Articles

Uncompensated Care Provided by Private Practice Physicians in Florida

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While a great deal of attention has been paid in recent years to establishing the magnitude and characteristics of uncompensated care in hospitals, comparatively little research has been undertaken to study physician uncompensated care. This article reports the results of a prospective patient-specific study of uncompensated care in Florida. Of 4,042 cases examined, 26.2 percent had charges voluntarily reduced below the usual and customary charge at the time of service. However, only 13.5 percent of those reductions were attributed to charity. Overall, 10.4 percent of the total billed amount was left unresolved. When payment source was considered, it was found that self-pay patients accounted for 30.6 percent of the cases but accounted for 52.0 percent of the unresolved amounts. Further analysis indicated that the self-pay patients were 35.5 times more likely to leave an outstanding balance than individuals with some type of insurance coverage. Odds of unresolved balances were also calculated as a function of income, specialty type, practice size, and type of visit.

The research reported here was supported in part by a grant from the Florida Medical Association. The recommendations and opinions reported here are those of the authors and not of the funding organization.

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In the past several years a considerable amount of attention has been devoted to determining the dimensions of the burden of uncompensated health care borne by providers. Several recent studies have documented the extent of unremunerated care in various hospital settings (Sloan, Blumstein, and Perrin 1986), while others have focused on the characteristics of hospital patients who leave uncompensated care balances (Duncan and Kilpatrick 1987; Louis Harris and Associates 1985).

The literature on uncompensated care in office-based physician practices is less extensive. Ohsfeldt (1985) examined self-reported data on charity care and bad debt for fee-for-service physicians with the American Medical Association's Socioeconomic Monitoring System (SMS). Using 1982 national data, he found that the 746 responding physicians reduced billings by approximately 9 percent. Ohsfeldt states that the reported level of charity care was "implausibly high," perhaps due to response bias. With regard to bad debt, he found for 826 physicians responding that uncollected billings averaged 6.3 percent in 1982. While providing information on the relationship between uncompensated care and the characteristics of the medical practices, the Ohsfeldt study was unable to examine the characteristics of the patients who generated the uncompensated care.

Sloan, Cromwell, and Mitchell (1978) found in a 1977 nationwide study of physicians' offices that the average reduced fees for charity care amounted to 2.7 percent of gross billings and that bad debts accounted for an additional 8.4 percent of gross billings. These results are based on self-reported data from a national probability sample of physicians' practices. That the 15.3 percent in combined total write-offs found by Ohsfeldt was much higher than the 11.1 percent found by Sloan et al. might be explained by the economic recession and Medicaid cutbacks of 1982.

The purpose of our research was to examine, in detail, the characteristics of both the physicians' practices and the patients in relation to charity care and bad debt. The methodology closely paralleled a similar study done in Florida to assess the institutional and patient characteristics related to uncompensated care in hospitals (Duncan and Kilpatrick 1987). For the present study, data were collected from a sample of Florida physicians through a prospective, patient-specific survey that collected detailed charge and payment data for a complete patient census on randomly selected practice days.

In addition to its importance as a research question, the determination of uncompensated care loads borne by physicians also has direct policy relevance. Recent Medicaid changes and proposals to expand

the availability of health insurance coverage for employed persons are intended to reduce the burden, to providers, of uncompensated care. In order to determine accurately the impact of proposed federal and state policy initiatives designed to reduce uncompensated care, it is necessary to have objective data on the magnitude of the problem and on the characteristics of patients who contribute to the uncompensated care load of both office-based physicians and hospitals.

DATA AND SAMPLE CHARACTERISTICS

In October 1986, the state of Florida had 21,170 physicians, of which 13,508 were office-based private practitioners. The sampling frame used for this research consisted of a random sample drawn to ensure complete geographic coverage of the state and stratified to overrepresent primary care and solo practice physicians. The stratification was based on the assumption that solo practitioners and primary care physicians would be disproportionately involved in providing uncompensated care. Survey instruments were mailed to 4,500 primary care and 1,500 non-primary care physicians.

The surveyed practices were asked to provide information on the practice and to collect information on all patients seen during one randomly assigned day. The day of the week was randomly varied so that approximately 20 percent of the sample was asked to collect data on each weekday. In addition, each practice was asked to maintain a charge/payment ledger on its patients from the time of the original visit until the balance was paid, or 90 days subsequent to the visit, whichever was earlier. Partial data were received from 397 practices, representing a response rate of only 6.6 percent. Despite the extremely poor response rate, with the exception of Dade County, which was underrepresented, counties participated at rates very similar to their original sampling proportions. Complete financial data were available from 307 practices with 4,042 patient visits in the sampling period.

Because the response rate was extremely low, the possibility of reporting bias needs to be considered explicitly. The purpose of the study was known to the practices; hence, it is possible that practices with a larger than average uncompensated care load were more likely to respond. However, because the response rate in Dade County, which has the largest indigent population in the state, was lower than the state average, it is possible that an offsetting downward bias could also have occurred. Our analysis showed that the distribution of responding practices closely paralleled the original sample both geo-

graphically and by specialty. Similarly, the demographic profile of the patients who responded approximated closely the Florida population. Additionally, the proportion of billings left unpaid closely matched the results of earlier studies. Given these results, we proceed cautiously with the assumption that the sample was representative and that the distribution of the characteristics of patients leaving unpaid balances was valid.

