How Mental Health Providers Spend their Time: A Survey of 10 Veterans Health Administration Mental Health Services

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Abstract

Background: Allocation of provider time across clinical, administrative, educational, and research activities may influence job satisfaction, productivity, and quality of care, yet we know little about what determines time allocation.

Aims: To investigate factors associated with time allocation, we surveyed all mental health providers in one Veterans Health Administration (VHA) network. We hypothesized that both facility characteristics (academic affiliation, type of organization of services, serving as a ''hub'' for treatment of severely mentally ill, facility size) and individual provider characteristics (discipline, length of time in job, having an academic appointment) would influence time allocation.

Methods: Eligible providers were psychiatrists, psychologists, social workers, physician assistants, registered or licensed practical nurses or other providers (psychology technicians, addiction therapists, nursing assistants, rehabilitation, recreational, occupational therapists) who were providing care in mental health services. A brief self-report survey was collected from all eligible providers at ten VHA facilities in late 1998 (N = 997). Data regarding facility characteristics were obtained by site visits and interviews with managers. Multilevel modeling was used to examine factors associated with three dependent variables: (i) total time allocation by activity (clinical, administrative, educational, research); (ii) clinical time allocation by treatment setting (inpatient vs. outpatient); and (iii) clinical time allocation by type of care (mental vs. physical). Licensed Practical Nurses (LPNs) were used as the reference group for all analyses because LPNs were expected to spend the majority of their time on clinical activities.

Results: Overall, providers spent most of their time on clinical activities (77%), followed by administrative (11%), and educational

(10%). Surprisingly, research activities accounted for only 2% of their time. Multilevel analysis indicated none of the facility-level variables were significant in explaining facility variance in time allocation, but individual characteristics were associated with time allocation. The model for predicting time allocation by inpatient or outpatient settings explained 16-18% of the variance in the dependent variable. In all models, provider discipline and length of time in job played an important role. Having an academic appointment was important only in the model examining total time allocation by activity type.

Discussion: These simple models explained only a small amount of variance in the three dependent variables which were intended to capture issues related to time allocation; and the low number of facilities limited our power to examine effects of facility-level factors. Our models performed better in predicting allocation of clinical time to treatment setting and type of treatment than in predicting overall time allocation. Discipline and length of time in job were significant across all models. In contrast, having an academic appointment was associated with allocating significantly less time to clinical activities and more time to administrative activities but not to any significant difference in time spent in either research or education.

Implications: While a ''gold standard'' of optimal time allocation does not exist, it is striking that research, a stated mission of the VHA, accounted for so little of providers' time. The lack of involvement of clinicians in research has implications for recruitment and retention of high-quality mental health providers in this network and for the education of future providers. Without involvement of clinicians, research conducted in the network by nonclinicians may be less relevant to ''real-world'' clinical issues. Reductions of funds available to mental health, coupled with increased clinical demands, may have prompted this pattern of time allocation, and these findings attest to the challenges faced by large institutions that are charged with balancing many often seemingly competing missions.

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Introduction

Understanding what determines how personnel allocate their time in the workplace is important for managers in all organi-

zations, but may be especially of concern in large organizations such as the Veterans Health Administration (VHA). For example, a recent study conducted within the VHA found that mental health providers with administrative responsibilities had fewer contacts with patients, and that the contact they did have was less intense.[1] A better understanding of time allocation would assist in planning for optimal training and staffing,[2-4] which in turn could be related to job satisfaction,[5-7] productivity,[8] and possibly even quality of care.[7]

This paper presents findings from a large-scale survey (N = 997) of mental health providers in the VHA regarding how provider time was allocated. A review of the literature revealed several studies that proposed methods to determine optimal workloads in mental health,[9-13] but only a few that empirically examined time allocation in a medical facility or system of care. Because these empirical studies varied in how they categorized time (e.g., some considered charting an administrative task and others considered it patient care), it is difficult to make comparisons across studies. Nonetheless, some generalizations can be made. Typically, physician house staff spends the greater amount of time in direct patient care, followed by education and administration.[4,14] In academic settings, general practitioners report a wide range of time spent in patient care (17% - 57%), administration (10% - 34%), education (20% - 33%), and research (12% - 25%).[15] Virtually no information is available regarding how physicians in private practice allocate their time. Nurses' time allocation appears to be determined primarily by whether they have management responsibilities.[2,3,6-8] Also, nurses in academic settings were found to spend more time engaged in educational activities relative to nurses in other settings.[16]

In this study we surveyed personnel at ten different VHA facilities. Data were analyzed using multilevel techniques to account for the intraclass correlation of responses by providers working at the same facility. We hypothesized that both facility characteristics (being academically affiliated, type of organization of services, whether or not the facility served as a "hub" for treatment of the severely mentally ill, and size of the facility) and individual provider characteristics (discipline, length of time in job, and whether or not the provider had an academic appointment) would influence how time was allocated.

