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Methods

Activities and Compensation of Advanced Heart Failure Specialists: Results of the Heart Failure Society of America (HFSA) Survey

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ABSTRACT

Background: In the current era, where advanced heart failure (AHF) has become an American Board of Internal Medicine–certified subspecialty, new data are needed to benchmark and value levels of clinical effort performed by AHF specialists (AHFMDs).

Methods and Results: A 36-question survey was sent to 728 AHFMDs, members of the Heart Failure Society of America, and 224 (31%) responded. Overall, 56% worked in academic medical centers (AMCs) and were younger (48 ± 9 y vs 52 ± 10 y; $P < .01$) and were represented by a higher proportion of women (34% vs 21%, $P < .01$) compared with non-AMCs. The percentage of time in clinical care was lower in AMCs (64 ± 19% vs 78 ± 18%; $P = .002$), with similar concentration on evaluation and management services (79 ± 18% in AMCs vs 72 ± 18 % in non-AMCs; $P =$ NS). The majority of nonclinical time was spent in program administration (10% in both AMCs and non-AMCs) and education/research (15% in AMC vs 5% in non-AMCs). Although 69% of respondents were compensated by work-relative value units (wRVUs), only a small percentage knew their target or the amount of RVUs generated. The mean annual wRVUs generated were lower in AMCs compared to non-AMCs (5,452 ± 1,961 vs 9,071 ± 3,484; $P < .001$). The annual compensation in AMCs was lower than in non-AMCs (45% vs 10% <$250,000 and 17% vs 61% >$350,000; $P < .001$) and the satisfaction with compensation was higher in non-AMCs.

Conclusions: AHFMDs' compensation is largely dependent by practice type (AMC vs non-AMC) and clinical productivity as measured by wRVUs. These data provide an opportunity for benchmarking work effort and compensation for AHFMDs, allowing distinction from segments of cardiologists with greater opportunity to accrue procedural wRVUs. They also show several differences between AMCs and non-AMCs that should be considered when formulating work assignment and compensation for AHFMDs. (*J Cardiac Fail 2015;■:1–6*)

Key Words: Compensation, relative value units, heart failure specialists, academic medical center.

Heart failure (HF) is a chronic condition with a substantial and growing burden to society, and its management requires increasingly specialized clinical interventions. Attracting and training new cardiologists to specialize in advanced heart failure (AHFMDs) is of paramount importance. Unfortunately, a key determinant of attracting young cardiologists to specialize in HF is the current level of compensation for existing specialists. The first important step in helping to define the appropriate compensation level is to clearly differentiate the AHFMDs from general cardiologists that treat patients with HF. This recognition takes

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into account the ability to manage patients requiring advanced therapies such as ventricular assist devices (VADs) and heart transplantation. The American Board of Internal Medicine (ABIM) has approved the certification of specialists in advanced heart failure and transplant cardiology, and the first such examination took place in 2010.[1] There are presently ~800 physicians who have taken and passed the Board examination. Future testing will be carried out biannually starting in 2016.

The changing environment in HF (new ABIM certification, increasing number of VADs implanted for destination therapy, and associated reimbursement) and health care economics (including penalties for HF readmissions, decreasing reimbursement for imaging and some interventional procedures, implementation of accountable care organizations) as well as the increasing numbers of advanced HF programs outside of traditional academic medical centers (AMCs) make it imperative that a current understanding of the activity, productivity, and compensation of AHFMDs takes place for benchmarking purposes.

The purpose of the present study was to characterize the activities of AHFMDs and the methodology used at various institutions (AMCs and non-AMCs) to reflect the work effort and compensation of the AHFMDs, so that AHFMDs receive appropriate compensation for their efforts.

Methods

Under the auspices of the Heart Failure Society of America (HFSA), we conducted a survey of its members who identified as AHFMDs. We developed 2 questionnaires: a comprehensive 36-question survey (Appendix 1) that was sent in late 2012, and a 2nd brief 6-question survey that was sent in late 2013 (Appendix 2). Because most practices were transitioning to a work-relative value units (wRVUs)–based compensation model in 2012–2013, the purpose of the 2nd survey was to capture updated information in that regard. The questionnaires captured detailed data on the physicians' institutions, including services offered, such as cardiac transplantation or VAD implantation. In addition, it queried the activities of AHFMDs regarding the percentages of time allocated to clinical care (including evaluation and management [E&M] services, specialized therapeutic and diagnostic procedures, and other associated procedures, such as imaging), research, education, administrative/program development, and outreach. Finally, it captured comprehensive data on compensation schemes, including wRVUs and salary data. To keep the survey to a reasonable length and because other structured surveys addressed practice and work structure (eg, number of hours worked per week, midlevel providers and nursing support, etc), our survey did not collect that information. The questionnaires were pretested by the members of the HFSA Advocacy Committee before they were distributed to the AHFMDs. The surveys were deployed with the use of the Survey Monkey web-based service, and the HFSA staff administered and tracked the questionnaires and, because the surveys were blinded, sent reminder e-mails to potential respondents.