PRACTICE CHARACTERISTICS

As noted, specialty designations for respondents were very similar to the original sampling proportions. Family practice constituted 23.1 percent of the sample, internal medicine 13.4 percent, pediatrics 9.9 percent, general surgery 8.0 percent, obstetrics/gynecology 6.9 percent, and others less than 5.0 percent. The age distribution of responding physicians showed no evidence of a preponderance of part-time, semiretired medical practices. For example, 40.9 percent were between 26 and 45, 45.7 percent between 46 and 65, 0.4 percent younger than 25, and 13.0 percent 65 years old or older. Solo practices made up 57.4 percent of the sample; two-person partnerships 13.4 percent; three-person partnerships 9.6 percent; four- and five-person partnerships 5.8 percent and 4.5 percent, respectively; and groups of six or more 8.5 percent. The physicians who responded had been in practice in their current location for an average of 10.4 years. More specifically, 49.4 percent had been in their present practice for less than 7 years and 14.0 percent for more than 20. The reported average number of hours worked per week was 37, but ranged from 0 to 99, with 30 percent working less than 27 hours and 7 percent in excess of 60 hours.

SELF-REPORTED PROVISION OF INDIGENT CARE

On the practice survey, physicians were asked to estimate the number of indigent patients seen in a given week. The mean number of indigents reported by participating physicians was 10.4; the median was 5. The distribution was positively skewed: 8 percent of the physicians said they saw no indigent patients while 10.9 percent reported seeing only one; conversely, 15 percent of the practitioners reported seeing 15 or more, and 10 percent said they saw over 20 indigent patients per week. Six practices reported office visits for more than 100 indigent patients

per week. Two specialties, pediatrics and family practice, reported relatively high volumes of indigent patients, while urology reported the lowest average volume at 2.3 per week. In addition, the number of indigent patients per week varied by the age and gender of the physician. Male physicians reported seeing an average of 10.8 indigent patients per week while their female counterparts reported 4.2. The average number of indigent patients reported as seen per week also increased with the age of the physician. The 26–45 age group averaged 9.07 indigent patients while those over 65 averaged 13.4. While these self-reported data are interesting, the same volume of indigent patients was not supported by the charge and payment data collected for individual patients. This discrepancy raises a serious question about self-reported figures as valid estimates of uncompensated care volumes.

DEMOGRAPHIC PROFILE OF PATIENTS

The demographic profiles of the patients in the total sample and of those either leaving bad debts or provided charity care are presented in Table 1. In the total sample, male patients make up 41.1 percent of the responses and female patients 58.9 percent. Even with a small response rate, the proportion of females in the sample was very close to what would have been expected. Using expected visit rates from the south (National Center for Health Statistics 1987) and 1986 Florida population data by age and sex (University of Florida, Bureau of Economic and Business Research 1987), we would have expected 60.6 percent females among the patients.

Of the patients reported, 85.3 percent were white, 7.7 percent were black, and 7.0 percent were Hispanic, Oriental, or Haitian. Over 93 percent of the patients were permanent, full-time residents of the state of Florida, and another 4.2 percent were part-time residents. The majority of patients lived in places with populations of less than 50,000 (58.5 percent), while 10.3 percent lived in metropolitan areas of more than 500,000 (data not reported in Table 1). The plurality of patients (45.1 percent) came from families with annual incomes greater than $20,000 while 8.7 percent had annual family incomes of less than $5,000. Further, 67.2 percent of the respondents were married, 32.8 percent were employed full-time, and 44.9 percent had spouses employed full-time (data not reported). The data also showed that 76.9 percent of physician visits were for regularly scheduled appointments, 68.3 percent of the visits were self-referred, and 24.0 percent were

Table 1: Patient Profile Information for the Total Sample and Bad Debt and Charity Categories

	Total Sample (%)	*Bad Debt* (%)	*Charity* (%)
Gender			
Male	41.1	51.2	36.9
Female	58.9	48.8	63.1
Race			
White	85.3	45.4	64.3
Black	7.7	36.4	25.2
Other	7.0	18.2	10.5
Age			
0–5	17.2	13.3	16.4
6–15	7.2	11.1	12.9
15–45	23.9	24.4	13.6
45–65	22.3	35.6	10.0
65+	29.4	15.6	47.1
Residency			
Full year	93.2	88.9	94.4
Part year	5.1	6.7	4.9
Nonresident/Tourist	1.7	4.4	0.7
Rural/Urban			
Rural	28.7	62.2	42.0
Urban	71.3	37.8	58.0
Income			
<$5,000	8.7	35.0	43.5
$5,000–$7,499	7.5	5.0	14.8
$7,500–$9,999	6.5	7.5	7.0
$10,000–$12,499	9.2	15.0	11.3
$12,500–$14,999	7.9	10.0	3.5
$15,000–$17,499	7.1	10.0	2.6
$17,500–$19,999	8.0	5.0	4.3
$20,000+	45.1	12.5	13.0
Marital Status			
Married	67.2	56.8	39.6
Never married	10.5	18.2	21.6
Other	22.3	25.0	38.8
Employment			
Full-time	32.8	18.2	7.0
Part-time	8.4	13.6	3.1
Homemaker	11.9	6.8	7.0
Unemployed	9.9	31.8	25.8
Retired	37.0	29.6	57.1
Visit Type			
Walk-in, routine	9.9	0.0	22.0