Background

In 1996, 171 independent VHA medical centers, along with their associated outpatient clinics and nursing homes, were reorganized into 22 networks of care, called Veterans Integrated Service Networks (VISNs). In some VISNs, mental health was organized under a central service line through which mental health care was coordinated across the entire network. In effect, each network consisted of a collection of facilities accustomed to acting independently that were now asked to work together as a network of coordinated services. Under such reorganization, new issues arose, such as how to allocate resources across the network. One of the early challenges was to improve our understanding of how providers allocate their time and of the

factors influencing time allocation. This inquiry was driven in part by the need to know exactly how much time providers were spending in clinical care (as compared to educational activities, research, or administration) so that rational planning for patient load could be accomplished.

The catchment area of Network 16, one of the largest geographically in the entire VHA system, consists of all of Louisiana, most of Arkansas and Oklahoma, and parts of Alabama, Florida, Mississippi, Missouri, and Texas. At the time of data collection, this network included ten VHA medical centers and 19 freestanding clinics, with all ten of the VHA medical centers and approximately 40% of the freestanding clinics offering mental health care. Some facilities, typically the larger ones, have strong academic affiliations while others do not. The mix of provider disciplines (psychiatry, psychology, social work, etc.) varies from facility to facility largely due to historic hiring patterns as well as strengths and weaknesses of local training programs. Furthermore, mental health care is organized differently across the VISN with two models being predominant. Some facilities have separately staffed inpatient and outpatient services while others use an integrated approach in which the same providers treat a given patient regardless of inpatient or outpatient status.

Methods

Subjects and Data Sources

All mental health providers in the 10 facilities comprising VISN 16 participated in the survey (N = 997). Providers were considered eligible if they were a psychiatrist, psychologist, social worker, physician assistant, registered or licensed practical nurse or "other" provider (psychology technician, addiction therapist, nursing assistant, rehabilitation, recreational, or occupational therapist) who were providing care in mental health services. Information about individual providers was obtained from a survey conducted in late 1998. The estimated time to complete the one-page, self-report survey was approximately five minutes. The survey consisted of brief questions about discipline and academic appointment. Subjects were asked how many hours per week they were employed at the VHA and then were asked to allocate their time across four categories using percentages such that percentages summed to 100%. Respondents were provided definitions of clinical, administrative, research, and teaching activities (noted below) and were asked to apportion their time according to how they spent their time in a "typical work week." The majority of subjects (93%) were employed full-time at the VHA. For clinical activities only, providers were further asked to provide an estimate of their time allocation between inpatient and outpatient settings and between mental and physical health care provision. **Table 1** displays the number of survey respondents per facility, which varied from 15 to 220 respondents with no single facility representing more than 22% of the sample. Data regarding the characteristics of

Table 1. Survey Participants by Facility

	Psychiatrist		Psychologist		Social Worker		Physician Assistant		Registered Nurse		LPN[a]		Other Providers[b]		Total	
	n	Facility	n	Facility	n	Facility	n	Facility	n	Facility	n	Facility	n	Facility	n	%
Alexandria	6	7%	2	2%	11	12%	4	4%	25	28%	16	18%	26	29%	90	9%
Biloxi	11	11%	7	7%	8	8%	2	2%	37	37%	8	8%	26	26%	99	10%
Fayetteville	5	15%	4	12%	5	15%	1	3%	11	33%	3	9%	4	12%	33	3%
Houston	30	15%	18	9%	19	10%	12	6%	50	25%	19	10%	50	25%	198	20%
Jackson	6	8%	7	9%	16	21%	1	1%	27	35%	3	4%	18	23%	78	8%
Little Rock	17	8%	17	8%	30	14%	0	0%	64	29%	26	12%	66	30%	220	22%
Muskogee	3	20%	2	13%	6	40%	1	7%	1	7%	0	0%	2	13%	15	2%
New Orleans	24	20%	14	11%	16	13%	1	1%	21	17%	11	9%	36	29%	123	12%
Oklahoma City	15	16%	13	14%	9	10%	0	0%	31	34%	6	7%	17	19%	91	9%
Shreveport	5	10%	7	14%	4	8%	2	4%	14	28%	5	10%	13	26%	50	5%
Total	122		91		124		24		281		97		258		997	100%