Results of the surveys were analyzed with descriptive statistics (means or medians for continuous variables and proportions for binary variables) and comparisons were made with the use of *t* tests for continuous variables and chi-square for categoric variables. Regression analysis was used to explore the relationship of clinical productivity, measured by RVUs, with the percentages of clinical effort and E&M services.

Results

Of the 728 questionnaires distributed, 224 (31%) and 174 (24%) were completed and returned for the 1st and 2nd surveys, respectively; only 30 respondents overlapped in the 2 surveys. Fifty-six percent worked at AMCs, and compared with the AHFMDs working at non-AMCs they were younger, included a higher proportion of women, and were more likely to be in practice for <5 years (Table 1). In both practice settings, nearly 80% of respondents were ABIM certified in advanced heart failure and transplantation. More respondents working in AMCs were taking care of both VAD and transplant patients compared with respondents working in non-AMCs (94% vs 86%, respectively; $P < .05$; Table 1).

In general, the distribution of HF patients was similar between AMCs and non-AMCs, but AMCs tended to care for a higher number of VAD and heart transplant patients than non-AMCs (Table 2). Although non-AMCs tended to see higher numbers of new HF patient referrals, AMCs tended to implant a higher number of VADs and perform a higher number of heart transplantations annually than did non-AMCs (Table 2).

The percentage of time AHFMDs allocated to clinical care was lower in AMCs compared with non-AMCs (64 ± 19% vs 78 ± 18%; $P = .002$), whereas the percentage of time spent on education and research was higher at AMCs (Table 3). Table 3 provides a breakdown of the

Table 1. Demographics of Advanced Heart Failure Specialists (n = 224)

	Academic Medical Centers (n = 126)	Nonacademic Medical Centers (n = 98)	*P* Value
Age, y			.035
Mean ± SD	48 ± 9	52 ± 10	
Median (range)	47 (35–70)	51 (36–85)	
Sex (% women)	34	21	.001
ABIM certified (%)	78	80	NS
Time in practice (%), y			<.01
<5	39	23	
6–10	15	18	
>11	46	59	
Type of patients seen (%)			.021
VAD only	6	14	
Transplant and VAD	94	86	
US geographic region (%)			.039
Northeast	29	19	
Southeast	18	20	
Midwest	26	36	
Southwest	8	5	
West	19	20	

ABIM, American Board of Internal Medicine; VAD, ventricular assist device.

Table 2. Practice Characteristics

	Academic Medical Centers (n = 126)	Nonacademic Medical Centers (n = 98)	*P* Value
Total HF patients followed in practice (%)			.065
<1,000	27	28	
1,001−2,000	37	32	
2,001−30,00	21	15	
>3,001	15	25	
New HF patients evaluated/year in practice (%)			.006
<100	15	9	
101−200	32	28	
201−300	26	20	
>301	27	43	
Total VAD patients followed in practice (%)			<.01
<40	56	69	
41−80	27	13	
81−100	5	7	
>101	12	11	
New VADs implanted/year (%)			<.001
<20	44	67	
21−40	35	15	
41−50	9	5	
>51	12	13	
Total heart transplant patients followed in practice (%)			<.001
<100	35	60	
101−200	15	12	
201−300	23	12	
301−400	16	7	
>401	11	9	
New heart transplantations performed/year (%)			<.001
<20	60	79	
21−40	30	9	
41−60	6	6	
>61	4	6	

HF, heart failure; VAD, ventricular assist device.

clinical activities of the AHFMDs, with the majority being dominated by E&M services. Interestingly, there was a discrepancy between the time spent on nonclinical activities and the amount of time that was reported to be "protected" by the institution in both practice settings (Table 3). For example, although 48% of AMC AHFMDs reported no protected time, AHFMDs at AMCs reported, on average, that 36% of their time was spent on nonclinical duties.

