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Nurse practitioners' time on nonbillable activities

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ABSTRACT

Background and purpose: During the provision of patient care delivery, all providers, including nurse practitioners (NPs), spend some time in activities that are not reimbursable. Understanding these nonbillable activities is crucial to the economic viability and success of existing and projected practice models. This study explored and compared seven nonbillable activities occurring in the practices of NPs in various settings.

Methods: Using a nonexperimental, descriptive design, 509 NPs were surveyed about nonbillable activities encountered in daily practice. Binomial regression analyses and incidence rate ratios were used to interpret relationships between each variable and nonbillable time.

Conclusions: Although not every variable had significance, there were significant differences found in the amount of time spent in certain nonbillable activities depending on workplace setting, number of support staff, and primary care provider role.

Implications for practice: The uncertainty of health care reform, including reimbursement, provider shortage, and the expanding roles of NPs, requires a closer look at both billable and nonbillable care activities. Understanding how nonbillable time affects work efficiency, costs, and the value of NPs will allow NPs to influence future health care reimbursement policies and delivery care models.

Keywords: Economics; non-billable; nurse practitioner; reimbursement.

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Health care has experienced unprecedented changes over the past several years with the implementation of the Affordable Care Act (ACA) on March 23, 2010. As the recently elected officials and appointed federal administration entered office in 2017, there have been loud voices of support for significant change to or even repeal of the ACA. Any of these actions could affect advanced practice nurses and health care delivery in the US. The ACA coupled with the shortage of primary care physicians has spurred the move to team-based care models of patient care delivery. Most health care facilities use a diverse team of providers that include advanced practice registered nurses (Freund et al., 2015). To remain a major stakeholder in providing quality care to all Americans, nursing must bring their contributions to the forefront in preparation for upcoming changes in reimbursements and health-related policies.

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The role of the primary care provider whether a nurse practitioner or a physician is very complex. Part of this complexity is managing numerous activities that fall outside the auspice of direct patient care and do not receive reimbursement (nonbillable). The existence of such activities is widely recognized as requirements that consume a significant amount of provider's time. Gilchrist et al. (2005) were one of the first to observe and report direct (billable) and nondirect (nonbillable) patient contacts. Recognizing these nonbillable activities in relation to the total time spent is critical to economic viability and success of existing and projected practice models. The purpose of this study is to extend knowledge of nonbillable activities that affect provider workload, support patient care, and add to the future health care delivery models focusing on quality outcomes and efficiency.

The American Nurses' Association (2015) reported that the 2014 nurse practitioners' (NPs') average annual salary was $109,352. This number divided by 52 weeks per year equals $2,102.92. In the traditional 40-hour workweek, the hourly rate is $52.57. The resulting cost per minute of time is 0.88 cents. At this rate, every five minutes of nonbillable time costs $4.40. Understanding the significance of nonbillable activities that

affect patient care can inform current and future health care models to improve quality and efficiency.

Review of literature

Many NPs claim that their practice involves time that is consumed in nonbillable activities, which yields disproportionate reimbursement for their work; however, there is little nursing literature to substantiate this claim. The search for nonbillable literature revealed very limited evidence using a nurse practitioner population. Searching for other health care provider literature on the nonbillable subject resulted in physicians being the overwhelming targeted population.

Ogunfiditimi, Takis, Paige, Wyman, and Marlow (2013) and colleagues conducted a productivity study to identify time spent on revenue-generating services and nonbillable services in both inpatient and outpatient settings. Thirteen NPs and six physician assistants collected data for a total of 44 days using electronic devices. The aggregate results showed that 60.3% of time was used in revenue-generating activities compared with 36.7% of nonbillable activities, with 3% recorded as personal time. The inpatient activities reported as most common for nonbillable activities were functions associated with team conferences, analysis of data, and phone consults. The outpatient participants reported analysis of data, team conferences, and phone conferences as accounting for the most nonbillable time.