Note: a. LPNs are the referent occupational group
b. Other providers include: psychology technicians; addiction therapists; nursing assistants; and rehabilitation, recreational and occupational therapists.

the ten participating facilities were obtained by two of the authors through interviews with managers and actual site visits at the facilities.

Measures

Measures were utilized at two different levels of analysis: provider and facility. There were three sets of dependent variables: (i) total time allocation by activity (clinical, educational, administrative, and research); (ii) clinical time allocation by type of care provided (mental health and physical health care); and (iii) clinical time allocation by treatment setting (inpatient and outpatient). The individual-level explanatory variables included provider characteristics (length of time in job and academic appointment) and categorical variables representing the provider's discipline. At the facility level, we created four variables to characterize each facility: whether or not the VHA facility had an academic affiliation; whether or not the facility was a hub facility (i.e., was a referral center for treatment of persons with severe mental illness); whether or not it was organized with integrated inpatient and outpatient care (i.e., the same

providers treated the patient regardless of inpatient or outpatient status); and facility size as assessed by number of providers per facility.

Clinical activities were defined as face-to-face direct care (or consultation) provided to patients, and included work with families, phone calls related to patient care, case management, treatment staffing, and documentation of clinical care. Educational activities were defined as time spent either receiving or providing education. Education could have been in the form of didactic teaching (a class or workshop) or clinical supervision. Administrative activities were defined as nonpatient contact, noneducational time spent in programmatic, staff oversight, or committee activities or hospital-wide auxiliary services. Research activities included any time involved in conducting research or writing articles or grant applications, including face-to-face time with patients solely for research purposes.

Data Analytic Procedures

It is presumed there is something about how facilities are structured, financed and managed that affects how staff

Table 2. Means and Standard Deviations of Variables Used in Multilevel Analyses

	Mean	Standard Deviation
Provider Level Variables (N=997 providers)		
Total Time Allocation by Activity Type (%)		
Clinical	76.5	23.3
Educational	10.4	10.9
Administrative	11.1	17.8
Research	2.0	6.5
Clinical Time Allocation by Treatment Type (%)		
Mental Health Care*	78.5	25.6
Physical Health Care*	19.9	23.7
Clinical Time Allocation by Setting (%)		
Inpatient	54.1	43.9
Outpatient	45.0	43.8
Provider Characteristics		
Length of Time in Job* (months)	111.4	92.9
Academic Appointment (%)	20	0.4
Facility Level Variables (N=10 facilities)		
Academic Affiliation (%)	50	0.5
Hub Facility (%)	30	0.5
Integrated Inpatient and Outpatient Care (%)	20	0.4
Facility Size (# of providers)	99.7	66.2

* Missing values: Mental Health Care (n=1), Physical Health Care (n=1), Length of Time in Job (n=7).
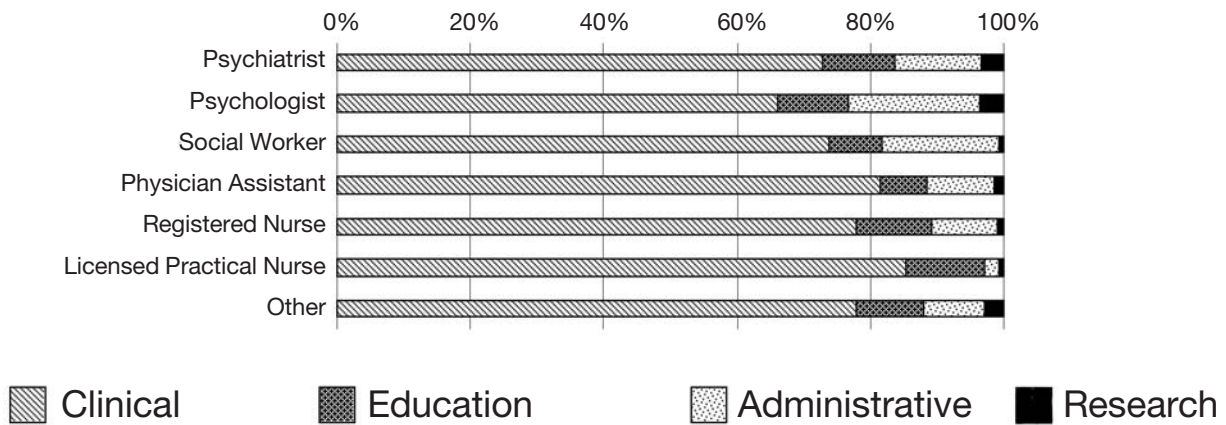
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Figure 1. Allocation of Total Time by Discipline

