ARE SELF-REPORTED PATIENT ENCOUNTER DATA ACCURATE? [A STUDY OF SECOND YEAR PDA AND MEDICAL CHART ENTRIES FROM PRATT REGIONAL MEDICAL CENTER.]

A Research Project by

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College of Health Professions
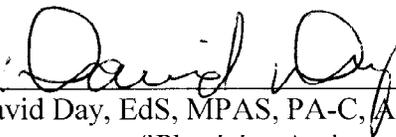
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We hereby recommend that the research project prepared under our supervision by Lucas R. Williams entitled Are self reported patient encounter data accurate? [A study of second year PDA and medical chart entries from Pratt Regional Medical Center] be accepted as partial fulfillment for the degree of Master of Physician Assistant.

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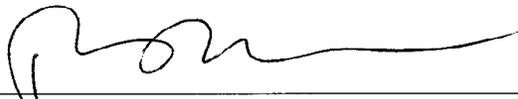
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DEDICATION

To Carlene, the love of my life and to all those who seek for the fine things of this world.

EPIGRAPH

There must be consistency in direction

ACKNOWLEGMENTS

ABSTRACT

Medical education programs are using Personal Digital Assistants (PDA's) to facilitate the recording of encounters between students and patients during clinical rotations. Wichita State University Physician Assistant Program (WSU-PA) uses PDA's to track clinical patient encounters during its clinical year. The WSU-PA clinical rotation at Pratt Regional Medical Center Emergency Department (PRMC-ED) provided an opportunity for a comparison of medical records and PDA entries made by students who spent 4 to 6 weeks at that site.

The purpose of this study was to verify the self-reported data submitted by students with the actual documentation on the medical record and identify any significant inconsistencies. WSU-PA students submitted data of all patient encounters at PRMC-ED which were subsequently compared to data obtained through review of medical records for patients seen by the student. The age and sex of the patient as well as the diagnosis of each visit were compared for consistency using HandEchart® PDA software and Microsoft Excel® spreadsheets.

Of reported diagnoses, 32.16% matched the medical records, 24.69% of patient ages matched the medical records, and 31.18% of patient gender matched the medical records. In conclusion, data revealed an inconsistency between medical charts and PDA entries of patient encounters during clinical rotations at PRMC-ED. The data that represented the age, sex, and diagnosis of patients encountered in clinical rotations by 2nd year PA students was consistent 1/3 of the time.

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LIST OF ABBREVIATIONS

Dx   Diagnosis

PA   Physician Assistant

PDA   Personal Digital Assistant

PRMC   Pratt Regional Medical Center

PRMC-ED   Pratt Regional Medical Center Emergency Department

WSU   Wichita State University

WSU-PA   Wichita State University Physician Assistant Program

CHAPTER ONE

INTRODUCTION

The second year of Physician Assistant education at Wichita State University (WSU) allots the student an opportunity to practice learned material in the clinical setting under the supervision of a mentor. As a way to track patient encounters, the WSU Physician Assistant program (WSU-PA) has used paper based tracking systems and web-based tracking systems in the past. Each has been valuable at tracking patient encounters. Since the fall of 2003, the program has implemented the use of Personal Digital Assistants (PDAs) to track patient encounters by students.

WSU-PA uses PDAs as tracking devices during second year clinical rotations. The software allows for tracking characteristics of student clinical visits such as: race, age, gender, and diagnosis of each patient that a student encounters. This data is recorded using HandEchart® software. At the end of each of 8 clinical rotations lasting four to six weeks each, the collected information is uploaded to the Microsoft Access database at the WSU-PA program. Upon collection, filters are set to eliminate any duplicate entries and assure conformity of the data.

WSU-PA faculty uses the data to assess and verify diversity of patient populations and diagnoses seen by students in the clinical year as well as to improve various aspects of the curriculum. The data has been used to identify areas for improvement in the first year curriculum for future students. Analysis of the data also enables the faculty to consider clinical site adjustments and evaluation of student performance. In addition, the data provides support for reporting requirements for accreditation and funding. It was proposed that medical charts of

patients encountered by second year WSU-PA students who participated in a clinical rotation at Pratt Regional Medical Center – Emergency Department (PRMC-ED) would be compared to the information obtained from the medical records for patients seen during that same time frame. The purpose of the comparison was to assess the consistency between the data reported and the data from the medial records. This study was initiated to verify the self-reported data submitted by students with the actual documentation in the medical record and to identify any significant inconsistencies.