Continued

Table 1: Continued

	Total Sample (%)	*Bad Debt (%)*	*Charity (%)*
Walk-in, urgent	2.9	0.0	2.8
Appointment	76.9	64.4	56.0
Urgent appointment	6.1	0.0	2.8
Emergency room	0.3	0.0	0.0
Hospital	3.0	22.2	12.1
Other	0.9	13.3	4.3
Practice Type			
Family practice	32.9	11.1	39.2
Internal medicine	14.5	24.4	11.9
General surgery	4.7	6.7	4.2
Obstetrics/Gynecology	4.4	0.0	1.4
Pediatrics	17.11	22.2	9.1
Cardiology	1.8	0.0	7.0
Orthopedic surgery	5.1	0.0	9.8
Ophthalmology	3.8	0.0	0.0
Urology	2.0	0.0	0.7
Ear/Nose/Throat	2.7	0.0	3.4
Other	11.0	35.6	13.3
Group Size			
1	61.4	55.6	61.5
2	14.5	44.4	7.7
3	9.7	0.0	14.0
4	4.8	0.0	7.7
5	4.2	0.0	0.0
6	5.4	0.0	9.1
Source of Payment			
Self	32.4	37.8	9.8
Individual insurance	4.0	0.0	0.7
Group insurance	21.5	6.7	0.7
Blue Cross/Blue Shield	5.4	4.4	0.0
HMO	2.5	0.0	0.7
Medicare	28.5	33.3	58.0
Medicaid	2.5	13.3	24.5
Workers' compensation	1.7	0.0	0.7
Other	1.5	4.4	4.9
N =	4042	45	143

referred by another physician. Self-pay/uninsured was the primary source of payment for 32.4 percent of the patients, followed by Medicare (28.4 percent) group insurance (21.5 percent), Blue Cross/Blue Shield (5.4 percent), individual insurance (4.0 percent), HMOs (2.5 percent), Medicaid (2.5 percent), workers' compensation (1.7 per-

cent), and "other" (1.5 percent). The proportion having Medicare as a primary payment source in our sample was somewhat lower than the 34.8 percent of visits by Medicare patients reported by the American Medical Association for the southern region (National Center for Health Statistics 1987).

The data in Table 1 also provide information about differences in the sociodemographic profiles of those leaving bad debt or reportedly provided charity care. Not unexpectedly, unemployed individuals accounted for relatively large proportions of those who generated bad debt (31.8 percent) or received charity care (25.8 percent). However, approximately one-third of people with some bad debt were employed either full-time (18.2 percent) or part-time (13.6 percent). The corresponding figures for charity care were 7.0 percent and 3.1 percent, respectively. At the other extreme, over one-half (57.1 percent) of those reportedly receiving charity care were retired, while approximately 30 percent of the bad debt group were retired. There are also interesting differences in type of uncompensated care by residence. For the charity care group, 42.0 percent were from rural areas and 58.0 percent from urban areas. The situation is just the reverse for bad debt (i.e., 62.2 percent were from rural areas and 37.8 percent were from urban areas). While there are a number of other differences of some interest, the one that stands out is the fact that approximately 47 percent of individuals generating bad debt cited as their primary source of payment either Medicare (33.3 percent) or Medicaid (13.3 percent). For the charity category the percentages rise to 58.0 percent for Medicare and 24.5 percent for Medicaid for a total of almost 83 percent of all those reportedly receiving charity care in the sample.

To interpret the reported data on patient characteristics properly, the reader should be aware that patient data were provided on a form that was completed partially by the patient and partially by the practice. Thus, data on patient age and sex refer to the patient seen during that specific visit. Data on family demographics and employment status refer to the person completing the form and, in the case of a child, do not refer to the patient. The data on the referral source and anticipated payment source were provided by the practice for that patient visit.

REDUCED CHARGES

The data (not presented in table format) show that 1,058 cases, or approximately 26.2 percent of all patients in the sample, were charged

less than the usual and customary charge for the services rendered. Of these reductions, 13.5 percent were designated for charity and 10 percent for professional courtesy; the remainder were coded by the practices in the "other" category, which included HMO and PPO discounts. Of the charity care provided, 15.5 percent went to children under 5 and 23.0 percent to persons over 65. Whites received 55.6 percent of charity discounts, blacks 27.4 percent, and Hispanics 10.4 percent. Families with incomes under $7,500 received 50.4 percent of the charity discounts, the retired 33.6 percent, and the unemployed 27.4 percent. In addition, Medicaid patients received 14.4 percent of charity services rendered, Medicare patients 22.4 percent, and the self-pay/uninsured 37.6 percent.

In the succeeding text and tables, the charge for the visit is the amount entered into the transaction ledger by the practice at the time of the visit. If a reduction from the usual and customary charge was taken, it was the reduced charge that was typically entered in the ledger, and any outstanding balance 90 days after the visit date was assumed to be unpaid relative to the charge entered in the ledger.

UNCOMPENSATED CHARGES

The billed amount referred to in Tables 2–7 is net of any charity, courtesy, or other discount. By reporting the data in this way, we underestimate the full economic loss to the practice that would have been computed by subtracting collections from a usual and customary fee for the visit. Because the respondents from the practices were inconsistent in reporting the amount of charity or other reduction from UCR (usual, customary, reasonable) charges, computing the uncompensated amount directly from the final billed amount is less likely to introduce bias in the results than would assigning an assumed UCR charge for the visit. Tables 2–7 contain information on the distribution of charges and uncompensated amounts by patient visit type, source of payment, patient annual income, patient employment status, physician group practice size, and physician practice type.

The 4,042 patients represented in Table 2 generated average charges per visit of $60.50. Ninety days after the service was rendered, 10.4 percent of physician billings remained uncollected. The mean outstanding balance was $45.08, which represents a total sample average of $6.28 per visit. When the net outstanding amount was computed, it was conservatively assumed that all amounts coded "still expected from 3rd party payer" would, in fact, eventually be collected.