Although clinical productivity was assessed by wRVUs in the majority of respondents, only one-third in both practice settings rated their knowledge of the concept as very good/excellent, with 1 in 5 indicating poor understanding (Table 4). Moreover, only 20% of respondents knew their wRVU target, fewer than one-half knew how many wRVUs they generated the previous year, and fewer than one-half knew the amount of dollars reimbursed per wRVU by their employer. There were no significant demographic or practice characteristic differences between AHFMDs who knew and reported their wRVUs (n = 99) and those who did not know their wRVUs (n = 125). The average annual wRVUs per AHFMD were 5,452 (±1961) for AMCs and 9,071 (±3484) for non-AMCs (P = .003), unadjusted for percentage of clinical time. By regression analysis, a 10% increase in clinical time was associated with an increase of 525 (95% confidence interval 171−878) in the number of wRVUs generated. Overall, the proportion of AHFMDs that receive more money per wRVU was higher in the non-AMCs than in the AMCs (Table 4). Interestingly, there was a strong correlation between the amount of wRVUs generated and compensation for the AHFMDs working in AMCs (r^2 = 0.43, P = .032; Fig. 1), but not for those working in non-AMCs (r^2 = 0.04; P = .112). This raises the possibility that the AHFMDs working in non-AMCs were perhaps perceived as bringing value to the health systems in some way other than by generating wRVUs. In both cases, there was a modest correlation between the amount of time spent in E&M activities and wRVUs generated (r^2 = 0.15 [P = .022] for AMCs; r^2 = 0.14 [P = .039] for non-AMCs).

The level of compensation was significantly less in the AMC setting, where almost one-half of the respondents had a total compensation of <$250,000 and <20% had a total compensation >$350,000. In comparison, in the non-AMC setting fewer than 10% of respondents had a

Table 3. Work Characteristics

	Academic Medical Centers (n = 126)	Nonacademic Medical Centers (n = 98)	*P* Value
Amount of time (%) spent in clinical duties, mean ± SD	64 ± 19	78 ± 18	.002
% of clinical time			NS
E&M services, mean ± SD	79 ± 18	72 ± 18	
Noninvasive activities (imaging), median (IQR)*	0 (0−11.5)	10 (0−20)	
Invasive activities (coronary angiography/interventions, right heart catheterization/endomyocardial biopsy, cardiac electrical implantable devices), median (IQR)	10 (0−20)	10 (0−20)	
Amount of time spent in administrative duties (%), median (IQR)	10 (5−15)	10 (3−10)	NS
Amount of time spent in education/research activities (%), median (IQR)*	15 (10−30)	5 (0−15)	
Amount of time spent in outreach activities (%), median (IQR)	0 (0−2)	0 (0−5)	
Amount of protected time (%)			<.001
None	48	72	
For administrative duties	20	14	
For education/research	27	4	
For outreach activities	5	10	

E&M, evaluation and management; IQR, interquartile range; NS, nonsignificant.
*P < .01 for comparison between academic and nonacademic medical centers.

Table 4. Work Compensation

	Academic Medical Centers (n = 126)	Nonacademic Medical Centers (n = 98)	*P* Value
Knowledge of RVU (%)			NS
Excellent/very good	28	35	
Good/fair	54	44	
Poor/don't know	18	21	
Know own RVU target for 2012 or 2013 (%)	21	23	NS
Know own RVUs generated in 2012 or 2013 (%)	44	45	NS
Own RVU target for 2012 or 2013 (unadjusted), mean (SD)	5,658 ± 1,782	7,926 ± 2,605	<.001
Own RVUs generated in 2012 or 2013, mean (SD)	5,452 ± 1,961	9,071 ± 3,484	<.001
Activities required for total compensation (% respondents)			
Clinical activities	100	100	NS
Administrative duties	58	75	<.001
Education/research	77	36	
Outreach activities	15	27	
$/wRVU paid to physicians (%)			NS
<25	9	1	
26–35	9	3	
36–50	13	17	
>51	11	22	
Don't know	58	57	
Total compensation in 2012 (%)			<.001
<200,000	23	2	
201,000–250,000	22	7	
251,000–300,000	19	8	
301,000–350,000	13	8	
>351,000	17	61	
Don't want to answer	6	14	
Satisfaction with total compensation (%)			<.001
Excellent/very good	20	51	
Good/fair	60	29	
Poor/don't know	20	20	

RVU, relative value unit; wRVU, work-relative value unit.

total compensation of <$250,000 and 61% had a total compensation of >$350,000 (Table 4). Besides the clinical work, the level of total compensation was determined by other activities (administrative duties, research/education, and outreach activities), with significant differences between AMCs and non-AMCs (Table 4). Finally, only 20% of the AHFMDs working in AMCs were extremely/very happy with the level of compensation, compared with 51% of those working in non-AMCs.