In a national study, Perloff, DesRohes and Buerhaus (2016) sought to assess the cost of services to Medicare beneficiaries treated by NPs when compared with primary care physicians. The retrospective cohort study sampled 128,006 beneficiaries who received care from at least one NP and 474,243 beneficiaries who received care from physicians. The cost was defined as the Medicare paid amount on claims. The adjusted estimates of cost differences for inpatient, outpatient, and other services comparing NPs with physicians ranged from 11% to 29%. The findings acknowledge that NPs' reimbursements are significantly less when compared with physicians.

In the nonexperimental pilot study by Odell, Buron, Kippenbrock, Auler, and Carney (2012), two NPs provided daily logs for 1 month for the purpose of describing a typical practice day. NPs documented the frequency and duration of their nonbillable activities. The results showed that NPs spent most of their nonbillable time (17.4 minutes per day) on consults and interpreting laboratory results (10.2 min/day).

Farber, Siu, and Bloom (2007) provided data about "care outside the office visit" on 16 physicians practicing in a geriatric ambulatory setting. The findings reported an additional 6.7 minutes of care provided outside of the office visits for every 30 minutes of the time spent with the patient. This led to an overall estimate that these responding physicians had 7.8 hours of unreimbursed time over a 5-day workweek. Some of the activities reported were professional collaboration, medical management, follow-up laboratory tests, and referrals. Unfortunately, NPs' data were not collected in the study, although they were employed.

Chen, Hollenberg, Michelen, Peterson, and Casalino (2011) observed 33 physicians employed in private- or public-run practices for activities outside of office visits (AOVs). The researchers reported that 20% of the workday consisted of AOVs. These activities included charting; follow-up of patient information such as diagnostic studies, consultations, mail, chart reviews, and health research; communications with patient, staff, and other providers; and patient-related process work.

The evidence suggests that providers are devoting a significant amount of time on nonbillable activities. This measure of productivity has received little attention in the existing literature and it is not being addressed in projected nursing care delivery models. Furthermore, a standardized time and motion measurement method has yet to be established. In addition, productivity as measured by the time on task is crucial for the expansion and integration into the national health care workforce. Health care organizations considering hiring NPs will benefit from understanding the efficiencies associated with the role.

An additional aim of this study was to explore and compare a number of variables related to NPs' work environment, identify and define nonbillable activities, and determine the amount of time spent on nonbillable activities. The inquiry sought to determine if the time spent on each of the seven identified nonbillable activities was significantly different considering the role of the NP as a primary care provider, the workplace setting type, and the size of the setting expressed as number of employees.

Methods

Participants

Participants in this analytic sample were 615 NPs from 12 southern states in the following three working environments: hospital, physicians' office, and private practice. After eliminating 68 respondents (11.05%) who were either not working full-time (less than 35 hr/week) or reported working 120 hours or more per week (exceeding the limit of working 24 hours per day for 5 days) and 38 participants (6.18%) who had missing values, the final sample included 509 participants with ages ranging from 25 to 66 years (M = 45.05, SD = 10.34). As shown in Table 1, approximately 90% of participants were women, and four participants did not provide their gender. With regard to ethnicity, the majority were white (88.2%) and seven respondents (1.4%) did not provide their ethnicity. For education level, most participants had a master's degree (73.6%), followed by post-masters (19.1%), doctorate (4.9%), and baccalaureate (2.4%). The participants worked an average of 43.65 hours per week (SD = 7.37) ranging from 35 to 84 hours, and over half of the participants (51.5%) worked in the hospital.