Table 2: Distribution of Billed Amount and Uncompensated Amount by Primary Source of Payment, Weighted for the State (N = 4,042)

Max Code	*Billed Cases (%)*	*Billed Amount (%)*	*Unresolved Amount (%)*	*Unresolved Cases – Billed Cases*	*Unresolved Amount – Billed Amount*	*Mean Billed Amount*	*Unresolved Amount – Billed Cases*	*Mean Unresolved Amount*
Self- or zero pay	30.60	30.84	52.03	23.74	17.52	$60.97	$10.68	$58.91
Individual insurance	4.48	4.68	0.10	1.91	0.23	93.21	0.14	7.47
Group insurance	20.17	18.85	2.32	4.25	1.28	56.52	0.72	17.40
Blue Cross/Blue Shield	4.91	3.71	1.74	14.38	4.86	45.74	2.22	16.97
Prepaid Plan/HMO	3.35	1.71	0.78	11.41	4.74	30.95	1.47	13.26
Medicare	32.35	37.02	37.76	19.44	10.59	69.22	7.33	44.05
Medicaid	1.80	0.84	1.11	32.52	13.82	28.05	3.88	11.92
Workers' compensation	1.00	1.04	0.11	11.97	1.09	63.15	0.69	5.72
Other	1.34	1.32	4.06	26.91	32.02	59.44	19.03	70.72
All sources	100.00*	100.00*	100.00*	16.65	10.38	$60.50	$ 6.28	$45.08

*Totals are rounded.

The data in Table 2 on billed amounts and unpaid amounts by source of payment indicate that the percentage of billed cases and the percentage of billed amount are approximately equal. Self-pay patients accounted for approximately 30.6 percent of the billed cases and Medicare patients approximately 32.4 percent. The other major category is group insurance, which accounts for 20.2 percent of the billed cases. The mean billed amounts range from $28.05 for Medicaid patients to $93.21 for patients with individual insurance. The mean billed amount for all payment sources combined is $60.50.

When examining the information on unpaid charges, the importance of payment source becomes evident. Whereas the self-pay patients generated 30.8 percent of the total billed amount, they accounted for 52.0 percent of unpaid charges. Moreover, 17.5 percent of the billed amount was still unpaid after 90 days. The mean unpaid amount for self-pay patients was $58.91, surpassed only by the $70.72 mean unpaid charges attributed to the "other" category. The other two major payment sources, Medicare and group insurance, have very different profiles. For the group insurance category, only 4.3 percent of the billed amount was outstanding 90 days after the patient visit. This represents 1.3 percent of the total unpaid amount. The Medicare group had 19.4 percent of the billed amount unpaid after 90 days and mean unpaid charges of $44.05. Because Medicare can be slow in generating payments, the 90-day limit on billing resolution may have been too short. It is possible that, given a longer period to track payments, the Medicare portion of the unpaid total would have been less. The actual dollar volume of unpaid charges for Medicare patients represents 37.8 percent of the total unpaid amount in the study.

Table 3 shows that the bulk of the billed cases (81.3 percent) were regular appointments and an additional 5.8 percent were urgent appointments. Walk-in/routine visits generated 7.1 percent of the billed cases and walk-in/urgent produced another 1.9 percent. Hospital visits generated 3.0 percent of the billed cases. By looking at column six of Table 3, it can be seen that the mean billed amounts for walk-in/urgent, regular, and urgent appointments, and for emergency room visits were very similar, ranging from $54.51 to $58.07. The mean charge for a walk-in/routine visit was the least expensive at $29.62. As would be expected, the mean billed amount for a hospital visit with a mean of $219.43 is considerably higher than for an office visit. Finally, the "other" visit category had an average billed amount of $366.57. The mean billed amount for all visit types combined was $59.72.

By comparing column two of Table 3 with column one, it can be seen that the proportion of the billed amount is largely consistent with

Table 3: Distribution of Billed Amount and Uncompensated Amount by Patient Visit Type, Weighted for the State (N = 3,901)

Type of Visit	*Billed Cases (%)*	*Billed Amount (%)*	*Unresolved Amount (%)*	*Unresolved Cases — Billed Cases*	*Unresolved Amount — Billed Amount*	*Mean Billed Amount*	*Unresolved Amount — Billed Cases*	*Mean Unresolved Amount*
Walk-in, routine	7.07	3.51	3.23	21.05	9.86	$29.62	$2.92	$15.27
Walk-in, urgent	1.93	1.79	2.01	21.20	12.05	55.27	6.66	43.18
Appointment	81.31	74.23	64.99	15.09	9.38	54.51	5.11	39.63
Appointment, urgent	5.78	5.34	0.46	7.45	0.92	55.18	0.51	8.04
Emergency room	0.28	0.27	1.22	28.84	48.78	58.07	28.32	98.20
Hospital	3.00	11.03	27.34	65.95	26.56	219.43	58.27	120.01
Other	0.62	3.84	0.75	28.92	2.11	366.57	7.72	39.85
All types of visits	100.00*	100.00*	100.00*	16.84	10.71	$59.72	$6.40	$45.17

*Totals are rounded.

the proportion of the billed cases. The two major exceptions are for hospital and "other" visits. Hospital visits generated 3.0 percent of billed cases but 11.0 percent of the billed amount. The "other" category generated 3.9 percent of the billed amount even though that category constituted only 0.6 percent of the billed cases. In the other direction, regular appointment visits generated only 74.2 percent of the billed amount compared to 81.2 percent of the billed cases.

