Ophthalmology Training in US Family Practice Residencies

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Training in office ophthalmology is important in family practice residencies, especially because ophthalmology problems are common in family practice and only one quarter of medical students take structured ophthalmology clerkships in US medical schools. A joint committee of the American Academy of Family Physicians (AAFP) and the American Academy of Ophthalmology (AAO) has developed for family practice residents a core curriculum in ophthalmology listing essential cognitive knowledge and psychomotor skills.

A national study on the extent and type of training currently available in US family practice residencies was performed. Based on a response rate of 82 percent, structured ophthalmology training experiences are provided on a required basis by 93 percent of the programs. Of these, 63 percent offer block rotations normally of two or four weeks' duration. Although a majority of the cognitive areas and psychomotor skills recommended by the AAFP-AAO joint committee are likely to be covered in existing family practice residencies, gaps identified in both categories call for closer attention to improving the learning experiences of residents in this field.

Although office ophthalmology is readily recognized by practicing family physicians as an important part of everyday clinical practice, there is some question as to the adequacy of training during medical school and residency years of medical graduates entering family practice. Only about one quarter of medical students take structured ophthalmology clerkships (usually an elective) in US medical schools.[1] Graduate follow-up studies of residency-trained family physicians are somewhat limited in the area of ophthalmology, but three statewide studies in Virginia, Minnesota, and Washington revealed that 18.7, 28.9 and 43 percent of graduates in these states, respectively, felt underprepared in this area.[2-4]

In the earlier years of development of family practice residencies, curricular organization emphasized the major specialties as presented in the longitudinal family practice center experience and hospital or ambulatory clinical rotations. Ophthalmology was usually an elective or selective rotation in these programs, and the training and experience of many family practice residents in ophthalmology was often quite limited.

In response to these problems, a joint committee of the American Academy of Family Physicians (AAFP) and the American Academy of Ophthalmology (AAO) has developed the Core Curriculum in Ophthalmology for family practice residents identifying essential areas of cognitive knowledge and psychomotor skills in this area. A structured program in ophthalmology (especially ambulatory) comprising 40 to 80 hours of formal training has been recommended for all family

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practice residents.[5] This recommendation has recently been included in the currently applicable "Special Requirements for Residency Training in Family Practice" (of the "Essentials of Accredited Residencies") adopted by the Accreditation Council for Graduate Medical Education.

Since no information was yet available concerning the actual extent and type of training in ophthalmology offered in US family practice residencies, a national study was designed and carried out to identify present patterns of training in this area. This paper reports and comments upon the results of this study.

METHODS

A survey instrument was designed requesting information on type of residency program (ie, medical school based, community hospital, etc), number of residents in training, required vs elective status of ophthalmology training, amount and type of ophthalmology training provided, and plans (if any) for adding, deleting, or otherwise changing this area of training. In terms of specific content, respondents were asked to assess the probability of coverage (high—more than 75 percent; moderate—25 to 75 percent; or low—less than 25 percent) of all of the major cognitive knowledge areas and psychomotor skills recommended by the AAO-AAFP Core Curriculum in Ophthalmology. The survey instrument was then pilot tested among several family medicine faculty members and residents and revised accordingly.

All of the 387 approved US family practice residency programs as of February 1983 were mailed the questionnaire, and a follow-up mailing was made four weeks later if no response was received. Program directors (or a designated faculty member) were requested to complete the survey instrument. After two mailings, responses were received from 335 programs, a response rate of 86 percent.

Late, incomplete, and improperly completed responses reduced the number of programs in the analyzed sample to 319 (82 percent). These were representative of the size, geographic distribution, and types of accredited US residency programs in family practice. Responses were coded and entered for computer analysis with verification at two points, assuring the accuracy of encoded data.

RESULTS

Curricular Time Reserved for Ophthalmology Training

The amount of time reserved for ophthalmology training is not related to geographic region or to program type or size. All programs *requiring* ophthalmology training offer either block or concurrent rotations. Among those *elective* programs that offer block or concurrent rotations, the durations of the rotations are nearly identical to those in required programs. The results relating to curricular time can be reported therefore without the need to group programs by region, size, type, or requirements for ophthalmology training.

Two hundred ninety-six programs (93 percent) require ophthalmology training; 19 (6 percent) offer it as an elective. Two hundred two programs (63 percent) provide block rotations of one to four weeks' duration, with two-week blocks (139 programs) and four-week blocks (45 programs) accounting for more than 90 percent of the residencies offering block rotations.

Concurrent rotations are offered by 131 programs (41 percent). These range from 2 to 28 half-days in duration, either 12 half-days or 20 half-days being the most popular options, together accounting for 29 percent of all concurrent rotations. A few programs offer a required ophthalmology block rotation and additional elective time through a concurrent elective.

Structured training conferences in ophthalmology are offered in 222 programs (70 percent). In the course of three years, residents in these programs may be exposed to between one and 52 hours of such conferences with the highest number of conference hours available in programs not having block or concurrent rotations. The median number of conference hours for programs offering conferences is approximately six hours per resident over the three years.

Among the 19 programs for which ophthalmology is elective, eight report that 90 to 100 percent

of their residents take such training. For the remaining 11 programs the percentages of residents who elect ophthalmology are distributed evenly across the range from 0 to 80 percent.

Coverage of Ophthalmology Content and Procedures

The likelihood of coverage of the knowledge areas and procedures designated as belonging to the AAO-AAFP Core Curriculum in Ophthalmology is not related to geographic region, program type, or size, but is related to the status of ophthalmology training as either required or elective. Residents in programs requiring ophthalmology training are judged significantly more likely to cover both core knowledge areas ($\chi^2 = 14.2$, 2 *df*, $P < .001$) and procedures ($\chi^2 = 9.1$, 2 *df*, $P = .01$). Since 93 percent of programs require ophthalmology training and the likelihood of coverage in the remaining programs depends strongly on the resident's decision to elect such training, the results are reported only for those programs having an ophthalmology requirement.

