight on family medicine practice. The sample is limited to the Dallas-Fort Worth region, which places a geographic restraint on the widespread application of results. The data set represented in the results comes from 48 unique patient visits. The number of consultations observed was much higher. However, due to time restraints, several participant physicians did not document each visit immediately after leaving the patient's room and, instead, completed this task for all patients at the end of each work day. Without access to billing data, I was unable to study those visits, thus shrinking the collective sample size. This lack of time is important to point out, as yet another obstacle in family doctor's practice. Unnecessarily complex billing requirements consume doctors' valuable time that could otherwise be spend with patients.

Future Research

This study answered the questions set at the onset of the study, but also raised many more. While observing physicians, I was simply recording the number of issues and did not take account of what specific problems were being managed. A second study that takes this factor into account would contribute tremendously to the healthcare community's understanding of primary care. Another interesting study would be a more financially-driven study of this issue. In this study, the only billing information collected was which CPT code was used. Since fees are different across the country, it is impossible to generalize this information. A more geographically-diverse observational

study that followed up on patient visits with the billing data would be a terrific follow-up to this project.

This study parallels job analytic approaches undertaken by human resources departments in organizations and corporations. There are several methods of job analysis that focus on tasks performed, which describes what job involves in terms of work activities and outcomes (Jackson, S., Schuler, R. & Werner, S., 2009). A customized job analysis that involved the use of questionnaires, interviews, and behavior observations might better inform the stakeholders on the details of what primary care physicians actually do.

CONCLUSION

The changes made in Grand Junction are certainly unique and unprecedented. Still, they are entirely replicable as well. The first and most important step, albeit a serious change, is a culture change. Medical schools must shift their paradigm and place more emphasis on primary care as a key component in the health care delivery vehicle. Patients must place more confidence in their primary care physician to be their first stop for care and rely less on expensive tests and specialist visits. Primary care physicians have to alter their modus operandi by extending office hours and making time for patients' complaints via phone or email. This change must be accompanied by an overhaul of the reimbursement system. As the results of this study show, primary care physicians are, simply put, underpaid and underappreciated. Patients want more time with their doctors and doctors want to provide maximum care in return. However, the current system incentivizes doctors to rush through visits, ask patients to reschedule for multiple problems, and order unnecessary procedures and tests to drive revenue and save time. An

alteration of the system that encourages doctors monetarily to care for the whole patient and not just a single problem will go a long way towards reducing the exorbitant US healthcare costs. A cardinal rule in economics is that people respond to incentives. If the success seen in Grand Junction can be replicated across the country, we will see this rule play out. More US medical students will select primary care, patient access to care will increase, healthcare costs will go down, and overall health will increase.

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APPENDIX A

Explanation of CMS Reimbursement Protocol, Specific to Family Medicine

The Center for Medicare and Medicaid Services (CMS) is the federal organization responsible for setting reimbursement guidelines. In 1995, CMS published the Documentation Guidelines for Evaluation & Management (E/M) Services and subsequently released the most up-to-date version in 1997. The Medical Learning Network Evaluation & Management Services Guide synthesizes the information contained in these two versions and includes them as well. In 89 pages, this manual lists the steps a doctor must take in order to justify his or her billing level.

Physicians and qualified non-physician practitioners (NPP's)—nurse practitioners, clinical nurse specialists, midwives, and physician assistants—use Current Procedural Terminology (CPT) codes to bill for their services. CPT codes bill for Evaluation and Management (E/M) services—visits and consultations furnished to patients in outpatient and office settings. Physicians must go through a series of decision-making steps during a consultation in order to select the proper code. The first step is whether the patient is new or established. The setting of service is considered next, which for CPT codes will always be outpatient or office facilities, and then the level of E/M services performed. This step is threefold: history, evaluation, and medical decision making.

The history step is broken down further into four parts: the chief complaint, the history of present illness (HPI), the review of symptoms (ROS), and the past, family, and/or social history (PFSH). These parts are broken down by level of complication, ranging from problem-focused, expanded problem-focused, detailed, and comprehensive. Problem-focused is limited to affected body area or organ, whereas comprehensive is a general multi-organ system or complete single organ system exam. The evaluation step

uses the same range to document complexity. Medical decision making refers to the complexity of establishing a diagnosis and/or selecting a management option. The level of complexity is determined by several factors, including the number of possible diagnoses and management options, amount of medical records, diagnostic tests, and/or other information that must be obtained, reviewed, and analyzed, and the risk of significant complications, morbidity, and comorbidities associated with patients' chief complaint, the diagnostic procedure, and management options. This risk is categorized in a range of minimal, low, moderate, or high for presenting problems, diagnostic procedures, and management options. An example of a low risk problem is a bug bite and a high risk management option would be emergency surgery.