Comparing billed amounts with unpaid amounts shows major differences. Regular appointments generated 74.2 percent of the charges but only 65.0 percent of the unpaid amounts. Conversely, hospital visits generated 11.0 percent of the charges but 27.3 percent of the unpaid amount. This difference can be understood by noting the distribution of mean unpaid amounts across "type of visit" categories. The mean unpaid amounts range from a low of $8.04 for urgent appointments and $15.27 for walk-in/routine visits, to $98.20 and $120.01 for emergency room and hospital visits, respectively. In the case of emergency room visits, the unpaid amount as a percentage of billed amount approaches 50 percent. Regularly scheduled appointments had an average unpaid amount of $39.63.

Data on the relationship between income category and uncompensated care are contained in Table 4. The data show clearly that, while family income level does have an effect on levels and rates of uncompensated care, the issue is not simply one of poverty. In fact, 20.8 percent of the unpaid charges are generated by patients with incomes of $20,000 or more. The same group generated 47.5 percent of total charges, or 26.6 percent more than their contribution to uncompensated care. Patients with incomes of $10,000 or more contributed proportionately less to the unpaid charges than to the billed amounts, with the exception of the $17,500–$19,999 category. However, the proportional differences were small, ranging from 1.5 percent for the $15,000–$17,499 category to 3.7 percent for the $10,000–$12,499 category.

The first three rows of Table 4 show that individuals in families with incomes below $10,000 contribute proportionately more to the uncompensated care dollar volume than they do to the billed amount. In the $5,000–$7,499 category, for example, the contribution to the unpaid amount is almost three times the contribution to the billed amount (i.e., 33.6 percent versus 11.4 percent). The lowest income category contributes 5.3 percent more to the unpaid amount than to the billed amount. The mean unpaid charges for the two low-income categories are $21.83 and $131.72, respectively. The unpaid amount, as a percentage of the billed amount, is 15.4 percent, 27.3 percent, and

Table 4: Distribution of Billed Amount and Uncompensated Amount by Patient Income Level, Weighted for the State (N = 3,515)

Family Yearly Income	*Billed Cases (%)*	*Billed Amount (%)*	*Unresolved Amount (%)*	*Unresolved Cases — Billed Cases*	*Unresolved Amount — Billed Amount*	*Mean Billed Amount*	*Unresolved Amount — Billed Cases*	*Mean Unresolved Amount*
Less than $5,000	8.67	7.96	13.23	44.27	15.38	$55.88	$8.60	$21.83
$ 5,000-$ 7,499	7.11	11.39	33.61	23.48	27.29	97.46	26.60	131.72
$ 7,500-$ 9,999	7.11	6.35	9.52	25.41	13.88	54.37	7.55	38.26
$10,000-$12,499	8.84	9.07	5.33	13.11	5.44	62.46	3.40	29.09
$12,500-$14,999	7.35	4.76	2.62	14.75	5.10	39.36	2.01	15.12
$15,000-$17,499	6.51	4.48	2.98	16.75	6.15	41.90	2.58	19.99
$17,500-$19,999	8.13	8.54	11.88	15.48	12.87	63.87	8.22	58.55
$20,000 or more	46.28	47.45	20.83	10.57	4.06	62.38	2.53	32.44
All income groups	100.00*	100.00*	100.00*	16.78	7.91	$60.85	$5.63	$40.64

*Totals are rounded.

13.9 percent, respectively, for the first three income categories between $10,000 and $17,499.

The data in Table 5 show the impact of employment status on billed and unpaid amounts. Retired individuals account for 44.6 percent of the billed amount and 49.8 percent of the unpaid amount. The other major revenue-generating group, the full-time employed, account for 33.4 percent of the billed amount and 31.5 percent of the unpaid amount. The mean unpaid charges for the full-time employed was $54.52, and the aggregate unpaid amount represented 9.7 percent of the total billed. Overall, the contribution to unpaid charges is proportional to the billed amount for all employment categories.

As noted earlier, the majority of the private practice physicians in Florida are in solo practice. Consistent with this fact, Table 6 shows that 64.9 percent of the billed amount was generated by solo practice physicians. An additional 14.7 percent of the billed amount was generated by two-person practices and 11.7 percent by three-person practices. Group practices of four, five, and six or more accounted for 2.6 percent, 3.4 percent, and 2.8 percent of total charges, respectively. An outstanding feature of the data in Table 6 is that, while practices with two or three physicians generated only 26.4 percent of the billed amount, they accounted for 49.0 percent of unpaid charges. Conversely, solo practice physicians accounted for 64.9 percent of the total charges, but only 41.5 percent of the unpaid amount. This figure means that 6.8 percent of the billed amount for solo practitioners remained outstanding after 90 days. By comparison, the percent outstanding for two- and three-person practices was 17.5 percent and 22.9 percent, or over three times the level of the solo practice physician. Practices with four physicians contributed least to the unpaid amount (0.1 percent), had the lowest proportion of outstanding charges after 90 days (0.2 percent), and had the lowest mean unpaid amount ($15.37).

Table 7 contains information on how practice type is related to the volume of charges and uncompensated amounts. The mean billed amount was $61.05. The data show a great deal of variability with mean charges ranging from a low of $37.02 for family practice to $138.17 for ear, nose, and throat, and $226.84 for general surgery. The mean unpaid amounts are even more divergent, with urology averaging $6.00 and orthopedic surgery averaging $312.11. Three primary care specialties (family practice, internal medicine, and pediatrics) have mean unpaid amounts of approximately $33.00. The average unpaid amount for OB/GYN is somewhat lower at $25.86.

