

# Graduate Follow-Up in the Medical College of Virginia/Virginia Commonwealth University Family Practice Residency System

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In July 1970, the Department of Family Practice was created by the School of Medicine at the Medical College of Virginia (MCV), with funds that were made available for this specific purpose by the Virginia State Legislature. The primary purpose of this new department was to produce more family physicians for the state of Virginia, and in light of this the goals of the department were established as follows:

1. to produce appropriate numbers of family physicians to meet the needs of the people of Virginia

2. to educate these physicians to provide optimal primary health care services to their patients

To meet these goals, it was decided that a decentralized residency training program was neces-

sary, specifically several family practice centers located in areas of need and linked to an administrative and educational support center at the Medical College of Virginia Medical Education Building in Richmond.

## The MCV System

### *Overall Development*

To identify appropriate sites some basic information on the geographic distribution of primary care physician manpower in the state of Virginia was necessary. Initially, this was provided by some early studies carried out by the Virginia Advisory Legislative Council charged to investigate the paucity of primary care physicians in Virginia. These early studies were later expanded in scope and detail by the new faculty of the Department of Family Practice. The result is that in 1980 there is a system of five family practice teaching centers linked by a common data system. This data system has provided a definition of the popu-

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lations of persons cared for at each site and information on the demand for care from these populations which has enabled the development of standardized curricula and the establishment of an evaluation system based on the patient care provided by each resident at each site. In addition to the strong educational and evaluation thrust, the data system has provided a firm basis for the development of a research capability in ambulatory care by identifying the denominators and numerators more precisely than previously had been possible in primary care sites.

The first three residency training programs were established at sites that the early manpower data indicated to be the areas of Virginia's greatest primary care physician shortage. These sites were as follows:

1. at Blackstone in rural central Virginia. This was a 6-resident per year program which was designated as the MCV Program, the first year being spent largely in the University Hospital at Richmond and the second and third years being spent largely at the family practice center in rural central Virginia.

2. at Vienna in northern Virginia. This was a 6-resident per year program developed in association with Fairfax Community Hospital and an established two-man practice in Vienna, a northern Virginia suburb of Washington, DC.

3. at Newport News in Tidewater, Virginia. This was a 12-resident per year program in association with the Riverside Community Hospital in Newport News and a family practice center which was established on the hospital campus in the Peninsula Health Center, newly erected by the Newport News Public Health Department. These programs received their provisional accreditation in early 1971 and accepted their first applicants in July 1971.

During the first biennium of existence the budgetary allotment for the Department of Family Practice was by line-item separate from, and in addition to, those for the rest of Virginia Commonwealth University. This device has now been used for five successive biennia and has allowed the development of two further sites in Virginia. These sites are as follows:

4. at Virginia Beach in Tidewater, Virginia. This was another 6-resident per year program, originating in 1974. Of the "one and two" type, the first year was spent in association with the

Riverside Community Hospital in Newport News, and the last two years were spent in an established five-physician family practice in Virginia Beach and the General Hospital at Virginia Beach.

5. in Chesterfield County, Virginia, a rural/suburban area of Richmond. In 1976 a six-resident per year program was developed in association with Chippenham Hospital and an established four-physician practice about two miles away from the hospital campus.

In each case the department contracted with the community agency (ie, the hospital or the family practice training center) to furnish the necessary administrative personnel, faculty consultants, and non-academic staff. The contract required that appropriate clinical records be kept at each site, that each site maintain American Medical Association (AMA) accreditation, and that a continuing evaluation of the educational experience as well as patient care be carried out throughout the MCV System.

Since the initial data based on the early Virginia Advisory Legislative Council studies, the state primary care physician needs have been more accurately defined following the completion and update in 1975, 1978, and 1979 of the department's basic manpower studies into the current distribution of primary care physicians by specialty (internists, pediatricians, family physicians) in the state of Virginia. The department's study was first completed in mid 1972 and identified the state of Virginia's primary care physician needs for each decade up to the year 2000. Use was made of the projected population statistics for Virginia provided by the US Census Bureau, and the projections were based on the experience of other western communities which had developed primary care physician manpower projections. In 1972 the prediction was for an achievable goal of 111 new primary care physicians annually over the next 20 years from the medical schools of Virginia. This goal has been adjusted to 86 physicians by the 1978 and 1979 updates—these data allowing a more accurate prediction of the number of individual family practice residency training programs required. The State Council of Higher Education for Virginia, through a study using an entirely different methodology from that of the Department of Family Practice, has corroborated these findings to a remarkable degree.

