The following papers were presented as a seminar in graduate training in rehabilitation medicine at the 3rd Annual Meeting of Association of Academic Physiatrists, August 7, 1970, in New York City.

INTRODUCTION

Joseph Goodgold, M.D.*

On behalf of the American Association of Academic Physiatrists and the New York University Medical Center of Rehabilitation Medicine, I would like to welcome you to this symposium concerned with a topic of vital interest to all of us—Graduate Education. The panel members have been selected so as to present a diversity of perspectives ranging from a new look at some of the formal requirements for certification by the American Board of Rehabilitation Medicine to the other end of the spectrum, the critical opinions and sometimes mundane problems of the resident in training in our specialty.

It is our hope and anticipation that the exchange of words at this meeting will serve as artillery for an offensive in progress. The fact that the colloquy between panel members and audience is designed to be completely uninhibited will also serve as a potent and positive force—for it is the essence of progress that a certain degree of unreasonableness is required; it is so much easier and reasonable to compromise and somehow hold on to the status quo.

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FROM A RESIDENT'S POINT OF VIEW
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Across the nation housestaffs are confronting the administrative establishment. Ohio State is no exception. The foremost issues are hours of work and income. While these issues are important to survival of Residents and Post M.D. education, there are certainly more important issues in terms of education programs.

There seems to be traditional opinion, as reflected in education, that time in training implies competence. That is, that after a prescribed period of training some one is qualified to take an examination to become a certified specialist. Educators now emphasize that different people learn at different rates. The individual who learns at a slower rate is punished even more than the one who learns faster than the usual. It is for this reason that I propose that time as a criterion be dropped from Post M.D. education. In-service examinations and critical observation by the faculty would be much better methods to identify the readiness of a Post-MD student to terminate his formalized training and take his certifying examination.

The other major educational issue is evaluation of residency training programs. The American Board of Physical Medicine evaluates both the residents and the training programs. The evaluation by the resident of the program seems much more critical to me. I would like to see a honest assessment of strengths and weaknesses of training programs available to all prospective residents. When a physician decides to specialize in Rehabilitation Medicine he has no criteria to evaluate a program. Three years later he finds his program has not prepared him to be examined by the Boards or later in practice he finds that he may be totally unknowledgeable in some areas because of deficiencies in his program of which he was unaware. If the board would rate programs as to their strength and weaknesses, the applicant could at least have some basis for choosing one program over another. In-service testing may be one way to evaluate programs for their adequacies and voids and this information could be made generally available to prospective residents. Also it could provide excellent feedback to the directors of the programs where a particular resident needs help as well as where these programs have deficiencies.

The purpose of taking post M.D. training is to learn the basic principles of a specialty. The resident pays for this education in decreased income. We must ensure that this education is made available, otherwise we support exploitation.

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RESEARCH IN PHYSICAL MEDICINE AND REHABILITATION

Disease-oriented and Function-oriented Research
George H. Kraft, M.D.*

No field has greater research potential than physical medicine and rehabilitation. Our research advances are limited only by the shortage of physiatrists, and the fact that the tremendous clinical demand for physiatric services—accompanied by a greater monetary reward—drains potentially productive research oriented physiatrists into clinical practice. This, of course, is not to be condemned. After all, patient care is what medicine is all about. However, it is a major factor limiting the advancement of basic and applied research by physiatrists.

The opportunities for research in the field of physical medicine and rehabilitation are great because we deal with severe, debilitating diseases which, by and large, have no definitive cure. Inasmuch as no cure is known, there are unlimited needs for disease-oriented research. Also, because no cure is known, these diseases must be managed. The patient with a disability must be rehabilitated in order to maximize his physical, psychological, and vocational capacities for the remainder of his life, and research into his adjustment to disability and factors which might modify his functional limitations is needed.

Thus, on one end of the research spectrum our opportunities consist of studying diseases of the musculoskeletal and neuromuscular systems, as well as other diseases producing disability, such as those involving the cardiovascular and cardiopulmonary systems. This we might call disease-oriented research. On the other end of the spectrum is function-oriented research, or study of the patient's adjustment to his disability. This is an area utilizing the full capabilities of rehabilitation medicine, and an area in which physiatrists solely are concerned. Since most of the diseases we manage are major handicapping disorders, there are enormous opportunities for function-oriented research awaiting the investigator. This is going to be a more fruitful area of endeavor in the future as society becomes more concerned with health-care delivery systems and research into their improvement.