allocate their time across activities. To account for the intraclass correlation of responses by providers working in the same facility (the nested structure of the data), a multilevel method was used. This technique separates the distinct effects of individual-level variables from facility-level variables. The multilevel modeling (MLM) software package Hierarchical Linear Modeling (HLM) was used to analyze data.[17] MLM accommodates the nested data structure by appropriately separating out within-program and within-person variance from between-program and between-person variance.[18] MLM corrects for two common problems of traditional regression approaches (disaggregation and aggregation bias) by explicitly estimating parameters at different levels of analysis, thus accounting for the partial independence of individuals within the same group.[19] HLM, the software package, allows different numbers of respondents per unit, in our case individual providers per facility. We elected to use Licensed Practical Nurses (LPNs) as the reference group for all analyses because we expected LPNs would represent an extreme, in that they were more likely to spend the great majority of their time in clinical activities with very little time allocated to research, administration, or education. **Table 2** displays the means and standard deviations for variables used in multilevel analyses.

Results

Time Allocation

On average across the entire sample, providers spent most of their time on clinical activities (77%), followed by administrative (11%) and educational activities (10%), with very little time spent in research activities (2%). As expected, the bulk of providers' clinical time was spent providing mental health care (78%) as opposed to physical health care. Clinical time by treatment setting was split almost equally between outpatient (45%) and inpatient (55%), with slightly more time devoted to the inpatient setting across the whole sample of providers.

Figure 1 displays the total time allocation by discipline, revealing different activity concentrations for disciplines. For example, while all providers spent most of their time engaged in clinical activities, psychologists spent roughly 20% less time doing clinical work than LPNs. Psychologists tended to allocate more time to administrative tasks compared to a very small amount of time allocated to administrative duties by LPNs. These descriptive patterns suggested significant differences in time allocation based on discipline membership. To further investigate this premise while controlling for facility characteristics and other provider characteristics, we used multilevel analyses.

Multilevel Analysis

Table 3 displays the final results of the multilevel models. None of the facility level variables included in the final models were significant predictors of the between-facility variance in time allocation. As **Table 3** indicates, individual characteristics were important predictors of all three of the dependent variables studied. The model for predicting time allocation by inpatient or outpatient setting explained more of the variance (16-18%) in the dependent variable than did the other two models. In each of the models, provider discipline and length of time in job played an important role. Whether or not an individual provider had an academic appointment was important only in the model examining total time allocation by activity type.

Regarding the relationship of discipline to provider time allocation, we found roughly an equal percentage of clinical time was spent by LPNs, psychiatrists, physician assistants (PAs) and registered nurses (RNs). Registered nurses, LPNs and ''other'' providers spent significantly more time in educational activities than psychiatrists (-5.203, $p \leq .05$), psychologists (-4.308, $p \leq .05$), physician assistants (-7.855, $p \leq .05$), and social workers (-4.942, $p \leq .05$). Social workers (13.230, $p \leq .001$), psychologists (11.565, $p \leq .05$), RNs (6.428, $p \leq .05$) and ''other'' providers (6.915, $p \leq .05$) spent more time doing administrative tasks than PAs, LPNs or psychiatrists. These same providers (with the exception of

Table 3. Final Multilevel Model: The Effects of Facility and Individual-Level Variables on Time Allocation by Activity Type, Treatment Type and Setting