Table 1. Characteristics of the study sample (*N* = 509)

Demographics	*n*	%
Sex		
Female	456	89.6
Male	49	9.6
Missing	4	.8
Ethnicity		
White	449	88.2
Black	31	6.1
Hispanic	12	2.4
Asian	9	1.8
Native American	1	.2
Missing	7	1.4
Education		
Baccalaureate	12	2.4
Masters	373	73.3
Post-masters	97	19.1
Doctorate	25	4.9
Missing	2	.4
Workplace		
Hospital	262	51.5
Physician's office	82	16.1
Private practice	165	32.4

Procedures

After the university's institutional review board approval, the researchers obtained the names and mailing addresses of the NPs from the 12 state boards of nursing. Inclusion criteria for this study required that the participant was a licensed nurse practitioner and completed a survey. Because only one state provided email addresses, most recruited participants were contacted by mailed postcards. The postcard or email provided information about the survey, a web address for respondents to access more details about the study, and a secure website for completing the survey online. Using IP address and response patterns, researchers were able to ascertain that a participant completed the survey only once.

Measures

This study used a nonexperimental descriptive design. The researchers developed a 24-item survey to gather data focused on the study's purpose. Questions pertaining to demographics, place of employment, practice specialty, hours worked per week, use of assistant personnel, and nonbillable activities were developed based on the literature. To obtain face validity of the tool, the researchers distributed a paper version of the survey during a local professional development meeting. Nurse practitioners were asked for their feedback regarding clarity and appropriateness of questions, logical flow of questions, and potential other questions to be asked. After making corrections, the researchers submitted the tool to a webmaster for conversion to an online electronic questionnaire for the SurveyMonkey platform.

Nonbillable time

Participants were asked to estimate the approximate time (minutes per day) spent on nonbillable activities, which included reviewing laboratory reports, phone calls, prescription refills, image results, consultations, sale representatives, and emails. See Table 2 for operational definitions of each nonbillable activity.

Total nonbillable time

The total time spent on nonbillable activities was calculated by taking the sum of all the nonbillable activities as listed in Table 2. The range was 0–570 minutes per day. In addition, for the present study, the total amount of nonbillable time was coded into 17 categories with 30-minute time increments from "0 hours" to "above 7.5 hours."

Personnel

The respondents were asked to provide the total number of health professionals and supporting staff working in their practice. For analytical purposes, the total personnel reported was categorized and defined as the following: 0 = "work alone," 1 = "small: one to 8," 2 = "medium: nine to 30," and 3 = "large: above 30" personnel on staff with the setting "above 30" as the reference group.

Workplace

The three most common workplace settings (hospitals, physicians' offices, and private practices) were selected for further comparisons of nonbillable activities. Private practice was defined as an independent entity owned and operated by the NP. The "hospital" was set as the reference group.

Primary care provider

Participants reported whether they were primary care providers. With coding 0 = "not a primary care provider" and 1 = "a primary care provider," the nonprimary care provider (coding 0) was set as the reference group.

Statistical analyses

Given the positively skewed distribution of the reported nonbillable minutes per week estimated by participants, the negative binomial regression analyses were used, which permit the use of incidence rate ratios (IRRs) that can aid in interpreting relationships between each

Table 2. Operational definitions and examples of nonbillable activities

Category	Examples of Nonbillable Activities
Consultations	Talks by phone to MDs and NPs; reviews discharge summaries from hospital, reviews notes for consultants, calls the ED for patient admission
Phone calls	Talks by phone to patients and family
Emails	Emails to patients and family
Representatives	Talks to medical and pharmaceutical companies about queries and advice for products
Prescription refills	Writes prescription, calls pharmacy for controlled substances,
Image results	Reviews X-rays, MRI, ultrasounds, PET, EEG, ECG, and other imaging
Laboratory results	Orders laboratory test and reviews results; sends results to other providers; communicates with staff nurse to send laboratory results to the patient or family

Note: NP = nurse practitioners.

predictor and nonbillable time. The researchers conducted a series of negative binomial regression analyses to investigate whether the available indicators (personnel, workplace, and primary care provider status) contributed to the predication of the approximated nonbillable time. First, the univariate negative binomial regression analyses were used to evaluate whether each given indicator was associated with the total nonbillable time with 30-minute increments. Second, a multiple negative binomial regression analysis (including two or more predictors simultaneously in a single model) was applied to examine the effects of each indicator while controlling for other variables in the model. After examining the initial model, any predictor with a nonsignificant coefficient would be removed from the final model. Finally, seven more negative binomial regression analyses were conducted using the reported minutes spent on each nonbillable activity (consultations, answering phone calls, replying emails, responding to company representatives, writing prescriptions, reviewing image results, and checking laboratory results) as the criterion variable. All analyses were conducted in SAS version 9.4 (SAS Institute Inc., NC).