CHAPTER TWO

LITERATURE REVIEW

Much of medical education has shifted from hospital settings to ambulatory settings. A result of this has been a variation in the clinical experiences of medical students on an individual basis. Each setting is different and complex in nature. This unpredictability has students creating opportunities to learn in a clinical setting when they can find them. [1] Clinical visits between students and patients can be categorized as a way to measure clinical education.

Tracking systems have been introduced to medical programs as a way to track student to patient interactions.[2] Those who are involved in accreditation and curriculum formation need insight into certain questions, namely: "Are the students exposed to certain diseases and procedures?" "Does the didactic curriculum prepare the student for professional practice?" and "Are new diseases presenting that should find a place in the program curriculum?" [3] Some tracking systems are episodic while others are continuous based on their objectives.[4] Programs interested in tracking have used paper "tracking" systems, web-based tracking, diaries, retrospective site evaluations and PDAs to collect data from student clinical encounters. [5] Among other qualities, the analysis of data from tracking systems provides a mechanism for programs to provide preceptors with specific feedback, compares rotation sites, addresses student concerns, and discusses fulfillment of accreditation objectives.[6]

PDAs have grown in popularity among medical care providers over the past 10 years. Technological advances have made it possible to produce a small durable and reliable hand held computer. [7] It is estimated that by the year 2008, 60% of medical care providers will incorporate a PDA into their clinical practice. The use of PDAs in the past has been found mostly in event

planning, calculations, and address directories. [8] Now, medical professionals are using PDAs for numerous applications including: patient tracking, medical reference, and drug dosage along with the personal use. [9]

It appears that students prefer PDAs for clinical rotation tracking. In a post clinical rotation survey, students agreed that a PDA tracking system is preferred to a paper-logging system.[5] Provider-friendly medical reference software, such as Epocrates®, is found very useful for healthcare providers due to its ability to import information with insurance companies and pricing, as well as its accessibility features in diagnosis, pharmacology, and treatment plans.

PDAs have grown in popularity among PA programs. They have the capability to replace index cards and logbooks.[10] The PDA has many favorable features, including: mobility, size, power, memory, battery, usability, connectivity, and simplicity.[11] PDAs popularity has grown because software is available that is beneficial for patient-student encounter tracking systems. This software has proven to be efficacious in its tracking, interpretation, and collection of data among the students.

At WSU-PA, the number of patient encounters recorded using PDA's has increased significantly. In 2002, this program began tracking patient encounters by using hand written cards. At that time the mean patient encounter per rotation for all 42 students was 2667. The program changed its data collection method to web based tracking and received a decrease to 2305 patient encounters per rotation per 42 students. The PDA logging system caused an increase in reported encounters per rotation per 42 students to 5570.[11]

Collected data from the PDA influences decisions made by faculty. Quality and diversity are of great importance to ensure that students have a broad spectrum of cases and retention of clinical skills.[12] Depending on the location of the site, exposure to clinical cases varies.

Opportunities for adjustment of the curriculum and the locations of future clinical site rotations are found when this data is collected and analyzed. One such change occurred when WSU PA dropped one of its clinical sites because due to lack of diagnosis diversity.

CHAPTER THREE

METHODOLOGY

Study Setting

This study was conducted at the Pratt Regional Medical Center (PRMC) in Pratt, Kansas. Annually, this center hosts up to eight WSU-PA students who are in their second year. This is an Emergency Medicine rotation.