The contributions to billed amount and unpaid amount are rela-

Table 5: Distribution of Billed Amount and Uncompensated Amount by Patient Employment Status, Weighted for the State (N = 3,891)

Current Work Situation	*Billed Cases (%)*	*Billed Amount (%)*	*Unresolved Amount (%)*	*Unresolved Cases — Billed Cases*	*Unresolved Amount — Billed Amount*	*Mean Billed Amount*	*Unresolved Amount — Billed Cases*	*Mean Unresolved Amount*
Employed full time	31.83	33.37	31.54	13.71	9.72	$63.53	$6.18	$54.52
Employed part time	8.54	7.38	4.62	11.65	6.44	52.37	3.37	34.81
Full-time homemaker	10.23	8.21	7.09	12.95	8.89	48.62	4.32	43.34
Unemployed	8.60	6.41	6.95	26.65	11.15	45.15	5.04	21.55
Retired	40.79	44.63	49.80	18.99	11.48	66.30	7.61	47.46
All sources	100.00*	100.00*	100.00*	16.72	10.29	$60.60	$6.23	$44.51

*Totals are rounded.

Table 6: Distribution of Billed Amount and Uncompensated Amount by Physician Group Practice Size, Weighted for the State (N = 3,893)

Number of Physicians in Practice	*Billed Cases (%)*	*Billed Amount (%)*	*Unresolved Amount (%)*	*Unresolved Cases — Billed Cases*	*Unresolved Amount — Billed Amount*	*Mean Billed Amount*	*Unresolved Amount — Billed Cases*	*Mean Unresolved Amount*
1	63.18	64.88	41.54	17.78	6.84	$62.89	$4.30	$24.20
2	15.03	14.72	24.09	22.76	17.49	59.98	10.49	57.56
3	11.04	11.67	24.95	13.08	22.85	64.75	14.80	125.26
4	3.54	2.56	0.06	2.60	0.24	44.36	0.10	15.37
5	3.34	3.38	4.82	9.44	15.23	62.00	9.44	100.02
6+	3.87	2.77	4.55	17.75	17.56	43.82	7.69	43.34
All group sizes	100.00*	100.00*	100.00*	17.19	10.69	$61.23	$6.55	$45.63

*Totals are rounded.

Table 7: Distribution of Billed Amount and Uncompensated Amount by Physician Practice Type, Weighted for the State (N = 3,908)

Practice Type	*Billed Cases (%)*	*Billed Amount (%)*	*Unresolved Amount (%)*	*Unresolved Cases — Billed Cases*	*Unresolved Amount — Billed Amount*	*Mean Billed Amount*	*Unresolved Amount — Billed Cases*	*Mean Unresolved Amount*
Family practice	24.71	14.99	11.12	10.10	7.87	$37.02	$2.91	$33.27
Internal medicine	18.44	14.45	11.42	13.26	8.38	47.86	4.01	33.57
General surgery	3.91	14.54	4.72	30.07	3.45	226.84	7.81	45.19
Obstetrics/Gynecology	8.40	5.91	4.23	17.80	7.59	42.98	3.26	25.86
Pediatrics	10.13	6.62	5.23	13.16	8.37	39.92	3.35	33.42
Cardiology	1.69	1.89	1.46	23.34	8.23	68.19	5.61	28.03
Orthopedic surgery	7.14	6.90	22.95	7.08	35.26	58.97	20.80	312.11
Ophthalmology	1.39	1.19	0.72	4.18	6.45	51.94	3.35	80.20
Urology	1.92	1.76	0.03	1.66	0.18	55.82	0.10	6.00
Ear/Nose/Throat	1.91	4.32	4.83	31.99	11.83	138.17	16.35	90.98
Other	20.35	27.43	33.28	31.75	12.87	82.30	10.59	37.00
All types of practices	100.00*	100.00*	100.00*	17.00	10.60	$61.05	$6.47	$45.63

*Totals are rounded.

tively consistent, with two major exceptions: general surgery and orthopedic surgery. Although orthopedic surgery accounted for only 6.9 percent of the billed cases, it was responsible for 23.0 percent of the total unpaid amount. Moreover, 35.3 percent of the total amount billed remained outstanding after 90 days. At the other end of the spectrum, general surgery contributed 14.5 percent of the total volume of charges and only 4.7 percent of the unpaid amount. Ninety days after the service was rendered, only 3.5 percent of the original charges remained outstanding for general surgery patients.

FINDINGS OF THE LOGIT MODEL

A logistic regression model was designed to help identify the sociodemographic characteristics of the patients and the circumstances surrounding the provision of care that affect the presence of outstanding charges 90 days after the service has been provided. The results are summarized in Table 8.

We turn first to the sociodemographic characteristics of patients. There is no significant difference, by sex or employment status, in the odds of having some outstanding balance. However, the odds of an outstanding balance are decreased when the patient is from an urban area, and nonwhites are 1.6 times more likely to have an outstanding balance than whites (i.e., $e^{.453} = 1.6$).[1]

There are several significant differences when we look at the size of practice, type or specialty of service, and nature of the appointment. However, the most important determinant is the presence of health care insurance coverage, or its type, or both. When looking at the data on type of practice, the one outstanding feature is that patients seen in surgical practices have a higher probability of an outstanding balance than any other group. The group with the highest odds are those seen in general surgery (1.68) followed closely by orthopedic surgery patients (1.65). It is interesting, in this context, that family practice, the practice type that reported the highest probability of providing indigent care, has the lowest odds of having patients with an outstanding balance after 90 days (0.04). The only distinctive feature about size of practice is that patients seen in practices with four partners have the highest odds of having some unpaid charges (odds approximately 1.53).