Results

Univariate associations with total nonbillable time

The right side of Table 3 presents the univariate associations between each category and total estimated time with 30-minute increments. The total time was significantly and positively associated with "Workplace" and "Primary Care Provider" status, but negatively associated with personnel (especially work alone vs. over and above 30 personnel). The IRRs are also reported to aid in interpreting the relationship between each category and total nonbillable time. An IRR of one indicates that a one-unit (dummy code in this study) change in the predictor does not yield any effect in the likelihood of the criterion, which means there is no effect. IRRs above one indicate a positive association between the predictor and criterion, whereas IRRs below one indicate a negative relationship. For example, those who are primary care providers report 1.53 times the nonbillable minutes (30-minute increments) compared with those who are not. We caution that the IRRs must not be compared quantitatively across predictors because the reference groups vary. In addition, it is important to note that the IRRs presented on the right side of Table 3 are univariate effects and do not control for other predictors in the model.

Multivariate associations with total nonbillable time

After the univariate analyses, a multiple negative binomial regression analysis was then estimated that included all of the potential predictors influencing the total time spent per week. After inspecting the initial model, significant association was not observed between the criterion and the "Workplace" while holding all other variables constant. After removing the nonsignificant predictor (i.e., Workplace), parameter estimates, IRRs, 95% confident intervals of IRRs, and significance test results for the multivariate model are presented on the left side of Table 3. Not surprisingly, those who work alone were 0.24 times as likely to report total nonbillable time when compared with those who work in the large institution with over and above 30 personnel while holding other variables constant. In addition, primary care providers spend more nonbillable time than do nonprimary care providers at a rate of 1.17, holding all else constant.

Nonbillable time by activity

After the overall model with total nonbillable time was revealed, seven more negative binomial regression analyses were conducted using the reported minutes NPs spend on each nonbillable activity (i.e., consultations, answering phone calls, replying emails, responding to company representatives, writing prescriptions, reviewing image results, and checking laboratory results) as the criterion variable. Results for initial and final models (i.e., left side and right side, respectively) are shown in Table 4. We briefly summarize these findings organized around statistical significance of the indicators (i.e., number of total personnel, type of workplace, and primary care provider status).

Table 3. Summary of negative binomial regression results for final model and individual predictors

	Univariate Analyses (Single Predictor)			Final Model		
Variable	***b***	**IRR**	**95% CI**	***b***	**IRR**	**95% CI**
Personnel						
Above 30	Ref	—	—	Ref	—	—
9–30	0.036	1.037	0.877–1.226	0.002	1.001	0.846–1.187
1–8	0.141	1.151	0.954–1.390	0.105	1.111	0.918–1.344
Work alone	−1.472	0.229***	0.173–0.305	−1.428	0.240***	0.180–0.319
Workplace						
Hospital	Ref	—	—	Ref	—	—
Physician's office	0.409	1.506***	1.222–1.855	—	—	—
Private practice[a]	0.296	1.344***	1.135–1.592	—	—	—
Primary care provider						
No	Ref	—	—	Ref	—	—
Yes	0.426	1.531***	1.317–1.782	0.153	1.166*	1.012–1.343

Note: CI = confidence interval; IRR = incidence rate ratio.
[a]*Private practice.*
**p* < .05.
***p* < .01.
****p* < .001.

Effects on consultations and phone calls

Of the three indicators applied in this study, results indicated that nonbillable estimated minutes spent on consultations and phone calls were only significantly associated with the total number of health professionals and supporting staff working with participating NPs. The final models show that those working alone spend less time on consultations than those who work with more than 30 personnel by a factor of 0.28 and less time on phone calls by a factor of 0.23.

