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EMERGENCY PHYSICIANS WHO PRODUCE HIGHER RELATIVE VALUE UNITS PER HOUR SPEND SIMILAR AMOUNTS OF TIME AT PATIENT BEDSIDES AS THEIR COLLEAGUES

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☐ **Abstract—Background: Emergency physicians (EPs) are expected to deliver quality care while maintaining high levels of efficiency and productivity as measured by the relative value unit (RVU). Objectives: We sought to determine whether academic EPs with higher RVUs spend less time at the bedside than their colleagues. Methods: This was a prospective, observational, cohort study. A 13-item task list was generated, pilot-tested, and placed onto a computerized tablet. Results: There was no difference among EPs in terms of time spent at bedside, 26.7% of total time, 17.31 min (95% confidence interval [CI] 14.43–20.19), $p = 0.052$; resident interaction 13.1%, 8.46 min (95% CI 4.68–12.25), $p = 0.959$; charting, 11.1%, 7.17 min (95% CI .746–5.65), $p = 0.055$; information search, 10.5%, 6.80 min (95% CI 0.84–8.52), $p = 0.320$; walking, 9.0%, 5.86 min (95% CI 5.17–6.54), $p = 0.112$; consultant interaction, 8.2%, 5.28 min (95% CI 3.18–7.40), $p = 0.404$; writing orders, 6.5%, 4.19 min (95% CI 3.22–5.15), $p = 0.109$; nursing interaction, 5.6%, 3.65 min (95% CI 2.54–4.76), $p = 0.260$; other, 5.2%, 3.65 min (95% CI 1.76–5.02), $p = 0.785$; medical student interaction, 4.2%, 2.75 min (95% CI 0.53–4.97), $p = 0.102$; physician assistant interaction, 2.8%, 1.79 min (95% CI 1.08–2.50), $p = 0.959$; clerical interaction, 1.7%, 1.13 min (95% CI .69–1.57), $p = 0.335$; and electrocardiogram interpretation, 0.7%, 0.45 min (95% CI .32–.58), $p = 0.793$. Conclusions: Despite differences in RVU-based productivity data, academic EPs spend similar amounts of time involved in the daily tasks of taking care of patients, underscoring that direct physician–patient interaction is one practice parameter that is not compromised among these EPs.**

☐ **Keywords—productivity; teaching; RVUs**

INTRODUCTION

Background

Productivity, as commonly measured by the Relative Value Unit (RVU), is a widely accepted metric to evaluate the efficiency of the practice of emergency physicians (EPs). It is used by physician groups, both in academic and in community-based practices, as a means for promotion, partnership, compensation, and on occasion, termination (1). RVUs are based on the Current Procedure Terminology book, and are comprised of work (time, effort, expertise, and intensity of service, 55% of the RVU value), practice expense (overhead, 42% of the RVU value), and professional liability insurance (3% of the RVU value) (2).

Importance

A number of articles have examined practice patterns among EPs. A 1998 study found that EPs, nurses, and residents spend 32% of their time involved in direct patient care activities, whereas other studies have noted direct

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patient care accounts for between 18% and 33% of physician time on the medical wards of the hospital (3–5). Of interest, interns spent twice as long documenting (22%) as they spent engaged in direct patient care (6). Among EPs, a previous study found physicians spend 24.2 min of every hour directly involved in the care of a patient, a finding that supports the American Academy of Emergency Medicine's guideline of no more than 2.5 patients per hour per EP for moderate-acuity emergency departments (EDs) (7,8).

Nevertheless, much of this work occurs in a fragmented, multitasking environment, as EPs engage in tasks from interpretation of diagnostic studies and documentation to reassessment, consultation, and disposition (9,10). These workflow interruptions, which have been found in multiple specialties, affect RVU performance (11,12).

The demand on an academic EP's time during a shift – from patient care to teaching to clinical productivity – can be challenging to balance. Surprisingly, however, EPs with higher clinical productivity scores did not have lower medical student teaching scores and many faculty at an academic ED can excel at both clinical productivity and resident education (13,14).

Goals of This Investigation

We sought to determine whether more productive EPs spend less time engaged in educationally focused and patient-centric tasks, such as medical student interaction and time at the patient's bedside.

METHODS

Study Design

We used a prospective, observational, cohort design.

Setting

This study was conducted at a 3-year suburban emergency medicine residency program that sees approximately 110,000 patients per year at its primary training site. The faculty members at this institution have teaching responsibilities that include medical students and residents.

Selection of Participants

At the time of the study, there were 42 faculty members and fellows. An invitation e-mail was sent to those faculty members, of which 16 agreed to voluntarily participate. This study was approved by our hospital's Institutional Review Board.

Data Collection and Processing

A 13-item task list was generated, pilot-tested, and loaded on a computerized tablet. The authors selected these 13 items based on their own clinical experience in the ED. Tasks included the following: at patient's bedside, charting, electrocardiogram interpretation, information search, Radio Paramedic Control, walking, writing orders, interacting with residents, physician assistants, medical students, nurses, consultants, or clerical staff, and other actions.

The task list was placed into a Flash (Adobe, San Jose, CA) application that resided on a private Web server. The application was accessed through a Microsoft Windows-based handheld computerized tablet (Microsoft Corporation, Redmond, WA) that allowed for portability while observing the EPs. One research nurse who was trained by the study's investigators collected task data on each subject during three separate sessions lasting approximately 1 h each. After setting up the session, which consisted of selecting an attending, and putting on the pedometer, the research nurse clicked on tasks with a stylus as the attending changed to that task. The program kept track of times each task was initiated. At the end of the session, the research nurse recorded the distance travelled according to the pedometer. The program then uploaded collected data to the private Web server for later retrieval. Data collection was limited to daytime hours when the research nurse was available.

Primary Data Analysis

Data were downloaded onto a Microsoft Excel spreadsheet and grouped according to historical attending RVU performance into top, middle, and lower tiers. The percentage of time spent carrying out each task, the mean number of tasks completed per hour, and the mean distance travelled was compared amongst the three tiers using a one-way analysis of variance. A p-value of ≤ 0.05 was considered significant. All statistical analyses were conducted using Statistical Analysis Software (SAS) Version 9.0 (Cary, NC).

RESULTS

A total of 16 subjects were included in this study. The top, middle, and lower tiers of RVU performance (n = number of subjects in each group) were calculated as follows: top tier: (n = 5), 7.89 RVUs/h (95% CI 7.47–8.31); middle tier: (n = 6), 6.85 RVUs/h (95% CI 6.71–6.99); and lower tier (n = 5), 6.16 RVUs/h (95% CI 5.87–6.45); $p < 0.0001$.

The time spent performing various tasks in the ED as they relate to RVUs are quantified in Table 1.