Predictor Variable	Total Time Allocation by Activity Type				Clinical Time Allocation by Treatment Type		Clinical Time Allocation by Setting	
	Clinical	Education	Admin.	Research	Mental Health	Physical Health	Inpatient	Outpatient
	Effect (SE)	Effect (SE)	Effect (SE)	Effect (SE)	Effect (SE)	Effect (SE)	Effect (SE)	Effect (SE)
Overall Intercept	75.637 (4.417)	9.827 (2.295)	13.047 (2.047)	1.320 (1.053)	88.539 (4.368)	10.448 (4.307)	37.485 (13.263)	62.458 (13.491)
Facility-Level Variables								
Academic Affiliation	-2.680 (5.568)	0.961 (2.920)	1.019 (2.476)	0.742 (1.302)	-6.464 (5.459)	6.396 (5.426)	-0.252 (17.458)	-1.237 (17.770)
Hub Facility	4.324 (5.144)	-3.952 (2.714)	0.667 (2.150)	-1.457 (1.184)	0.778 (5.001)	0.945 (5.011)	19.057 (16.494)	18.860 (16.794)
Primary Mental Health Facility	-3.126 (5.642)	3.065 (2.942)	0.497 (2.603)	0.447 (1.337)	-8.128 (5.563)	8.801 (5.500)	12.220 (17.279)	-12.309 (17.582)
Facility Size	+0.009 (0.044)	0.008 (0.023)	-0.021 (0.019)	.005 (.010)	-0.036 (0.043)	0.026 (0.043)	0.053 (0.139)	-0.052 (0.142)
Individual-Level Variables								
Length of Time in Job (Months)	0.023** (0.008)	-0.005 (0.004)	-0.012 (0.006)	-0.006** (0.002)	-0.025** (0.008)	0.014 (0.008)	0.047** (0.013)	-0.052 (0.013)**
Academic Appointment	-16.056*** (2.320)	3.607** (1.090)	10.374*** (1.801)	2.075** (0.675)	0.032 (2.512)	1.606 (2.274)	-1.370 (3.980)	2.361 (3.996)
Psychiatrist	1.625 (3.451)	-5.203** (1.621)	3.113 (2.678)	0.466 (1.004)	5.506 (3.736)	-8.576* (3.382)	-45.927*** (5.920)	43.353*** (5.943)
Psychologist	-8.374* (3.485)	-4.308** (1.636)	11.565** (2.704)	1.117 (1.013)	16.674** (3.772)	-18.629*** (3.414)	-56.480*** (5.977)	55.905*** (6.000)
Social Worker	-7.539** (3.025)	-4.942** (1.421)	13.230*** (2.348)	-.748 (0.880)	12.884** (3.275)	-17.421*** (2.964)	-51.163*** (5.189)	48.611*** (5.209)
Physician Assistant (PA)	2.503 (5.041)	-7.855** (2.367)	5.193 (3.912)	0.158 (1.466)	-40.554*** (5.457)	39.934*** (4.939)	-34.003** (8.647)	33.795** (8.680)
Registered Nurse (RN)	-5.128 (2.606)	-1.149 (1.224)	6.428** (2.022)	-0.151 (0.758)	-0.091 (2.821)	-0.628 (2.554)	-7.187 (4.470)	6.721 (4.488)
Other Providers	-6.478** (2.602)	-2.243 (1.222)	6.915** (2.020)	1.807* (0.757)	0.561 (2.817)	-3.168 (2.550)	-28.657*** (4.464)	27.598*** (4.481)
Model Summary								
% variance explained by final model	7%	2%	9%	3%	12%	15%	18%	16%

Note: LPNs are the referent occupation group in the analyses. *p≤.10; **p≤.05; ***p≤.001

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Table 4. Chi Square Tests for Variables in the Final Model

Time Allocation	X^2	df	p value
Education	51.44	5	≤.001
Clinical	34.31	5	≤.001
Administrative	9.08	5	.105
Research	19.01	5	.002
Mental Health	30.67	5	≤.001
Physical Health	38.21	5	≤.001
Inpatient	76.80	5	≤.001
Outpatient	80.44	5	≤.001

RNs) spent less of their overall time providing clinical care.