Effects on representatives and prescription refills

Not surprisingly, participating NPs who work alone, when compared with those who work with more than 30 personnel, are significantly related to spending less time talking to medical and pharmaceutical companies' representatives (IRR = 0.04) and writing prescription refills (IRR = 0.35). However, those working with 9–30 personnel spent more time with representatives (IRR = 1.74) and more time filling prescriptions (IRR = 1.72) than those who work in the large institution with more than 30 personnel.

The workplace settings (i.e., hospitals, physician offices, and private practices) also had an impact on time spent with representatives and writing prescription refills while holding the indicator of personnel constant. NPs working at a private practice and physician office spent more time with representatives than those working at a hospital by a factor of 2.88 and 2.95, respectively. Similarly, participants reported that they spent more time on prescription refills (IRR = 4.07 for private practice and IRR = 5.52 for physician office) when compared with those who worked at a hospital.

Effects on emails and image results

Once again, a similar pattern is shown with emails and image results being associated with reported minutes. Participants who worked alone spent significantly less time on emails (IRR = 0.13) and image results (IRR = 0.19) when compared with those who work with more than 30 personnel. Unlike the pattern with representatives and prescription refills however, NPs working at a private practice and physician office spent less time with emails and image results than do those working at a hospital (Table 4).

Effect on laboratory results

All three indicators were significantly associated with estimated nonbillable minutes spent on ordering laboratory tests and reviewing laboratory results. One interesting finding from this model was that, holding all else constant, participants who identified themselves as primary care providers spent 1.63 times the nonbillable minutes reviewing laboratory results compared with those who were nonprimary care providers. As with all

Table 4. Initial and final negative binomial regression model for each activity (*N* = 509)

	Model/Variable		Final Model	
Variable	**IRR**	**95% CI**	**IRR**	**95% CI**
Consultations				
Personnel				
Above 30	Ref	—	Ref	–
9–30	0.973	0.569–1.662	0.973	0.569–1.662
1–8	1.173	0.642–2.144	1.173	0.642–2.144
Work alone	0.279***	0.151–0.515	0.279***	0.151–0.515
Workplace				
Hospital	Ref	—	Ref	—
Physician's office	0.973	0.547–1.731	—	—
Private practice[a]	0.941	0.573–1.545	—	—
Primary care provider				
No	Ref	—	Ref	—
Yes	0.722	0.462–1.127	—	—
Phone calls				
Personnel				
Above 30	Ref	—	Ref	—
9–30	1.183	0.840–1.667	1.189	0.848–1.668
1–8	1.225	0.822–1.826	1.237	0.839–1.825
Work alone	0.234***	0.157–0.350	0.234***	0.158–0.346
Workplace				
Hospital	Ref	—	Ref	—
Physician'soffice	0.926	0.621–1.379	—	—
Private practice[a]	0.869	0.631–1.978	—	—
Primary care provider				
No	Ref	—	Ref	—
Yes	1.142	0.838–1.555	—	—
Emails				
Personnel				
Above 30	Ref	—	Ref	—
9–30	1.184	0.434–3.227	1.184	0.434–3.227
1–8	2.268	0.676–7.616	2.268	0.676–7.616
Work alone	0.126***	0.039–0.403	0.126***	0.039–0.403
Workplace				
Hospital	Ref	—	Ref	—
Physician's office	0.298*	0.089–1.000	0.298*	0.089–1.000
Private practice[a]	0.258**	0.099–0.669	0.258**	0.099–0.669

(*continued*)

Table 4. Initial and final negative binomial regression model for each activity (*N* = 509), *continued*