The field of physical medicine and rehabilitation almost cries out for research goals to be achieved. Physiatrists who treat patients with major disabling diseases can hardly help from being moved by these patients, and must feel the urge to do something to better understand the diseases.

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The physiatrist who manages a patient with severe rheumatoid arthritis is doing a great service to the patient when he makes him A.D.L. independent and able to function at a level previously not possible. On the other hand, does that physiatrist not feel a sense of humility when dealing with rheumatoid arthritis, and a desire to learn more about the disease in order to modify, prevent and possibly eliminate it?

A similar desire must have been felt a number of years ago by physiatrists managing children with poliomyelitis. While providing life-saving care to the patient during the acute stage of the disease, as well as managing the residual paralysis, wasn't the physiatrist also intrigued with the causes and filled with a need to better understand poliomyelitis?

Rheumatoid arthritis, degenerative joint disease and ankylosing spondylitis are only a few of the diseases of the musculoskeletal system which offer research opportunities for physiatrists. Dystrophies, myopathies, disorders of the myoneural junction, neuromas, amyotrophic lateral sclerosis and spasticity—as well as techniques for better diagnosis (e.g., electromyography)—are neuromuscular disorders which should be studied by physiatrists.

With regard to function-oriented research, understanding and improving the patient's physical capabilities is furthered by research into protheses, bracing and the effects of modalities on disease. Contractures and muscular atrophy should be investigated. The psychological responses of patients to dysfunction, and techniques of management of responses to disability are important functional research goals. Vocational modification and environmental modification offer many areas of study.

Research also has an important role in residency training in physical medicine and rehabilitation. Limited research projects have an educational value by helping residents to learn techniques of problem solving, as well as achieving a greater ability to critically evaluate new developments in medicine. Research should be a major teaching tool in a residency program so that residents can learn the techniques of project organizing, paper writing and paper presentation at scientific meetings in order to better equip them for their future roles as respected medical specialists. Thus, the field of physical medicine and rehabilitation encompasses a wide range of profoundly disabling diseases which may be investigated on either the disease or functional level.

TRENDS IN THE OFFICIAL FUNCTION OF THE AMERICAN BOARD OF PHYSICAL MEDICINE AND REHABILITATION*

The over-all trend of procedures in the American Board of Physical Medicine and Rehabilitation reflects the current trend in medical education as a whole—a continually increasing effort to produce well-qualified physicians in far greater numbers without lowering the standards for training in practice. It is difficult at best to establish objective criteria governing the quality of training programs and the competence of the individual specialist; moreover, residency review committees have found discrepancies between published descriptions of programs and the actual practices observed during on-site visits by Board members. This situation brings into question both the adequacy of the program and the competence of the individual. Test experts who have compared our Board examinations with those in other fields report that ours yield superior reliability indices. A review of individual scores has revealed a wide range of competence, and those who fail have scores that clearly show they are inadequately prepared. A diligent effort is made to improve each examination, not to make it more difficult but to provide items that represent the core of our specialty and reflect the changes in physiatric practice.

Therefore, the major trend in our field at present is directed toward closing the gap between the applicant actual training and his ability to meet the requirements for certification.

Many foreign Board candidates have been granted limited certification because they only passed Part One, or the written portion of the examination, with the intent of returning to their native country. Many of these physicians failed to return to their home country and the impression was created that they had unlimited certificates. In fairness to those who do qualify in both parts of the Board examination, the practice of issuing limited certificates was discontinued in June 1970.

The trends in graduate education in Physical Medicine and Rehabilitation will probably follow those of several other specialty boards. The trends involved flexibility in curriculums and changes in eligibility with a view toward shortening the time required to complete medical education. Dr. Earl Elkins, Secretary-Treasurer of the American Board of Physical Medicine and Rehabilitation has recently notified each program director of the possibility of recognizing a three year program that would include clinical experience comparable to that provided by an internship. With this plan,

*Summary of presentation by George H. Koepke, M.D., presented at a Seminar on Graduate Education in Physical Medicine and Rehabilitation—sponsored by the Association of Academic Physiatrists and the Academy Graduate Education Committee, on August 17, 1970, New York City.
our Board would become competitive with several boards. Each director has been encouraged to develop and submit a description of a "package program" to the Secretary-Treasurer of the Board. It is hoped that each program will provide at least six months experience in the diagnosis and treatment of acute conditions. The internship requirement can be waived only after the Board and the American Medical Association have reviewed and approved each special program.