Study Population

The population consisted of patient medical records from PRMC-ED who were seen and treated by WSU-PA students. WSU-PA program is a master's level, 42-student cohort. The first year of this program is didactic while the second year is clinical, with clinical rotations taking place in a variety of settings. This was a convenience sample of all students assigned to PRMC-ED.
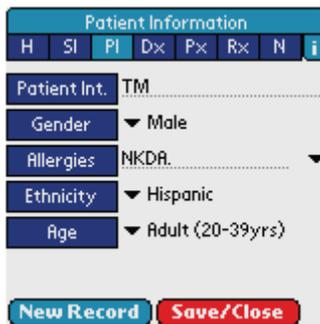
Measurements

Collected data from medical charts was compared to the PDA entry made by the student during the time period in which the student was assigned to PRMC-ED rotation. The following characteristics of the patient encounters were compared for consistency: patient age, patient sex, and patient diagnosis.

Data collection Form

The data was collected into the HandEchart® software by using drop-down boxes as seen here.

Plate 1 – HandEchart demographics page screen capture

Data Abstraction

Data was taken from WSU-PA Program student reported data for each of the four students A, B, C, and D. Medical records from PRMC-ED were reviewed and were subsequently compared to the previously reported data. A WSU-PA faculty member reviewed the abstracted data and provided verification of PDA entries. Staff at PRMC was available to provide authentication of medical records.

Analysis

The data was analyzed by comparing the diagnosis, age, and gender of patients who were seen by students B, C, and D. The gender of the patients seen by Student A was not reported, therefore only the diagnosis and age of the patients were compared.

Microsoft Excel spreadsheets were used to organize the data. Auto Filters were used to separate the data according to the date of the patient encounter. Once the dates of patient encounters were

matched between the student data and the medical chart data, a comparison of patient demographics was performed.

Three columns representing the above mentioned demographics of the patients were created in a Microsoft Excel spreadsheet. Patient encounters with diagnosis and dates of service that matched received a "Y" in the appropriate box of the column titled "Dx matched," while the encounters with diagnosis and dates of service that did not match were labeled with an "N" in the same box in the same column. The encounters with age and dates of service that matched received a "Y" in the column titled "Age matched," while the encounters with age and dates of service that did not match received an "N" in the same box of the same column. The encounters with sex and date of service that matched received a "Y" in the appropriate box of the column titled "matched sex," while the encounters with date of encounter and sex that did not match received an "N" in the appropriate box of the same column. After the demographics of each patient encounter received a "Y" or an "N", column totals of "Y" and "N" were tallied and final percentages of the matched demographics of all the student's encounters during the rotation were calculated.

CHAPTER FOUR

RESULTS

Data was collected from the patient encounters of 4 different 2nd year WSU-PA students. For the sake of anonymity, students' names were withheld and replaced with letters A, B, C, and D, respectively. A total number of 737 patient encounters occurring during 4 clinical rotations (Student A; July 11,2006-August 17,2006: Student B; August 22, 2005-September 28, 2005: Student C; January 30, 2006-Feburary 22, 2006: Student D April 3, 2006- May 2, 2006) were compared. Each student entered demographics of each patient encounter into Palm OS ® PDA's using HandEchart® software. Each student transmitted the patient encounter information to the WSU-PA at the end of each rotation.

The comparison of PDA entries and medical chart entries for Student A had the following statistics following comparison: 28.21%(55/195) diagnosis and date of encounter matched with the medical records, and 16.41% (32/195) of the patient age and date of encounter matched. Figure 1 represents the final tally of comparison for Student A.

N=195

	Matched	%
Diagnosis	55	28%
Age	32	16%
Sex	NA	NA

Figure 1.Student A Matched encounters

The comparison of PDA entries and medical chart entries for Student B had the following statistics following comparison: 32.74% (73/223) of the diagnosis and date of encounter matched, 29.15% (65/223) of the age of the patient and date of encounter matched, and 31.39%

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(70/223) of the sex of the patient and date of encounter matched. Figure 2 represents the final tally of comparison for Student B.

N=223

	Matched	%
Diagnosis	73	32%
Age	65	29%
Sex	70	32%

Figure 2. Student B Matched encounters

The comparison of PDA entries and medical chart entries for Student C had the following statistics following comparison: 52.94% (63/119) of the diagnosis and date of encounter matched, 39.50% (47/119) of the age of the patient and date of encounter matched, and 48.74% (58/119) of patient sex and date of encounter matched. Figure 3 represents the final tally of comparison for Student C.