	Model/Variable		Final Model	
Variable	**IRR**	**95% CI**	**IRR**	**95% CI**
Primary care provider				
No	Ref	—	Ref	—
Yes	1.575	0.658–3.769	—	—
Representatives				
Personnel				
Above 30	Ref	—	Ref	—
9–30	1.737*	1.103–2.737	1.737*	1.103–2.737
1–8	1.258	0.731–20,165	1.258	0.731–20,165
Work alone	0.037***	0.016–0.084	0.037***	0.016–0.084
Workplace				
Hospital	Ref	—	Ref	—
Physician's office	2.953***	1.678–5.195	2.953***	1.678–5.195
Private practice[a]	2.884***	1.808–4.601	2.884***	1.808–4.601
Primary care provider				
No	Ref	—	Ref	—
Yes	1.103	0.710–1.713	—	—
Prescription refills				
Personnel				
Above 30	Ref	—	Ref	—
9–30	1.721***	1.143–2.590	1.721***	1.143–2.590
1–8	1.529	0.952–2.455	1.529	0.952–2.455
Work alone	0.350***	0.216–0.568	0.350***	0.216–0.568
Workplace				
Hospital	Ref	—	Ref	—
Physician's office	5.516***	3.504–8.685	5.516***	3.504–8.685
Private practice[a]	4.070***	2.776–5.965	4.070***	2.776–5.965
Primary care provider				
No	Ref	—	Ref	—
Yes	1.242	0.849–1.818	—	—
Image results				
Personnel				
Above 30	Ref	—	Ref	—
9–30	0.789	0.533–1.167	0.837	0.567–1.234
1–8	0.759	0.483–1.193	0.824	0.527–1.289
Work alone	0.193***	0.119–0.313	0.191***	0.118–0.309

(*continued*)

Table 4. Initial and final negative binomial regression model for each activity (*N* = 509), *continued*

	Model/Variable		Final Model	
Variable	**IRR**	**95% CI**	**IRR**	**95% CI**
Workplace				
Hospital	Ref	—	Ref	—
Physician's office	0.542***	0.340–0.863	0.616*	0.393–0.966
Private practice[a]	0.560***	0.383–0.816	0.620*	0.430–0.895
Primary care provider				
No	Ref	—	Ref	—
Yes	1.397	0.990–1.971	—	—
Laboratory results[b]				
Personnel				
Above 30	Ref	—	Ref	—
9–30	—	—	0.723	0.516–1.015
1–8	—	—	0.805	0.549–1.183
Work alone	—	—	0.217***	0.146–0.324
Workplace				
Hospital	Ref	—	Ref	—
Physician's office	—	—	1.118	0.772–1.620
Private practice[a]	—	—	0.724*	0.525–0.998
Primary care provider				
No	Ref	—	Ref	—
Yes	—	—	1.625***	1.211–2.182

Note: CI = confidence interval; IRR = incidence rate ratio.
[a]*Private practice.*
[b]*Initial model is the same as the final model.*
**p* < .05.
***p* < .01.
****p* < .001.

other nonbillable activities, NPs working alone spent less time on laboratory results than NPs working with more than 30 personnel (IRR = 0.22), and participants working at a physician office spent 0.72 times the nonbillable minutes on laboratory results compared with those who worked at a hospital.

Discussion

The purpose of this study was to explore and compare a number of variable related to NPs' work environment and time spent on nonbillable activities. In addition, the inquiry sought to determine if time spent on each of the seven nonbillable activities was significantly different considering the role of the NP as a primary care provider, the workplace setting type, and the size of the setting expressed as number of employees.

Comparisons were made in the univariate analyses between these independent work environment variables (role of PCP, workplace type, and size) and the criterion variable (self-reported total time spent) on nonbillable activities. When comparing NPs working alone to those working in facilities with more than 30 support staff, working alone was found to have a lower rate (in total minutes) of nonbillable activities. Considering that additional support staff found in physician's offices and private practice can assume some responsibilities of direct patient care, this would allow the NPs additional time to participate in nonbillable activities. The NPs working alone would have no support staff to release time for

engagement in these other important yet nonbillable activities. It is unclear who or if these activities were completed or if these responsibilities were assigned to the NPs. It would be interesting to know if these NPs working alone reported high numbers of hours worked per week and if these responsibilities were assumed by other licensed individuals. The other categories for number of support staff show an expected rate (in minutes) of nonbillable time 1.15 (1–8) and 1.04 (9–30) times greater than the reference of facilities with above 30 personnel; however, in the univariate analysis, these differences were not found to be significant.