RNs, LPNs and ''other'' providers were similar to each other in their split of time between mental and physical health care. PAs (39.934, p≤.001) spent more time than all other mental health workers providing physical health care while psychologists (16.674, p≤.05) and social workers (12.884, p≤.05) spent more time providing mental health care than all other occupational types. Regarding allocation of clinical time between inpatient and outpatient settings, RNs and LPNs spent far more of their time in inpatient settings than all other providers.

Other individual characteristics related to these dependent variables included tenure on the job and academic appointment. As tenure in current job increased, providers spent more time in clinical activities (.023, p<.05). Proportionally more clinical time was spent on inpatient care (.047, p≤.05) and less on mental health care (-.025, p≤.05) relative to physical health care as tenure increased. Those providers with academic appointments spent less time providing clinical care (-16.056, p≤.001) and more time in all other activity areas, particularly administrative (10.374, p≤.001).

As noted above, relatively little of the total variance in the dependent variables was explained by these models, and explanatory power was far greater at the individual level of analysis than the facility level of analysis. A significant amount of variance in time allocation remained between facilities as revealed by chi square tests in the final models (See **Table 4**).

Discussion

Overall, mental health providers in this VISN allocated the majority of their time (77%) to clinical care. At the opposite extreme, only 2% of all providers' time was allocated to research activities. This finding is noteworthy given that research is one of the VHA's central missions and that five of the 10 facilities in this VISN are academically affiliated. This finding may be the result of a trend in this VISN, and perhaps the VHA as a whole. Examination of trends in VISN 16 over the past several years shows that the demand for mental health services has increased (e.g., the number of individual patients seeking mental health care has increased

by 16%) while resources for mental health services have decreased (e.g., the number of mental health positions has decreased by 24%).[20] To meet increased clinical demands, clinicians who at one time may have been engaged in research may be allocating more of their time to direct clinical care.

Many organizations, not only the VHA, struggle with how to balance multiple missions that often compete with each other. For example, the Commonwealth Fund Task Force on Academic Health Centers is now recommending organizational changes that augment current capacity to supervise research, clinical, and educational activities.[21]

The finding that only 2% of providers' time was spent in research activities also has implications in terms of recruitment, retention, and succession planning for mental health providers in this VHA network. If one believes academic or research-oriented clinical environments encourage providers' critical thinking, development of new ideas, and acquisition of new knowledge, and also create a more stimulating work environment, then such a trend could potentially have a deleterious effect on both overall quality of care and provider retention. It is likely that top clinical candidates are attracted to institutions with strong research programs. Further, when clinical researchers are not well-supported by their institutions, younger providers lack sufficient numbers of role models and are discouraged from pursuing research careers.[22] This is a critical issue for the universities with which VHAs affiliate since most academically affiliated VHAs have key roles in medical student and resident education.

It is relevant that this VHA network is located in the southern United States where there is a relative undersupply of psychiatrists.[23,24] While providing clinical care is clearly a priority for any system of care, a key concern in this area of the United States is recruitment and retention of high-quality providers. If the VHA is to be competitive in attracting high-quality providers, it must not only be competitive in terms of salary but also in terms of offering a stimulating work environment that includes opportunities for professional growth and education.[5,25] Within this network, nursing staff and other providers (e.g., addiction counselors, technicians, and other therapists) report engaging in a greater variety of activities, but this pattern did not seem to hold true for other

types of providers. The value of educational and research activities in attracting and retaining high-quality psychiatrists and psychologists may be greatly underestimated in this network. In fact, in a 2002 national survey of VHA researchers, 79% stated that research opportunities and support were extremely important for recruiting and retaining high-quality VHA clinicians.[26]

While mental health services in virtually all of the VISN 16 facilities were headed by psychiatrists, we found that most administrative activities were actually performed by social workers and psychologists. In fact, psychiatrists, along with physician assistants and LPNs, carry significantly less administrative burden than providers in other disciplines. It is possible that mental health services were organized to maximize the clinical contribution of the highest-cost mental health providers (physicians) by allocating their time primarily for direct patient care. Few of the facilities employed advance practice nurses or physician assistants with prescribing privileges, so psychiatrists almost exclusively prescribed medication in specialty mental health settings in this VISN. Because it may be difficult to recruit and retain psychiatrists in the southern United States,[23,24] their clinical and prescribing skills may be a scarce and expensive commodity while other skills (administrative and educational) could be obtained from providers of all disciplines.

