ateness of the calls differs somewhat, but may be dependent upon a more stable population and greater familiarity than is present in the academic setting.

The care resulting in response to the after-hours calls shows private family physicians handling more problems by telephone and sending patients to the emergency room or seeing them personally less often. Again, however, the large clinic group in this study performed more closely to the residents, while the small clinic group created most of the savings in utilization.

Bergman and Rosenblatt conclude that "changes in after-hours utilization reflect practice maturation," but that "after-hours utilization bears a stable relationship to practice size and volume." Thus, they feel "further studies in other settings are needed." These results are useful as the first descriptive study of after-hours telephone utilization in private family practice in the United States.

This study supports the hypothesis of constancy of utilization in most areas, although the frequency of calls per patient visit is lower in private practice. Physician-patient familiarity is greatest in small, private family practice clinics and may result in different utilization of after-hours services. Before concluding that the patterns of after-hours utilization can be generalized to the private practice setting, further studies should be done outside academic centers with a view toward the effect of the physician-patient relationship on that utilization.

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Social Identities of Medical Students Oriented Toward Careers in Family Medicine

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Underlying the design of this study is the assumption that medical students choosing to specialize in family medicine share a common pattern of social characteristics. Gouldner's work[1] on latent and manifest social identities provides a theoretical basis for isolating these characteristics and determining whether they form a pattern that can distinguish family medicine students from their colleagues choosing other specialties.

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Methods

This study identifies the manifest role as that of being a medical student. The manifest identities

that pertain to this role are, therefore, associated with academic credentials and performance. Eight manifest identities were selected for inclusion in this study: the six scores on the Medical College Admissions Test (MCAT), and two undergraduate cumulative grade-point averages (science and total). For purposes of this study, latent identities were defined as characteristics associated with social roles other than being a medical student that may influence attitudes and decisions about specialty orientation, but are generally not considered to be uniformly "relevant" as criteria for admission to medical school. Twenty-one indicators of latent identities were selected for this study from findings of earlier research on family medicine students, other research findings relevant to specialty orientation, and related studies. These indicators related to the respondent's career plans, undergraduate institution, sibling relationships, parents, home town, employment patterns, spouse relationships, and ethnic and religious background.

The study was conducted at a public, northeastern medical school. The study population of 429 students was enrolled in good standing during the 1980-81 academic year. Data on latent identities were collected over a three-month period through a mailed questionnaire specifically designed for this study. Data on manifest identities were collected separately from the medical school's admission data. Manifest and latent social identities for each medical student were matched using social security numbers after data collection of latent identities was completed. A total of 305 students, 71 percent of the study population, responded to the questionnaire. Data analysis was performed by computer using program formats from the Statistical Analysis System Institute.

Results

Specialty orientation to family medicine at the time of the study was used as the classification variable in this study. The family medicine subgroup included 81 students, 27 percent of the respondents. The non-family-medicine subgroup had 224 respondents, accounting for 73 percent of the population.

Manifest Identities

The change in MCAT format in 1978 produced two sets of manifest identity data. The class entering in 1977 took the old MCAT. The remainder of the population took the new MCAT. Joint analysis of old and new MCAT formats is not practical.[2] For purposes of this study, it was assumed that if the non-MCAT manifest identities, eg, the two grade-point averages for the two subgroups, exhibited a significant correlation with grade-point averages, then the manifest identity data from the first-, second-, and third-year students would be generalizable to the fourth-year students. Analysis showed that the grade-point averages had a relationship significant at the .05 level. Therefore, the analysis of the manifest data was confined to the classes entering in 1978, 1979, and 1980. This subgroup included 231 respondents, of whom 67 were oriented to family medicine and 164 were not oriented to family medicine.

Analysis of variance showed that two of the eight identities (Biology Knowledge, and Skills Analysis: Reading) distinguished, in a statistically significant manner, the family medicine subgroup from the non-family-medicine subgroup. In both instances, the family medicine subgroup scored higher than their colleagues (Table 1).

Latent Identities

Chi-square analysis of discrete variables for family medicine vs non-family-medicine subgroups was used to identify subsets with sufficient power to distinguish, on an individual basis, the two subsets from each other in a statistically significant manner. Three subsets were identified as significant at the .05 level: specialty orientation at admission, type of undergraduate institution, and religious affiliation. Marital status and a younger sister sibling relationship were significant at the .10 level. A separate analysis of variance was done on the following three continuous variables in the latent identities: age at admission to medical school, number of siblings, and birth order. Age presented a statistical significance of .05.

This profile suggests that the family medicine subgroup is coming disproportionately from mar-

Table 1. Means of Manifest Identities by Students' Orientation to Family Medicine

Variable	Oriented to Family Medicine (n=67) Mean/SD	Not Oriented to Family Medicine (n=164) Mean/SD
Grade point averages		
Cumulative—science	3.40/0.47	3.38/0.49
Cumulative—total	3.40/0.41	3.43/0.33
MCAT scores		
Biology knowledge*	9.98/1.70	9.44/1.71
Chemistry knowledge	9.68/2.04	9.91/1.90
Physics knowledge	9.37/2.14	9.55/2.03
Science knowledge	9.75/2.05	9.62/1.99
Skills analysis: reading**	9.46/1.94	8.95/1.55
Skills analysis: quantitative	9.47/2.03	9.30/1.92

*Analysis of variance showed a difference in the mean scores of the two subgroups significant at the .03 level
**Analysis of variance showed a difference in the mean scores of the two subgroups significant at the .04 level

ried students with Protestant religious affiliation. These students tend to be older than their colleagues, prefer family medicine at admission to medical school, and attend public undergraduate institutions. The subgroup also appears to have a higher percentage of younger sisters than their colleagues.

The two subgroups were then analyzed using a multinomial logistic analysis procedure. This procedure has been shown to be a preferred method for assessing the collective predictive capability for an array of normal, binomial, and multinomial variables when the variances of key variables are large and the sample is characterized by heterogeneity.[3] All subsets that previously presented statistically significant ability to distinguish the two subgroups were included in the logistic regression. In addition, two variables that were slightly above the 0.1 level by chi-square analysis (sex, and younger brother sibling relationship) were also included in the analysis.

The logistic predictive model presented a chi-square value of 49.87 with three degrees of freedom. This model indicates that students oriented to family medicine are best identified through the collective influence of sex (higher frequency of male members than in the student population), type of undergraduate institution (greater frequency of attendance at public undergraduate institutions), and specialty orientation at admission (family medicine orientation rather than an orientation to other specialty subgroups).

Comment

The data suggest that students oriented toward family medicine in this medical school present a profile of latent identities that distinguishes them from students in other specialty subgroups. The study reflects a relatively small population of

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one medical school, but it has been supported by another study of residents in family medicine residency programs in the same state. These residents, who come from 25 different medical schools, presented a latent identity profile statistically similar to that of the students oriented to family medicine,[4] suggesting that this profile has credibility beyond the study population per se.

If family medicine is to continue to grow, it must not only increase its supply of first-year postgraduate positions but, most important, also increase the proportion of the graduating medical students choosing to specialize in family medicine. Necessarily, this means either admitting to medical school more students attracted to the family medicine image or enhancing its appeal to the broader spectrum of students than is currently the case. This study suggests that family medicine is most appealing to male students who have attended public undergraduate institutions and who are oriented toward a career in family medicine before they enter medical school. The findings also point to students who are married, Protestant, and somewhat older than their peers. These results could be useful to other medical schools as a model for analysis of characteristics of medical students attracted to family medicine and other specialties and may also be helpful as they relate to selection criteria for entering medical students.

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