Figure 1 displays the likelihood of coverage for each of the core knowledge areas. The indices were computed by averaging the ordinal ratings of "likelihood of coverage" described earlier. While the treatment of ordinal data as if they were interval data violates certain statistical assumptions, the results of this analysis can be interpreted as providing a rough comparison of the perceived likelihood of coverage of core knowledge areas across programs.

Figure 2 displays the likelihood of coverage for each of the recommended core skills with indices computed in the same manner as for the knowledge areas.

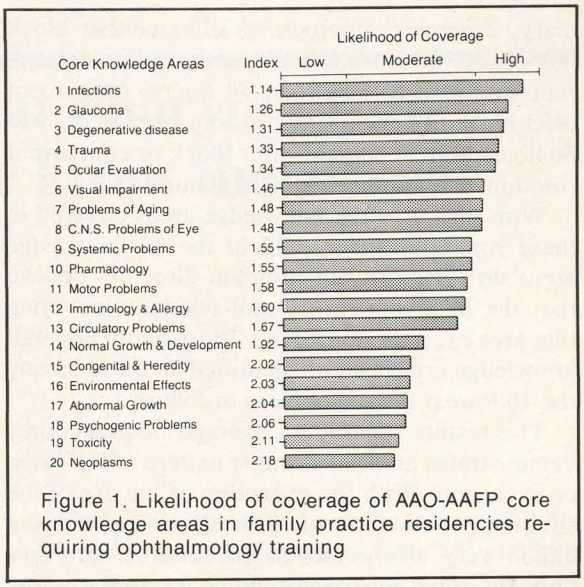

Figure 1. Likelihood of coverage of AAO-AAFP core knowledge areas in family practice residencies requiring ophthalmology training

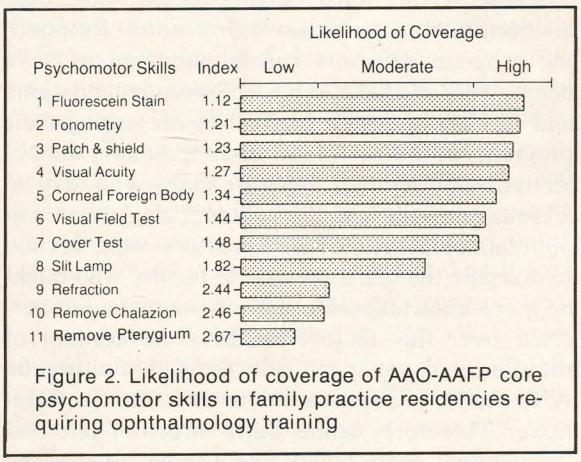

Figure 2. Likelihood of coverage of AAO-AAFP core psychomotor skills in family practice residencies requiring ophthalmology training

DISCUSSION

This survey was conducted to estimate the extent to which the newly recommended AAO-AAFP Core Curriculum in Ophthalmology is currently being implemented. The responding residencies report that the overwhelming majority of programs require ophthalmology training and that more than one half of the residents in the remaining programs elect such a rotation.

The recommendation of 40 to 80 hours of formal training also appears to have become the standard. Indeed, for the 63 percent of residencies offering block rotations, all include a minimum of 40 hours and the mean is approximately 90 hours, assuming 40 hours per week in a block rotation.

Among the residencies offering concurrent rotations, 78 percent reported a duration of 10 half-days or more, assumed equivalent to 40 hours. In sum-

mary, 2 percent of programs offer neither block nor concurrent rotations, 9 percent offer concurrent rotations of less than 40 hours, 69 percent offer block or concurrent rotations or both of 40 to 80 hours and 20 percent offer block or concurrent rotations or both exceeding 80 hours.

With regard to the knowledge areas covered in these rotations, in only 10 of the 20 knowledge areas do a majority of program directors believe that the likelihood of current residents covering that area exceeds 75 percent. These better covered knowledge areas can be identified as those having the 10 lowest index numbers in Figure 1.

The results regarding coverage of procedures demonstrates an even stronger pattern of inclusion or exclusion. With the exception of the use of the slit lamp, ophthalmologic procedures appear to be either very likely (seven procedures) or very unlikely (three procedures) to be covered on ophthalmology rotations.

These results must be interpreted with some caution, however, for several reasons. Responding program directors can be assumed to have been aware of the AAO-AAFP recommendations and to have a vested interest in presenting their programs in the best light. Even assuming the objectivity of directors, there are many who may be less than current with the content being covered in ophthalmology rotations. Directors were invited to delegate the questionnaire to faculty who might be more knowledgeable, but no control was exercised over this factor. Further, the content of rotations was not specifically defined in either the AAO-AAFP recommendations or in the questionnaire. Therefore, while most directors felt that "infections" were highly likely to be covered, no distinction was made between superficial and deep infections, nor was the term *covered* defined. This lack of specificity was deliberate, since greater detail was judged likely to reduce the number of responders without increasing the precision of the responses.

CONCLUSION

Training in ophthalmology is now a well-recognized part of the curriculum in US family practice residency programs, with adequate hours reserved to acquire core knowledge and skills. In the perception of residency directors, however, training in ophthalmology does not yet adequately cover the core knowledge and skills recommended by the joint AAO-AAFP committee formed to designate them. Thus, the curriculum agenda for family practice and ophthalmology should shift from concerns with hours to a closer focus of attention on the learning experience of residents and new ways to enhance this experience within the allotted time.

References

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