For the variables associated with workplace (private practice; physician's office), these settings were found to have significant rate (in total minutes) increases from the reference (hospital) for nonbillable time. NPs working in physician's office and private practice settings show a rate of 1.50 and 1.34 more time spent on nonbillable activities, respectively, than NPs in hospitals. This might be expected where patients are admitted with 24/7 access to support systems that could assume some of the nonbillable activities, especially those related to communicating with patients and families. Refer Table 2 for descriptions associated with nonbillable activities. In addition, those NPs working in hospitals are less likely to be the primary care provider with the expectation of consistent long-term communication with individual patients. The physician's office and private practice settings, on the other hand, do not have access to the same support systems, and NPs would be more likely to engage in these nonbillable activities, especially in the role of PCP.

The final comparisons in the univariate analysis were completed on the role of the NPs in two categories (PCP or not a PCP). The PCP is the patient's primary partner for basic health care, wellness, and prevention. Responsibilities include but are not limited to ordering, conducting, and interpreting diagnostic and laboratory tests; prescribing pharmacologic agents and nonpharmacologic therapies; and teaching and counseling. NPs also practice in collaboration with a health care team or autonomously (Nurse Practitioners in Primary Care, n.d.). The responsibilities of the NPs in the role of a PCP can assume 90% of those same functions that are expected of a physician (Van Fleet & Paradise, 2015). It would be expected that NP in the PCP role would engage in the nonbillable activities used as variables in this study. The finding that time spent on nonbillabe activities at a rate of 1.53 times that of those NPs not serving in the PCP role might indicate limitations in practice authority from state to state or in specific positions where caring for patients might not include such activities, such as a hospital.

In the multivariate analysis of time spent by NPs on seven nonbillable activities (consultations, phone calls, emails, speaking with sales representatives, prescribing refills, reviewing laboratory results, and diagnostic images) and in each of the subcategories of the three work environment variables (support staff, workplace, and PCP status), significant differences were found in nonbillable time spent. Working alone resulted in significantly less time spent on all seven nonbillable activities when compared with workplaces with 30 or more support staff. This could indicate that without support staff, little time and attention is given to such activities and these may go undone or that working alone may not include these responsibilities.

NPs working in physician's offices or private practice were found to spend significantly more time on prescription refills when compared with their counterparts working in hospitals. This would seem appropriate because NPs working in hospitals have the support of pharmacists available to meet patient needs for refills and communication systems and electronic medical records to expedite pharmacological needs. NPs in physician's offices and private practice have no such luxury and must devote time to refilling patients' prescriptions and calling pharmacists as needed. On the other hand, NPs working in hospitals devote significantly more time to reviewing images and x-rays than their counterparts in physician's office and private practice. This is likely because of the more acute nature of illnesses, injuries, and diseases that may lead to inpatient stays and require diagnostic imaging. In addition, hospitals have these imaging abilities readily available, whereas those in physician's office and private practice are likely to have limited access to diagnostic imaging capabilities.

Workplace was also found to have a significant impact on the amount of time NP spent sending and responding to emails. Those NPs in hospitals seem to spend more time on emails significantly more than NPs in physician's offices and private practice. This finding might be expected because a primary means of communication in hospitals is via email, whereas communication in physician's offices and private practice can be done face to face by a short walk down the hallway.

NPs working in physician's offices and private practice, again, were found to spend 3.0 and 2.9 times the number of minutes with representatives from health-related companies when compared with NPs working in hospitals. Hospitals likely do not designate NPs to serve as the point of contact for these company representatives as they may have little influence on decision making concerning purchases. Whereas, in the other two settings, NPs may be the point of contact and have significant influence regarding purchases or products for their work environments.