Table 1 shows the number of residents in train-



Table 1. Medical College of Virginia Residency System 1979-1980				
Name of Center	Number of Residency Positions*			Year Started
	PG <sub>1</sub>	PG <sub>2</sub>	PG <sub>3</sub>	
First Colonial FPC Virginia Beach, Virginia	6	6	6	1974
Riverside FPC Newport News, Virginia	12	12	12	1971
Blackstone FPC Blackstone, Virginia	6	6	6	1971
Chesterfield FPC Richmond, Virginia	6	6	6	1976
Fairfax FPC Vienna, Virginia	6	6	6	1971
*This gives a total of 36 PG <sub>1</sub> positions available and 108 total positions; there are presently 108 positions filled PG <sub>1</sub> -First year of graduate training FPC-Family practice center				

ing in the 1979-1980 year. The intake of 36 residents per year provided a total of 108 positions, all of which are presently filled.

Further expansion of residency training for family practice in Virginia is in abeyance until there is a better understanding by all responsible authorities of the state health care manpower needs.

### *Organization and Administration*

Since the inception of the department and the MCV System of family practice training centers in 1970, a major objective has been to establish and reinforce a close integration of the educational and research efforts in the five family practice centers and the MCV center based in Richmond. Early, it

was recognized that the need in the areas of curriculum, evaluation, and research was so enormous that no single program on its own could hope to develop the resources necessary to complete the tasks. The university center provided access to sophisticated human and technical resources in education and evaluation (eg, biostatistics, visual education) that are not usually available at community based sites.

The department has two policymaking bodies:

1. The Central Headquarters Committee, which is composed of the Chairman and central faculty, specific members of which are responsible for coordinating departmental activities in the administrative undergraduate, graduate, and research areas. The Chairman of Biostatistics has an appointment in the department and is a member of this committee.

2. The Graduate Education Executive Council, which is composed of the Headquarters Group



plus the directors of each of the residency programs, and which makes policy for all aspects of graduate education.

Only these bodies have policymaking capability. There are other activities, such as are carried out by the Faculty Development Program, the Data and Communications Committee, and the Practice Organization and Management Committee.

### *Faculty Development Program*

This program has been functioning since July 1978, and operates under the following specific goals. Family practice faculty will:

1. become competent in ascertaining resident learning needs (to include the behavior of the residents) in family practice
2. become competent in organizing a curriculum for family practice
3. become competent in various teaching techniques and will match them appropriately with both content and setting
4. become competent in evaluation techniques and their use.

Each of the full-time family practice faculty at the Medical College of Virginia along with selected fellows participates in faculty development. Since December 1977, the Educational Planning and Development Program (EPDP) of the Health Sciences Center at MCV, and the Department of Family Practice at MCV have been working closely together to provide faculty development to fellows and the general faculty in the Department of Family Practice. This close liaison of clinical patient family practice expertise and educational planning has produced a strong faculty development program.

### *Data and Communications Committee*

This committee is composed of the Director of Research, residents and faculty from the five family practice centers, and the Chairman of the Department of Biostatistics. This committee is responsible for monitoring the Virginia Family Practice Data System and meets on a monthly

basis under a varied agenda. This group for the past 18 months has been chaired by a resident.

### *Practice Organization and Management Committee*

This committee is responsible for the curriculum in practice organization and management, and has been meeting since 1972 between two and three times per year. It normally sponsors departmental seminars in the spring and fall, which are invariably well received and rated highly by residents. These positive evaluations are particularly noticeable in the responses from graduates of the program.

### *Departmental Goals*

Earlier the departmental goals were expressed simply as: first, to produce family physicians for the state of Virginia, and, secondly, to train family physicians to deliver optimal primary health care to the population of Virginia.