The fact that so few clinicians engaged in research in this network also has implications for the quality of research. If clinicians spend so little time in research, then most research in this network is likely to be conducted by nonclinicians. Incorporation of clinicians into research endeavors might result in a greater research emphasis on relevant clinical and service delivery issues. This network might consider creating a broader team approach to mental health research that incorporates clinicians more effectively into research. Indeed, the newly established VHA Mental Illness Research Education and Clinical Center (MIRECC) in this network is one organization working to support this kind of activity.

Among all providers, 10% of the typical work week (roughly half a day each week) was spent either providing or receiving education. While there is no standard defining how much education is optimal, it is noteworthy that the nursing staff (RNs and LPNs) and "other" providers relative to the remaining disciplines were far more likely to engage in educational activities than were psychiatrists, psychologists, and social workers. This, too, might have implications for quality of care and provider retention.

Discipline of providers was a key individual predictor of time allocation, but some other provider characteristics were also important. For example, having an academic appointment was associated with spending more time in administrative, educational, and research activities, and less time in clinical care. Longer tenure on the job was associated with providing more clinical care, specifically more physical health care on inpatient units, and less research time. These findings may suggest there are two "profiles" of providers, younger providers who are more academically involved and engaged in a variety of activities, and older providers whose primary activity is to provide inpatient care. Since these older

providers may be closer to retirement, it will be important that their inpatient jobs be made "attractive" to younger providers.

We were surprised to find that facility-level variables were not significant. This may be due to the low number of facilities and the fact that there was little variation generally across facilities. In addition, there are likely to be key facility characteristics (such as organizational climate or culture) that were unmeasured.

Limitations

The strengths of this research include a 100% response rate and a large provider sample size. However, this research has a number of limitations. The self-report survey was required to be very brief, no longer than one page, and its reliability and validity have not been determined. A number of potentially important variables were not included in our survey, such as providers' management status or educational preparation, and organizational climate or culture of facilities. It is possible that omission of such variables affected our results. For example, if we had obtained information about the extent to which respondents had research skills or had previously engaged in research, we might have been able to better interpret our findings regarding research. Or, if we had obtained information about job satisfaction, we would have a better idea of how satisfaction might influence time allocation. Because of the small facility sample size, we could not fully explore the between-facility variation. At best, we controlled for the effects of facility-level characteristics as a nuisance factor. Our study did show there was a larger amount of variance between facilities in all time allocation measures, with the exception of administrative time. Future studies that incorporate facility-level variables should utilize a larger facility sample. Finally, it is important to note that our models explained very little of the variance overall in our dependent variables. Future investigators might want to consider using a conceptual rather than empirical approach to such research so that additional factors or constructs could be appropriately measured and included in analyses.

Because we achieved a 100% response rate, our results are generalizable to this network of VHA care and possibly to other VHA networks in the United States. It is unclear, however, to what extent the findings regarding time distribution are generalizable to other publicly or privately funded systems within the U.S. or outside the U.S. Within the U.S., funding streams to some extent may dictate how providers spend their time. For example, in contrast to the VHA, it is rare to find psychiatrists in major administrative roles in non-VHA public mental health systems in the U.S. And it is possible that the mechanisms of funding in other public mental health systems (e.g., in China, Great Britain, or Canada) also influence how providers spend their time.

However, regardless of the payor or the country, this paper highlights issues that are common to most, if not all, health care delivery systems. Health care delivery systems commonly grapple with issues of labor supply of specialists and their retention. The VHA might look to other efforts, both within and outside of the U.S., as potential models to

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reduce the ''brain drain'' of specialists and to improve job satisfaction and morale.

In conclusion, a survey of mental health providers in one VHA network in the southern United States found that very little time overall (2%) was devoted to research activities while more than three-quarters of time (77%) was devoted to clinical care, with administrative (11%) and educational activities (10%) falling between these two extremes. While a ''gold standard'' of optimal time allocation does not exist, it is striking that research, a stated mission of the VHA, receives so little attention, especially since five of the 10 VHA facilities in the survey have academic affiliations and 20% of providers overall hold academic appointments. It is also noteworthy that larger variation existed between facilities in time allocation, yet we were unable to explain this between-facility variation. Subsequent studies are needed to better elucidate this variation.

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