Consistent with expectations, those patients seen in the emergency room have the highest odds of some outstanding balance (approximately 11 times more likely than the routine walk-ins), fol-

Table 8: Logit Model for Uncompensated Physician Care in Florida (N = 3,680)

	β	*Odds*	*Probability of* χ^2
Constant	-0.975	—	<.001
Sociodemographics			
Sex (male = 1)	-0.065	0.937	.546
Race (nonwhite = 1)	0.453	1.573	<.001
Community (urban = 1)	-0.346	0.708	.003
Employment (employed = 1)	-0.136	0.873	.297
Income			
(Reference = <$5,000)			
$ 5,000 - $ 7,499	-0.684	0.505	.002
$ 7,500 - $ 9,999	-0.969	0.379	<.001
$10,000 - $12,499	-0.906	0.404	<.001
$12,500 - $14,999	-1.047	0.351	<.001
$15,000 - $17,499	-1.130	0.323	<.001
$17,500 - $19,999	-1.001	0.368	<.001
$20,000+	-0.897	0.408	<.001
Practice Specialty			
(Reference = family practice)			
Internal medicine	-0.119	0.888	.488
General surgery	0.517	1.677	.021
Obstetrics/Gynecology	0.191	1.210	.497
Pediatrics	-0.065	0.937	.709
Cardiology	0.426	1.531	.070
Other (orthopedic, surgery, urology, ear/nose/throat)	0.500	1.649	.006
Practice Size			
(Reference = solo practice)			
2-person	0.235	1.265	.123
3-person	0.291	1.338	.121
4-person	0.426	1.531	.074
5-person	-0.244	0.783	.432
6+ -person	-0.110	0.896	.655
Type of Visit			
(Reference = Walk-in, routine)			
Walk-in, urgent	0.608	1.837	.054
Appointment	0.208	1.231	.217
Appointment, urgent	-0.276	0.759	.395
Emergency room	2.417	11.212	<.001
Hospital	1.811	6.117	<.001
Other	1.638	5.145	<.001
Insurance Coverage			
(Reference = no coverage)			
Individual	-1.648	0.192	<.001

Continued

Table 8: Continued

		β	*Odds*	*Probability of* χ^2
Group		*-1.418*	*0.242*	*<.001*
Blue Cross/Blue Shield		*-0.379*	*0.685*	*.130*
Prepaid		*-0.065*	*0.937*	*.846*
Medicare		*-0.049*	*0.952*	*.726*
Medicaid		*0.790*	*2.203*	*.003*
Workers' compensation		*-0.800*	*0.449*	*.074*
Model χ^2	344.61			
df	35			

lowed by patients seen in the hospital, where the odds are approximately 6. At the other extreme are patients with regular appointments ($e^{.208} = 1.23$) and urgent appointments ($e^{-.276} = .76$).

Finally, we turn our attention to the importance of health care insurance coverage. Patients with individual insurance are least likely to have an outstanding balance 90 days after physician services are rendered ($e^{-1.65} = .19$), followed closely by individuals covered by group insurance ($e^{-1.42} = .24$), and those covered by workers' compensation ($e^{-.800} = .45$). Patients covered by other third party payers are somewhat more likely to have some outstanding balance, but the odds are still below 1, with the exception of Medicaid. The data show that Medicaid patients are the group most likely to have some outstanding balance 90 days after treatment. In fact, they are more than twice as likely as those patients are who have no medical care coverage.

By far the most striking finding is that for self-pay uninsured patients, the odds of having some outstanding balance 90 days after the services have been rendered is 35.5 times that of individuals with some type of insurance coverage! Looked at from a somewhat different perspective, with everything in the equation held constant, there is a 97 percent probability that a patient with no coverage will have some outstanding balance 90 days after physician services are rendered.

FINDINGS OF THE COVARIANCE MODEL

The results of the logistic regression informed the issue of the characteristics of individuals having any nonzero physician charges outstanding 90 days after provision of service.

The data in Table 9 summarize results of a covariance analysis designed to explain the amount of uncompensated care charges for those 487 individuals with some nonzero outstanding balances.

As can be seen from the adjusted R^2 (.08), the specified model is not very successful in explaining the actual amount of unpaid physician charges.

The data show that individuals with incomes between $5,000 and $7,499 have the highest average outstanding balance (b = 59.6), significantly higher than the reference group of individuals <$5,000. Although there is some variation across income category, the differences are not statistically significant. Similarly, the only significant effect of practice specialty is for cardiology in which the outstanding amount is significantly higher (b = 128.8) than for other practice types.

As was evidenced in the analysis, if the patient was seen at a group practice of three individuals, the outstanding balance was significantly higher than at other practices (b = 43.7). At the other extreme, if the visit was to a four-person practice the outstanding bill was at a minimum (b = 53.9).

The difference was not significant, however, at the conventional .05 level (p = .08). Finally, the data show some difference in amount of outstanding charges by type of visit—specifically, if the visit was at a hospital (b = 68.4) or "other," that is, nonroutine, and so forth (b = 91.1). The unpaid balance was significantly higher for these visits than for other visit types.

The data show no statistically significant differences by sex, race, urban/rural residence, or employment status. As expected, individuals with no insurance coverage do have the highest outstanding charges (i.e., all coefficient estimates are negative), but the difference is not statistically significant. The lowest outstanding balance was for individuals with workers' compensation (b = -91.2) followed by individual insurance (b = 41.5) and Medicare (b = 28.5). Again, the differences are not statistically important.