Among more specific objectives necessary to reach these goals the following have been identified and agreed upon by all members of the faculty of the Department of Family Practice:

- A. to secure funds necessary and appropriate for training family physicians
- B. to secure appropriate numbers of full-time family practice faculty for each family practice center, a minimum of 1<sup>1</sup>/<sub>3</sub> full-time equivalents for each six residents in each center
- C. to acquire appropriate facilities and personnel to train family physicians
- D. to identify appropriate consultants able and willing to cooperate in training family physicians
- E. to select the best possible applicants to train as family physicians
- F. to develop an ongoing faculty development program
- G. to develop a detailed curriculum for training family physicians based on the expressed demand by patients
- H. to establish ongoing research in the content and delivery of primary health care services by family physicians to include, but not be limited to:



1. epidemiologic research in biological, behavioral, and social areas
2. manpower research, including present and projected state primary care physician needs
3. operational research, to deal with the organization, management, and efficiency of primary care practices and their health care teams.

### *Curriculum*

The curriculum is coordinated and integrated throughout the three years to meet two areas of patient need: hospital and practice. The hospital curriculum is traditional, being discipline oriented and patterned after the specialty rotations mandated by the *Essentials* for Family Practice Residency Training. The family practice curriculum in development represents a major challenge. The thrust of this curriculum design for the graduate programs at the Medical College of Virginia has been to relate family practice education to the specific health problems presented to family physicians by their patients. The growth of this curriculum will require that family physicians continue to collect and analyze this information. A detailed description of this developing curriculum has been published.<sup>1</sup>

### *Resident Selection*

Each family practice center within the MCV System has its own National Resident Matching Program (NRMP) matching number and is completely responsible for its own resident selection. As each program is in a different geographic area, each tends to select residents interested in practicing in a similar area, ie, rural, suburban, or metropolitan. Although the specific criteria for selection varies somewhat between each family practice center, the acceptance by each center of the overall departmental goals and objectives has meant that there is some consistency of approach toward selection of residents. This is manifested by similarities in the rating instruments used by each center to assess applicants' suitability for matching.

Each program's residents comprise a mix of 55 percent from Virginia with 45 percent from out

of state. These figures represent an average, and for any year in any one center there may be different proportions in either direction.

### **MCV System Graduates**

From 1973 through 1979 the MCV System graduated 174 residents. Table 2 represents the total number of residents who have graduated from each family practice center.

### **Graduate Follow-Up Study**

#### *Methods*

An extensive residency graduate questionnaire was designed and pretested with three separate groups of attending physicians and residency graduates. The fourth revision of the questionnaire was used in this study. It included 120 items, scaled in a five-point, Likert format. The items covered a wide range of attitudes and opinions about post-residency experiences. For example, the graduates were asked about their practice populations and patients, their staff and partners, their family, their relationship with their practice community, and their perceived opportunities for continuing education. In addition, the questionnaire included the seven uniform questions which were identical to the items used in similar family practice surveys for the states of Minnesota and Washington.

These uniform questions were concerned with: (1) characteristics of the graduate's practice, (2) location of that practice, (3) patient volume, (4) involvement in obstetric care, (5) satisfaction with hospital privileges, (6) practice methods, and (7) preparation for practice.

All MCV System graduates who had completed their residency between 1973 and 1979 were surveyed. The initial response rate was 67 percent following one telephone call follow-up, and the response rate rose to 76 percent following the second written follow-up. This produced a final response rate of 76 percent.



Table 2. MCV System Graduates by Program, 1971-1979

Name of Center	Number of Graduates
Fairfax Family Practice Center (Vienna, Virginia)	32
MCV Family Practice Center (Blackstone, Virginia)	32
Chesterfield Family Practice Center (Richmond, Virginia)	12
Riverside Family Practice Center (Newport News, Virginia)	74
First Colonial Family Practice Center (Virginia Beach, Virginia)	24
<b>Total</b>	<b>174*</b>
*N is the total of all graduates of the MCV System	

Table 3 presents information on the number of graduates and the percentile in each type of practice. Only graduates completing this portion of the questionnaire were included. Table 4 provides the distribution of patient encounters by office, hospital, emergency room, nursing home, and home, and provides the average number of encounters per week. The average number is 140, and in this table only those family physicians who are full-time in practice have been included; those fulfilling other functions, ie, emergency room and teaching, are excluded.

### *Geographic Location of Residents*

In order to make reasonable decisions concerning physician manpower, it is necessary to obtain basic information concerning physician supply, demand, and geographic distribution as well as distribution of the general population. To assess the effectiveness of programs intended to change or improve physician manpower supply or distribution, these data must be gathered in a systematic and ongoing manner. The data presented in the section on geographic distribution of residents, therefore, reflects the results of the total sample of residency graduates.