Discussion

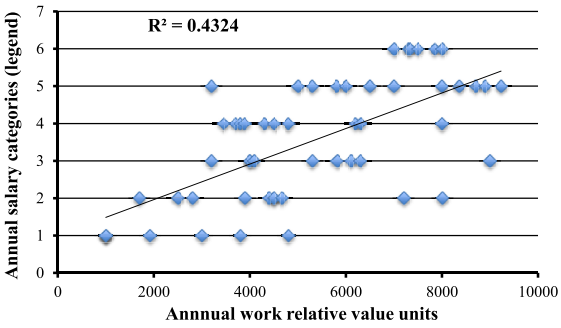
This paper presents the first detailed picture of the current landscape of advanced HF practice in both AMC and non-AMC settings. Besides the variations in demographics (younger, more women in AMCs) and practice patterns (more HF patients overall but generally fewer VAD implants or heart transplants in non-AMCs), the survey identifies several major differences in work-time allocation patterns and compensation schemes between AHFMDs working in AMCs compared with non-AMCs.

Not surprisingly, the AHFMDs working in AMCs generally had a lower percentage of their time spent in clinical activities (64% vs 78%), with the remainder being spent in research, education, and administrative activities, which is consistent with the mission of an AMC.

Second, the productivity measured by wRVUs was 40% higher for the AHFMDs working in non-AMCs. Even after adjusting for clinical time, this difference was maintained (8,430 ± 3,638 in AMCs, 12,114 ± 5,456 in non-AMCs; $P = .002$). Of note, the wRVUs generated by AHFMDs were similar to the national average for noninvasive cardiologists (5,780 wRVUs in AMC, 7,250 wRVUs in non-AMCs), a frequent benchmark used for formulating expectations for AHFMDs.[2] Interestingly, there was only a modest correlation between the amount of time spent in E&M services and wRVUs generated for both AMC and non-AMCs. Moreover, if one accounts for the percentage of clinical time, the time spent in E&M services was actually fairly similar between the AMC and non-AMC AHFMDs (50% compared with 56% of overall time for AMCs and non-AMCs, respectively; P = NS). Therefore, one can postulate that the wRVUs differences are a result of the activities performed in the rest of the time (mostly nonclinical for AMCs compared with mostly clinical imaging/procedure oriented for non-AMCs).

Third, the wRVUs generated in the non-AMC setting were better compensated ($/wRVU) compared with AMCs. The above facts are concerning for AHFMDs working in AMCs, because there is a significant correlation between the compensation and wRVUs generated in this setting.

Although 52% of the AHFMDs working in AMCs reported "protected" time, and 77% of respondents in this



Salary categories: 1 = $100,000 to 150,000; 2 = $151,000 to 200,000; 3 = $201,000 to 250,000; 4 = $251,000 to 300,000; 5 = $351,000 to 400,000; 6 = $401,000 to 450,000; 7 > $451,000.

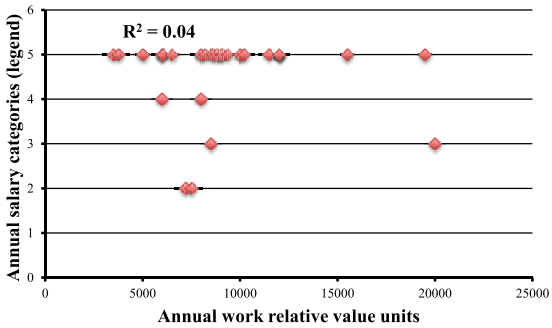


Fig. 1. Correlation between amount of work-relative value units generated and compensation for advanced heart failure specialists working in (top) academic medical centers and (bottom) nonacademic medical centers.

setting acknowledged that education and research activities were required as part of their compensation, it is unclear how these activities were supported in an environment that bases compensation on the amount of clinical wRVUs generated. In addition, the discrepancy between the ''protected'' time reported by the respondents and the actual time spent in nonclinical activities attests to the inaccuracy of reporting and accounting for ''protected'' time and related activities.