DISCUSSION

The purpose of this analysis was to provide information related to the provision of uncompensated care by private practice physicians in Florida. We were specifically interested in estimating the volume of uncompensated care, documenting the characteristics of patients who generate unpaid charges, and assessing the composition of private

Table 9: Covariance Model for Uncompensated Physician Care in Florida (N = 487)

	β	b	*Probability*
Constant	—	31.84	—
Sociodemographics			
Sex (male = 1)	-.021	-5.27	.66
Race (nonwhite = 1)	-.026	-7.63	.60
Community (urban = 1)	.090	23.61	.08
Employment (employed = 1)	-.103	-26.86	.07
Income			
(Reference = <$5,000)			
$ 5,000 - $ 7,499	.135	59.65	.01
$ 7,500 - $ 9,999	-.023	-12.25	.65
$10,000 - $12,499	-.017	-7.63	.74
$12,500 - $14,999	-.029	-15.60	.58
$15,000 - $17,499	-.028	-16.28	.59
$17,500 - $19,999	-.023	-7.96	.69
$20,000+	-.035	-9.69	.62
Insurance Coverage			
(Reference = no coverage)			
Individual	-.033	-41.46	.47
Group	-.057	-28.79	.23
Blue Cross/Blue Shield	-.024	-14.85	.61
Prepaid	-.035	-28.43	.45
Medicare	-.108	-28.49	.07
Medicaid	-.010	-4.60	.86
Workers' compensation	-.087	-91.17	.07
Practice Specialty			
(Reference = family practice)			
Internal medicine	-.044	-16.11	.39
General surgery	.033	15.59	.50
Obstetrics/Gynecology	-.005	-3.48	.91
Pediatrics	-.064	-23.28	.25
Cardiology	.255	128.79	<.001
Other (orthopedic, surgery, urology, ear/nose/throat)	.024	8.95	.73
Practice Size			
(Reference = solo practice)			
2-person	.048	16.24	.35
3-person	.111	43.71	.05
4-person	-.104	-53.98	.09
5-person	.023	17.24	.66
6+ -person	.023	12.41	.64
Type of Visit			
(Reference = Walk-in, routine)			
Walk-in, urgent	.041	27.39	.43

Continued

Table 9: Continued

		β	b	*Probability*
Appointment		.063	16.74	.39
Appointment, urgent		.020	15.06	.69
Emergency room		.068	84.74	.16
Hospital		.159	68.49	.01
Other		.126	91.07	.01
$F=$	2.21			
Adjusted R^2	0.0801			

practices that provide uncompensated care. Although the response rate was low, our results provide an initial estimate of the amount of uncompensated care provided by private physicians in Florida.

The primary finding is that 10.4 percent of the billed amounts in our sample was unpaid 90 days after the physician visit (see Table 2). The mean outstanding balance was $45.08, representing a total sample average of $6.28 per patient visit. Using these data it was possible to calculate an estimate of the total amount of uncompensated care generated by private practice physicians in Florida in 1986. Multiplying the average uncompensated care amount of $6.28 per patient visit by the weighted average of patient visits per year from our data and extrapolating to all 13,508 office-based practices indicates that physicians would have generated approximately $328 million in uncompensated care in 1986.

Indirect estimates of the total amount of uncompensated care may also be made. Data from the National Center for Health Statistics (1987) show that the annual average visit rate in Florida was approximately 4.16 visits per person per year. Assuming a 1986 population for Florida of 11.7 million[2] people (University of Florida, Bureau of Economic and Business Research 1987) and using the $60.50 average visit charge from this survey, yields total expected annual gross charges of $2.94 billion. Multiplying this by 10.4 percent yields an estimated $306 million in uncompensated care for the state. Another approach is to use the AMA data on net physician income—$112,600 for the South Atlantic region (Reynolds and Duann 1986). An estimate of physician gross incomes can be obtained by adding the average practice expenses of $109,500, for the South Atlantic region (Reynolds and Duann 1986), to the net income figure, to yield an approximate gross revenue of $222,100. Multiplying this by the 13,508 office-based physicians yields an estimated total gross revenue for the state of $3.00 billion.

The uncompensated care portion of this amount would be $321 million.

Thus, estimating the figure using three different approaches, the expected total amount of uncompensated care for private practice physicians in the state was estimated to range between $306 million and $328 million. This figure was representative only of those physicians in private office-based practices. It did not include uncompensated care generated by physicians on the faculties of the state's three medical schools or physicians employed in institutional settings. Also, the dollar amount estimated did not account for free care provided by physicians in neighborhood clinics or in other charitable institutions.

While the precision in estimating total uncompensated care for private physicians was lower than one might have liked, it was adequate to frame the debate relative to hospital uncompensated care which, in 1986, was estimated by the Florida Hospital Cost Containment Board to be $831 million. The findings of this study, which were available to policymakers in early 1987, helped create a favorable climate for a significant expansion of Florida's Medicaid fees for physician services. Further, this study is the first of its type to illuminate the characteristics of patients most likely to generate uncompensated care in physician practices.

NOTES

1. The logit model coefficients express results in terms of log odds. To aid interpretation it is useful to take the natural antilogarithms of the logit coefficients (i.e., exponentiate the logit coefficients). In this exponentiated form, values exceeding 1.0 indicate an increased odds of an outstanding balance, while values less than 1.0 indicate a decreased odds of an outstanding balance. The logit coefficients can also be used to estimate the probability of an outstanding balance for any given patient profile. Consider the basic logit equation $Ln[P_i/(1-P_i)] = \Sigma\beta_k X_{ik} = Z_i$. Any probability, P_i, can be computed as $P_i = \exp(Z_i)/[1 + \exp(Z_i)]$.
2. The estimated 1986 Florida population was 11,657,843 (University of Florida, Bureau of Economic and Business Research 1987).

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