In 1970, there were no systematic data in Virginia concerning primary care physician supply and no data at all concerning geographic distribution of such physicians. It was necessary for the Department of Family Practice at the Medical College of Virginia to institute such a data system. This was accomplished and the first statewide data comparing supply and demand on a geographic basis were recorded in 1972. Subsequently, these data have been updated so that changes in primary care physician manpower numbers compared to population have been recorded. This information has allowed assessment of the results of the family practice residency programs as well as overall changes in primary care physician manpower supply over time.

The first manpower data were used to guide the location of the residency programs in family practice. As a result, there have been established three programs related to the University of Virginia Medical School in the western part of the state; five programs related to the Medical College of Virginia; and one program related to the Eastern Virginia Medical School at Norfolk, Virginia. The MCV/VCU programs are located at Fairfax (northern Virginia), Blackstone and Chesterfield (central Virginia), and Newport News and Virginia Beach (Tidewater, Virginia).

Numbers of graduates of the MCV/VCU residencies are shown in Table 2. There are now 174



Table 3. Type of Practice of 1973-1979 MCV System Graduates

Type of Practice	Number	Percent
Fee-for-Service		
Solo	26	21.5
Partnership	40	33.1
Single specialty group	37	30.6
Multispecialty group	2	1.6
Other		
Health maintenance organization	0	0
Full-time teaching—medical school	2	1.6
Full-time teaching—community hospital	4	3.3
Military/National Health Service Corps	0	0
Emergency room	8	6.7
Other*	2	1.6
<b>Total</b>	<b>121**</b>	<b>100.0%</b>

\*Public health service ambulatory care practice

\*\*N is the number of graduates completing this portion of the questionnaire

graduates, of whom 70 percent have remained in Virginia, and 65 percent have chosen non-metropolitan areas. There is a strong correlation between childhood residence in a non-metropolitan area and choice of practice location in a like area. One hundred forty-six graduates are in office practice, 19 are currently practicing in emergency rooms, 2 are in public health service ambulatory care, and 7 are full-time faculty in family practice residency programs. All of the graduates who have taken the examination of the American Board of Family Practice have received passing grades.

Between 1972 and 1979, the ratio of primary care physicians to the general population in Virginia increased significantly. The increases in the metropolitan areas were most dramatic, but all of the rural planning districts in the state gained substantial numbers of primary care physicians. The bulk of those choosing non-metropolitan areas have been graduates of family practice residency programs. In 1977, a primary care physician manpower study was done by the Virginia State Council on Higher Education using a different

methodology from that of the Department of Family Practice. It produced substantially the same conclusions regarding the supply of such physicians.

It can be said that the results of the first few years' operation of the Virginia family practice residencies have been in keeping with their logistic goals and that the primary care physician manpower needs of the state will be met if the present supply is continued.

### *Obstetrical Care*

Twenty-five percent of graduates indicated that they provided prenatal care, while 14 percent performed normal deliveries, with a range between 3 and 65 deliveries per year. Almost without exception, the graduates restricted themselves to uncomplicated obstetrics; only one graduate undertook cesarean sections and only five graduates acted as first assistant for this procedure.



Table 4. Location of Patient Encounters of Full-Time Physicians* (N=113)	
Location	Average Number of Encounters/Week
Office	103.4
Hospital	19.5
Emergency room	12.7
Nursing home	3.3
Home	1.2
<b>Total</b>	<b>140.1</b>
*Data from full-time physicians only (teachers, emergency room physicians, and others excluded)	

### Record Systems

Seventy-six percent of the graduates used problem oriented medical records; 12 percent were using family folders, and none were using genograms, but 19 percent used some form of data retrieval system.

### Hospital Privileges

Ninety-one (91.4) percent of the graduates had hospital privileges; eighty-nine (89.4) percent had received the privileges they requested; and ten (10.6) percent had been denied some privileges. Specifically, four graduates had some restrictions of orthopedic privileges, two of coronary care unit privileges, and two of pediatric surgical privileges. One graduate commented that a university hospital did not allow family practice privileges and one other indicated that application for privileges was pending.

### Personal and Professional Satisfaction

Through the questionnaire, the residency graduates expressed positive attitudes toward their residency training and the "real world" which they found in practice after they completed their residency. The graduates felt that their staff and patients met many of their expectations and that their staff were facilitating of their work as practitioners. The graduates indicated that their patients were generally appreciative and respectful of their (physician's) personal time and interests. They were not pleased with the quantity of leisure time available, and thought it could be increased.