Finally, only 20% of the AHFMDs working in AMCs were extremely/very happy with their level of compensation, compared with >50% of those working in non-AMCs. This finding has profound consequences as it may affect the choices made by graduating fellows in pursuing a career in academic medicine and may be a factor that chiefs of cardiology need to take into account to retain their midlevel and senior AHFMDs in AMCs.

Relative value units were developed in 1988 and were designed to account for physicians' work effort.[3] Because wRVUs provided a uniform metric for clinical services, they became the prevailing method for setting fee-for-service payments for Medicare and private insurance.[4] However, many important physician activities—including managing systems of care, coordination, delivering individual patient care in new ways, and program building and expansion—are not measurable in the current RVU system. Although salaried physician models have been used as a potential solution, they often incorporate wRVUs to account for physicians' productivity. This issue becomes of paramount importance for those taking care of advanced HF patients. Owing to the complexity of HF patients' condition, the amount of time spent in taking care of them in the clinical arena (eg, repeated daily in-hospital encounters, a good proportion of daily activities spent in intensive care units, extended office visits), as well as behind the scenes (eg, coordinating transfers from outside institutions, comanaging patients with referring physicians, managing immunosuppression medication for heart transplants, adjusting VAD parameters, supervising activities by nurse coordinators and nurse practitioners, etc) is not sufficiently captured in the current reimbursement scheme. Moreover, consultations requested by general cardiologists and performed by AHFMDs are currently not reimbursed (for inpatients) or are reimbursed as follow-up visits (for outpatients), owing to the lack of a separate specialty taxonomy code for AHFMDs. This is very different than the electrophysiology specialists, for example, who have a separate taxonomy code that allows them to be properly reimbursed for their specialty consultations. Finally, the AHFMDs contribute enormously to the overall program by building relationships, growing business, driving quality and outcomes, driving efficiencies, reducing costs, and optimizing documentation and revenue capture.[5] Yet, the generation of downstream revenue is often not attributed to the activities of the AHFMDs.

Although it provided important information, the present study was limited by a relatively low participation rate and missing data about wRVUs in 55% of respondents, which limited some of the analyses (eg, regional variation patterns, age/sex disparities, etc). Future studies should be conducted to understand and to better inform about these variations and provide data that can be used in setting up new compensation benchmarks. Benchmarking the AHFMD wRVU targets against published wRVU targets for noninvasive cardiologists may be inappropriate, given the variability in clinical duties, and should be further explored.

The assessment of the percentage of clinical time is fraught with problems and inaccuracies even when done prospectively, yet the estimates presented have face validity compared with actual experience at our institutions.

Physician wRVUs are currently based on the relative levels of perceived time, skill, and intensity associated with clinical activities, but other elements could be emphasized to align physicians' work efforts with high-value clinical services. For institutions where RVU-based compensation continues to be desired, the present data provide a 1st approximation for benchmarking wRVU targets for AHFMDs, accounting for the fact that they conduct many essential nonreimbursable activities, and separating them from expectations appropriate for typical noninvasive cardiologists.

Moving beyond wRVUs, it is more desirable to create a new financial construct that incorporates enterprise-wide value and performance of the HF program. Depending on

the employment structure, compensation may be based, for example, on combined technical and professional contribution margin or daily reimbursement for occupied advanced HF inpatient bed, leading to a more strongly aligned health care organization. Such a construct requires bridging the financial gap within organizations between hospital and physician groups.

The absence of physician understanding and insight into the RVU system, particularly as used in their own institutions, is both an area of concern and a potential opportunity for the HFSA to provide education to physicians in this area.

Finally, physician satisfaction with compensation should be complemented by exploration of issues relative to work-life balance and quality of life, because these factors would affect the desirability of pursuing a career in advanced HF cardiology.

Conclusion

This survey comprehensively examined the demographics of AHFMDs, their work effort, practice patterns, and compensation schemes at AMCs and non-AMCs. These data provide, for the 1st time, an opportunity for benchmarking work effort and compensation for AHFMDs, in both academic and private settings, allowing distinction from noninvasive cardiologists who have greater opportunity to accrue procedural RVUs.

Disclosures

None.

Supplementary Data

Supplementary data related to this article can be found online at http://dx.doi.org/10.1016/j.cardfail.2015.08.340.

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