The CPT Code Manual, published by the American Medical Association, provides definitions, explanations, and examples for all CPT codes. Dr. Young explained to me that the most common CPT codes used by family doctors are 99213, 99214, and 99215. 99213 covers management of two or minor problems, one stable chronic illness, or one acute, uncomplicated issue (i.e. sprained ankle). AMA specifies an expectation of 10 minutes of face-to-face time with the patient for a 99213 visit. A few given examples of a 99213 visit are: office visit for 3-year old with earache and dyshidrosis, 70-year old established diabetic patient with hypertension with recent change in insulin requirement, or a 60-year old established patient with chronic hypertension on multiple drug regimen coming in for a blood pressure check.

99214 covers management of one or more chronic illnesses with mild exacerbation, two or more stable chronic conditions, one new, undiagnosed problem, acute illnesses with systemic symptoms, and one acute injury, such as a concussion. The

face-to-face time expectation for 99214 is 25 minutes. Some examples of a typical 99214 visit, according to AMA's manual are: office visit for a 32-year old female with lower right quadrant pain, a 28-year old established patient with new onset of lower back pain, or a 50-year old female established patient with diabetes being controlled by diet presenting with complaints of weight loss and frequent urination.

99215 covers management of one or more illnesses with severe exacerbation, acute and chronic illnesses that pose a threat to life and/or bodily function (i.e. severe respiratory stress, psychiatric status that requires immediate attention and treatment), and abrupt changes in neurological status, such as seizures and sensory loss. This code involves coordination of care with other physicians, family members, and health agencies and expects 40 minutes of face-to-face time with the patient. One example of a 99215 case given in the CPT manual is a 70-year old female established patient with diabetes and hypertension presenting with a 2-month history of increasing confusion, agitation, and short-term memory loss.

APPENDIX B

CMS Innovation Project – Explanation to Patients

Dear FHC Patient,

My name is Will Hopper and I am working with Richard Young, MD, who was recently chosen by the Center for Medicare and Medicaid Services to be in its first class of Innovation Advisors. He is the only representative from Texas.

He was chosen to develop a new approach for family physicians to document their work in the medical record, code their work for the Medicare and insurance computers, and then bill for this work. It is his sincerest desire to develop a system that will better serve the needs of patients, especially those with many issues they would like to discuss with their family physician at one clinic visit.

I am here today to observe your FHC physician, not you. Obviously, this is kind of impossible. What I mean by this statement is this: I am asking your permission to be in the room to watch your FHC physician take care of you. I will record observations such as how long it took him or his nurse to accomplish certain tasks. I will not record any information that could possibly identify you and your personal medical history.

If at any time in the visit, you would like for me to leave the room, all you have to do is tell me. I completely understand. Also, if you do not want me in to the room, my feelings will not be hurt. The last thing I want to do is make you uncomfortable because of my presence affecting your relationship and conversation with your FHC physician. If you prefer me to not be in the room, your care will not be impacted in any way.

Please let me know if you have any questions or concerns.

APPENDIX C**New Primary Care Fee Proposal – Encounter Record**

Time spent on activities

Issues Addressed

Observer

Physician

Fee under new system

Fee actually collected

Other thoughts

ABSTRACT

Purpose: Primary care is an integrated, comprehensive approach to healthcare for most patient needs. Areas with a high supply of primary care physicians (PCPs) experience greater overall health, lower healthcare costs, and lower mortality rates. This study set out to determine how well the current reimbursement system captures the activities of PCPs.

Methodology: Dr. Richard Young, MD and I observed ten Dallas-Fort Worth private practice and JPS-employed family physicians during forty-eight patient visits. The physicians and observers noted the number of problems managed per visit, the amount of time spent face-to-face and total time per patient. Data was divided by which Current Procedural Terminology (CPT) code was used for each visit, either 99213 or 99214.

Results: For all 992123 visits, physicians self-reported managing 32.5% more problems, spending 24.5% more time face-to-face, and 119.5% more total time per patient than the reimbursable amount. 99214 visits averaged 143% more problems managed and 21.1% more total time per patient; interestingly, they spent 28.73% *less* time face-to-face with patients than the CPT-suggested amount. For both codes, doctors reported an average of 13% fewer number of problems managed than Dr. Young and I observed.

Conclusions: Family medicine doctors manage more problems and spend more total time per patient than the current system reimburses. These findings reveal the shortcomings of the current reimbursement system to properly measure and remunerate the activities of family physicians.