For analyzing and interpreting laboratory values, NPs in private practice settings were found to spend significantly less time than those NPs in physician's offices and

hospitals. The rationale for this finding is unclear emphasizing the complexity of the NP's role in the various environments.

The final variables used for comparison of time spent by NPs on the seven nonbillable activities were either PCP status or not PCP status. Those NPs with PCP responsibilities were found to be significantly different in time spent on analyzing and interpreting laboratory results than those without PCP responsibilities. Those with PCP responsibilities spent 1.6 times more minutes on this activity than NP without PCP responsibilities. This finding would seem logical as NPs with PCP responsibilities may be expected to complete this activity as part of their role responsibilities, whereas those NPs without PCP responsibilities may either share this activity with other licensed staff or not have this responsibility as part of their position description.

Implications

The reasons for employing NPs have been identified in various studies as increasing patient access, improving patient safety, and improving continuity of care. Evidence is available to support the financial effectiveness of NPs related to cost regarding health outcomes (American Association of Nurse Practitioners, 2013). The limitation of the evidence seems to be associated with time spent on the nonbillable activities required in that care. Recognizing nonbillable time is crucial to improving cost efficiency. These findings can also maximize reimbursement efforts by minimizing or streamlining nonbillable activities. Ogunfiditimi et al. (2013) reported that 30%–35% of NPs and physician assistants' time was spent on nonbillable activities, suggesting that approximately 1/3 of the provider's time is not reimbursed. This could lead to delegation of PCP responsibilities to other qualified support staff or opportunities for process improvements. Recognizing and determining costs of nonbillable activities provided by NPs can be another step in increasing efficiency in health care.

Limitations

There are several limitations to this study. The survey tool used for data collection lacked reliability and validity measures. The response rate of participants was not reported. In addition, response bias is a significant limitation of descriptive studies using a survey as participants may not answer truthfully or inaccurately when reporting time spent on each activity. The available evidence on nonbillable activities is limited. This gap in the evidence suggests that more work should be done to validate NPs' productivity and the outcomes associated with patient care activities (Kuehn, 2010; Moote, Krsek, Kleinpell, & Todd, 2011). Also, a randomized nation-wise sample would be adventitious in adding generalizability to the findings. In addition, the data collection tool did not include each state's practice and licensure laws. Future studies should analyze NPs' practice authority as regulated by the states to determine relationships with nonbillable activities.

Conclusion

The Department of Veterans Affairs (2016) recently announced that three advanced practice roles were granted full practice authority when acting within the scope of their VA employment, regardless of state restrictions that limit such authority. This ruling is a major breakthrough for advanced practice nurses for improving quality and access to care for veterans. However, this breakthrough for veterans has little immediate impact on health care for those outside of the military. The time spent by NPs on nonbillable activities could be related to the policies limiting practice authority that differ from state to state (Kuehn, 2010). This could only be demonstrated by a direct comparison of physicians' vs. NPs' time spent on nonbillable activities, if NPs were practicing to the fullest extent. To support continued access to quality care, costs associated with health care activities can bring attention to the efficiency of NP in providing needed services to the population. NPs should validate their effectiveness, including costs, in disease prevention and patient care satisfaction to strengthen their position and maintain presence in health care. The nonbillable activities can be evaluated in terms of patient satisfaction with care provided by PCP but not with the cost efficiency of PCP.

As the role of the NP continues to evolve, significant changes may be on the horizon. NPs have opportunities to influence future health care reimbursement policies. The more information available to NPs regarding the cost of health-related services can add support for changes in reimbursement policies. Equally important is the ability to remain cost effective in providing care to the fullest extent of licensure. Establishing the cost efficiency of the NP in existing and changing health care models will allow them to remain at the health care table to influence changes that affect patient care.

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