The Committee on Graduate Education of the Academy of Physical Medicine and Rehabilitation, the Board, and at least 90 per cent of resident training program directors agree that a meaningful in-training service examination for residents is desirable providing the results are analyzed by competent testing agencies and an analysis of the examination and the comparative achievements of the residents are given to each program director. This would provide the Board and the Academy an annual record of residents, a comparison of the strength and weaknesses of training programs, a stimulus for better graduate teaching learning, and a guide to all of us concerned with graduate education.

It is my sincere hope that funds and a group of interested physicians will be available to develop an in-training service examination. These trends in graduate medical education and Board policies should result in sound growth and improved status for the physiatrist and his specialty.

TRENDS IN GRADUATE EDUCATION IN REHABILITATION MEDICINE

Nicholas S. Checkles, M.D.*

When one considers trends in graduate education in Rehabilitation Medicine, the first question that comes to mind is: What is post graduate medical education? Is it or should it be a continuation of the formal educational process, or is it a three year post M.D. "experience". The educational process is governed and provided by educational institutions UNTIL one receives his M.D. degree. It is clear that high schools grant diplomas and decide who graduates. Colleges grant degrees, Bachelors and Masters and PHD's, and decide who graduates. Colleges grant M.D's and decide who graduates. But then in physician education, things suddenly change. Post MD training may or may not be in an educational institution. Whether it is or not, the decision of whether one successfully completes the training or not does not rest ultimately with an educational institution.

Some 60 years ago the Flexner Report brought formal medical education into the University family. Who would argue today, that it has not found a home there or does not belong there? So the question we must ask ourselves is this: Is post MD training in a specialty, in other words residency, a continuation of this educational process? Is it truly graduate level education? It is my view that it is. If it is not, then I believe it should be. It seems to me that the prime responsibility for graduate medical education will and must follow the path of its parents—undergraduate medical education. It must be assumed by our Universities. I do not believe this will or can happen by decree, by passing resolutions or will it happen over night. But I do believe it will happen and should. We are currently witnessing exciting and significant changes in medical education that will have a profound influence on the training of physicians in all disciplines. The requirement of internship has become obsolete. Medical schools are condensing their curricula to three instead of the four traditional years. Medical schools are seeking and admitting students with background in other than the traditional natural sciences. More and more students are entering medical colleges with backgrounds in humanities, literature, arts and theology and many others. If it is clear that the student entering medical school is different, it is also clear the student completing medical school will be different.

The student entering post graduate medical training will be younger, he will have had fewer in-depth experiences in the basic sciences, and he

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will have less clinical and practical experience. Surely these voids in the educational process must be filled if the excellence of American Medicine is to persist. I see no alternative to the assumption of these responsibilities by specialty training programs. Post MD programs must, therefore, be able to provide their students with the basic science tools necessary to practice its particular discipline and must also be able to supply the student the where-with-all in clinical experiences to master the application of these tools. To me this means that there must be availability of basic science laboratories, of expertise in all the basic science disciplines which relate to the specialty field and opportunity to obtain and utilize the latest in educational techniques. I cannot conceive how this can be done well outside the university community.

How then do we prepare for these eventualities?

First I believe that we must identify the educational essentials of post MD training in our specialty. We must clearly identify our educational goals, curriculum content, what clinical experiences are optimal and how we can assess the effectiveness of our programs.

Secondly we must identify what in residency training is truly education and what is service. Education must be graded, supervised, evaluated and have clearly defined goals. In an applied clinical science such as medicine a certain amount of service is inseparable from the educational process. But sooner or later, every student reaches a stage of development when the services he renders have little further educational value. At this point, to demand that the student continue to provide these services without suitable compensation is exploitation. We must learn to identify when this level of competency is reached. We must shed the anachronism that competency in any field of endeavor occurs in a fixed period of time. It does not occur magically at the end of a three year period. For some it occurs much earlier. For others it may take even longer. This implies the desirability of open-ended periods of training.