In analyzing the data it was decided to calculate a "best" solution which would allow the exploration of the possible relationships between the most important items in the questionnaire and overall satisfaction. The solution was viewed only as a method to clarify perceptions, not as an accurate statistical representation of real world processes. To achieve this, a series of multiple stepwise regression formulations were completed. Details of



the methodology are available on request.

The resulting "best" prediction of satisfaction can be described in the following way. The best predictors of satisfaction for the residency graduate who completed the questionnaire were, in order of importance: (1) positive attitude about scheduling, including the personnel who answered the telephone and screened patients; (2) a patient population with whom the graduate felt comfortable; (3) relative comfort in dealing with hostile patients; (4) a positive attitude regarding the long hours which reduce leisure time; and (5) a positive attitude about reprimanding patients who were rude to practice staff.

The five-step solution described above showed that office scheduling was highly correlated with practice satisfaction. However, hostile patients had a negative effect on overall graduate attitudes. Most graduates felt that they had created a schedule and style of practice agreeable to themselves and their patients. While hostile patients seemed to make the graduates feel uncomfortable, they had no great difficulty in reprimanding patients who were rude to their staff.

There are two other findings of note which require a brief explanation. First, the overall satisfaction of the residency graduates was significantly moderated by the size of the community in which they were practicing. A different set of variables did the "best" job of predicting overall satisfaction for the physicians who practiced in small towns or cities compared with the graduates who practiced in a larger city or the suburb of a large city. Secondly, the residency graduates with their primary practice in the emergency room indicated significantly different attitudes about their residency program, their overall satisfaction, and their satisfaction with family medicine as a career. Some of the differences between emergency room and private practice can be found by comparing the mean scores in Table 5.

In general, the graduates who practice in an emergency room environment have considerably higher incomes and significantly more leisure time, including vacation time, than the group of residency graduates who are in fee-for-service practice. However, on almost all of the other variables, which describe attitudes toward residency training, patients, and staff, the emergency room physicians indicated a lower level of satisfaction than their private practice colleagues.

### *Preparation for Practice*

Finally, the graduates were asked to assess, in light of their experience in practice, the extent to which they felt prepared by their training to perform effectively.

Table 6 shows their responses to a list of content or process areas rated in terms of underpreparation, adequate preparation, or overpreparation. Several overall conclusions can be drawn from these responses. First, very few graduates felt overprepared in any area. In fact, only obstetrics, general surgery, and cardiology showed more than one or two responses. The vast majority of graduates felt adequately prepared for most of their practice needs, but inevitably there were some areas of practice in which the residents felt underprepared. Most noticeable were family structure and function, practice management, allergy, general surgery, obstetrics, orthopedics, psychiatry, and rehabilitation. Other areas showing fewer graduates who felt underprepared were the psychosocial components of major medical illness and ophthalmology. It must be noted that the questionnaire was phrased so that all graduates responded to the questions whether or not they were providing the service. The effect of this is particularly noticeable in obstetrics where the vast majority of the respondents were not providing obstetrical services.

### **Conclusions**

The profile presented by the residency graduates confirms that the overall objectives of the Department of Family Practice, which are related to meeting the primary care manpower needs of the state of Virginia, are being met. Generally, the graduates are settling in partnerships or group practices or building partnerships in previously underserved areas where they may have to function in solo practice for the first year or so. They provide a broad range of services that reflect the pattern usual in the mid-Atlantic corridor where even small rural towns are reasonably close to metropolitan areas, and the specialist and subspecialist resources they provide. This means that only a small proportion of graduates provide obstetrical and surgical services, but the