N=119

	Matched	%
Diagnosis	63	53%
Age	47	40%
Sex	58	49%

Figure 3. Student C Matched encounters

The comparison of PDA entries and medical chart entries for Student D had the following statistics following comparison: 23% (46/200) of diagnosis and date of encounter matched, 19% (38/200) of the age of the patient and date of encounter matched, and 20.50% (41/200) of patient sex and date of encounter matched. Figure 4 represents the final tally of comparison for student D.

N=200

	Matched	%
Diagnosis	73	32%
Age	65	29%
Sex	70	32%

Figure 4. Student D Matched encounters

Even though no data was found in the medical charts on some days when patient encounters were loaded to student PDA's, medical charts from days prior to or following the dates entered on the PDA's were available for comparison. PDA entries whose dates of encounters did not match were compared to medical chart entries that occurred within a maximum of 2 days from PDA entry. On occasion, this comparison proved to be beneficial by increasing the number of matched ages, sex, and diagnosis because some students chose to input patient encounter characteristics on days other than the actual date of encounter. It was to the discretion of the authors of this project to determine if a patient encounter on a given date was eligible to be compared to encounters entered to student PDA's on different dates that fell within the defined range of +/- two days of the date found on the medical chart.

The comparison of PDA entries and medical chart entries for Students A, B, C, and D had the following statistics: 35% (237/672) matched diagnoses and dates of encounters, 27% (182/672) matched ages of patients and dates of encounters, and 35% (169/477) 169 matched sex of patient and date of patient encounter. Figure 5 represents the final tally of comparison of diagnosis, age, and sex of patients with matching dates for patient encounters of Students A, B, C, and D.

	Matched	%	N
Diagnosis	237	35%	672
Age	182	27%	672
Sex	169	35%	477

Figure 5. Totals from all student encounters

CHAPTER FIVE

DISCUSSION

In a review of literature, it is evident that PDAs are becoming a very important part in medical education and the practice of medicine in the United States. Medical schools are using PDAs as resources to track patient encounters experienced by their students. In this study, less than 35% of the medical charts from PRMC-ED were consistent with the data transmitted to WSU-PA from the 2nd year students' PDAs. This data indicates that when medical records are compared to the data from the PDAs used by 2nd year PA students in PRMC-ED, the accuracy of patient demographics of diagnosis, age and sex is less than 35%.

Conclusion

Data revealed that less than 35% of the data recorded by students during rotations at PRMC-ED are consistent with medical records. Date of encounter, age, sex and diagnosis of a patient encounter were inconsistent 2/3 of the time. This information highlights the inconsistency of 2nd year PA students who use PDAs for data collection during their rotations.

Limitations to project

Some student entries did not occur on the exact date of service. If the entries were made on dates other than the actual date of service, such as entering all encounters at the end of the week or rotation, the data may be less reliable. However, when the date of service was excluded and just diagnoses for the entire rotation were compared, only 30% were consistent.

Students may have only performed the initial History and Physical Exam on the patients without following the patient encounter all the way to the final diagnosis. In some cases, a

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student is unable to record the final diagnosis because of the time period required for diagnostic testing.

It is of significance to note that PDA data entries from 08/22/05-08/30/05 from student B were not compared to medical charts because medical charts were not available for comparison. The comparison of PDA entries and medical chart entries totals for Student B excluding dates 08/22/05-08/30/05 had the following percentages after comparison: 46.20% (73/158) of diagnosis and date of encounter matched, 41.14% (65/158) of the age of the patient and date of service matched, and 44.30% (70/158) of the patient sex and date of encounter matched. Student B's PDA entries from dates 08/22/05 through 08/30/05 are excluded in the final cumulative count of Students A, B, C, D. Student B entered a total of 65 entries into his/her PDA between 08/22/05 and 08/30/06 which were not compared to the medical charts. If these entries are included in the overall totals of this project, then the total number of entries compared is 737 (195+223+119+200). The percentage of matched diagnosis is 32.15% (237/737), matched age is 24.70% (182/737), and matched sex of patients is 31.18% (169/542).

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