Table 5. Representative Items Selected from the Residency Graduate Questionnaire

	Private Practice	Emergency Room
Overall	Mean (Standard Deviation)	Mean (Standard Deviation)
Family Practice in "real life" is what I expected it to be (1=never; 3=sometimes; 5=always)	3.85( .79)	2.57( .53)
My residency training, in making practice decisions, has left me feeling (1=unsure; 3=adequate; 5=very capable)	4.27( .82)	3.63( .52)
My acceptability by the medical community is (1=inferior; 3=okay; 5=superior)	4.12( .85)	3.25( .71)
<b>Patients</b>		
My patient population is (1=hostile; 3=neutral; 5=appreciative)	4.12( .74)	3.00( .53)
I see patients at times convenient to them and not to me (1=strongly disagree; 3=neutral; 5=strongly agree)	2.92(1.02)	3.50(1.41)
My patient population is (1=trainable; 3=?; 5=untrainable)	2.40(1.00)	3.43( .79)
<b>Staff</b>		
My employees are pleasant with patients (1=never; 3=sometimes; 5=always)	4.22( .61)	3.75( .46)
Person who answers telephones and screens my patients is (1=incompetent; 3=acceptable; 5=best possible)	3.84( .73)	3.25( .70)
<b>Leisure</b>		
Time together for me, my spouse, and family is (1=inadequate; 3=about right; 5=more than adequate)	2.88( .99)	3.25( .71)
Amount of leisure time is (1=inadequate; 3=okay; 5=perfect)	2.82( .91)	3.25( .47)
The number of vacation days that I take (1=less than 6; 3=11 to 15; 5=greater than 20)	3.45(1.13)	4.57( .79)



**Table 6. Graduates' Evaluation of Residency Training as Preparation for Practice\***

Subject area	Percent of Graduates Who Feel:		
	Under-prepared	Adequately Prepared	Over-prepared
Care of common clinical problems (eg, fatigue, headache, ill-defined complaints)	2.8	94.4	2.8
Providing health maintenance	6.5	91.6	1.9
Use of common drugs	0.9	98.2	0.9
Family structure and function	21.5	77.6	0.9
Psychosomatic problems	16.8	80.4	2.8
Psychosocial components of major medical illness	14.0	85.1	0.9
Proficiency in physician-patient relations	7.5	91.6	0.9
Referral and consultation process	1.9	97.2	0.9
Allergy	31.8	68.2	0
Cardiology	3.7	91.6	4.7
Dermatology	7.5	89.7	2.8
Gastroenterology	2.8	96.3	0.9
Hematology	19.6	80.4	0
Neurology	17.8	82.2	0
Pulmonary	4.7	93.4	0
Radiology	15.0	85.0	0
Rehabilitation	30.8	69.2	—
Rheumatology	4.8	93.3	1.9
Newborn care			
Well-baby care and child development			
Developmental disorders			
Learning problems of childhood	} 10.4	88.7	0.9
Acute childhood illnesses			
Chronic childhood illnesses			
Uncomplicated delivery	} 42.0*	53.3	4.7
Forceps delivery			
Cesarean section			

\*Although a small proportion of the graduates were doing obstetrics, the questionnaire was phrased so that it was responded to by all graduates



Table 6. Graduates' Evaluation of Residency Training as Preparation for Practice,* continued			
Subject area	Percent of Graduates Who Feel:		
	Under-prepared	Adequately Prepared	Over-prepared
Gynecologic medical management	} 13.2	85.9	0.9
Gynecologic surgical management			
Office surgery and procedures	20.6	79.4	0
General surgery	27.1	69.2	3.7
Ophthalmology	18.7	81.3	0
Otolaryngology	8.5	91.5	0
Urology	2.9	97.1	0
Trauma	9.6	88.5	1.9
Fracture care	30.2	68.9	0.9
Stages of human development	} 26.4	71.7	1.9
Behavior disorders			
Psychiatric disorders			
Counseling skills			
Legal aspects of family practice	} 25.2	74.8	0
Organization of practice			
Personnel issues			
Financial management and business records			
Office management			
Clinical records			
Estate planning			

\*Although a small proportion of the graduates were doing obstetrics, the questionnaire was phrased so that it was responded to by all graduates

majority maintain an active hospital practice and are satisfied with their personal and professional existence.

The vast majority of the graduates feel adequately prepared for their career role, but some apparent deficiencies have been noted. More detailed studies are required to determine the precise nature of these deficiencies to allow the development of a more appropriate curriculum or an improvement in teaching techniques.

Finally, this study reinforces the department's commitment to establishing close, continuing, and

mutually supportive associations between the family practice residency training system in Virginia and the patient care, education, and research efforts of the Department of Family Practice.

**Reference**

1. Marsland DW, Jacoby KE, Mayo F, Munson PJ, Wergin JF, Wood M, Williams WL: A family practice education system based on patient care outcomes in family practice settings. *J Fam Pract* 11:251, 1980