Finally we must explore new ways and means to financially support residency training programs. If our specialty is a viable one and I believe it is, then our departments of rehabilitation medicine, our institutions and our patient services will continue whether we are actively engaged in training residents or not. The real issue then is where do we get the money to pay resident salaries. Government programs as Medicare, Medicaid demand identification of service and will not pay for education (even if it is disguised as service). The foregoing suggests the need for developing work study programs and integrating them within the post MD training period.

We must recognize that residents are graduate physicians who in most cases are licensed to practice medicine. When they perform a service which they are fully competent to perform, it is not education, it is service and this service is compensable. Resident physicians deserve adequate and fair income levels commensurate with their status as licensed physicians and attained levels of competency. It is incumbent on the educators to identify when competency is achieved in providing services. The need to develop such work-study, earn-as-you-learn programs is not only desirable but is indeed becoming clearly inescapable.
RESIDENCY TRAINING IN PM&R
Karl H. Hause, M.D.*

Introduction
The most important person in a Residency Training Program is the Resident. Motivation of Program Leader: Residency Training may be very low on list of his lifelong achievement goals. He might really want to be known only as a great Researcher—the teaching could be secondary in importance. There should be a sincere desire on the part of the Program Director to take pride in training residents in PM&R.

Pitfalls for the Program Leader (or how to keep residents away from your door in droves).

1. Exploitation of the resident (a service program only). Chief talking: "Take care of those sick patients and don't bother me."
2. Inhumane treatment—Resident is in the Program to learn not to be punished. It is very doubtful if any Specialty in Medicine can get away with this type of behavior today.
3. Inflexibility of training program with failure to meet the Residents' needs. This goes along with the latest trends in the newer curriculum in Medical Schools, as the Resident develops certain interests he should be allowed to pursue these.
4. The "Ivory Tower" attitude on the part of the Chief of the Service. Let's all be readily available to teach the Residents; don't use police dogs or fire hoses to keep the Residents out of your office.

If you have trouble securing or recruiting residents then look to yourself, the Program Leader, first.

How does one learn PM&R
Patterned after Osler’s method there are two approaches:

1. Patients alone and no reading, and
2. Reading alone and no patients.

Neither one of these methods are satisfactory, as patients should stimulate the physician to read and reading should stimulate the search for more knowledge of each patient. The Physiatrist Staff should not just teach minutia and isolated facts but their real mission is to create an atmosphere of learning which in turn stimulates and inspires the Resident to seek more and more knowledge on his own initiative. This is the definition of a true teacher.

A good Residency Program must have balance:

1. 1/3 Service—seeing and working up patients.
2. 1/3 Teaching Clinics and Didactic.
3. 1/3 Research or Reading—they should have time to read during working hours.

When a patient stimulates a Resident to read it should be done, and not at 10:30 in the evening.

What should Residents learn from full-time Staff, Attendings and Consultants:

1. How to take a history.
2. How to examine a patient. A Resident should be highly skilled at Musculoskeletal examination, Orthopedic examination and Neurological examination.
3. How to read x-rays—Residents should look at all x-rays on their own patients.
4. How to assess and logically manage patients both diagnostically and therapeutically.
5. How to evaluate disability.

There is a great need for frequent and adequate follow-up over a period of time in PM&R practice. Has our problem solving and planning been effective? Have we helped the patient? Only in this way can we understand the natural history of disease.

As the Resident progresses in his training he should have increased patient responsibility as well as increased teaching responsibility. Teaching helps one to learn and fix knowledge in one’s mind.

A Residency, at best, can give a Resident a firm basis and foundation in PM&R and hopefully from this the Physiatrist can grow and develop within his Specialty.
Bed Service

In modern Medicine this is absolutely a necessity in almost all training programs. However, it might be helpful to consider using a internist or a generalist physician to do the general medicine in the PM&R Ward.*

What are we trying to teach?

Why should there be discrepancies and differences of opinion in the scope of what the practice of PM&R actually is? May I suggest the following unusual approach for an explanation to this dilemma. The specialty field of PM&R varies with the environment in which it is practiced. What are these environments?

1. Academic—Medical School.
3. Governmental institutional practice, excluding VA.
4. Group Practice.
5. Individual Private Practice.
6. Federal Practice of Medicine, as in the VA.

Each physiatrist operating in a different environment has a different concept of the specialty. I compare these to the 3 blind men and their evaluation of an elephant. It depends on what part of the elephant they come in contact with as to how they describe it. What we should do is be concerned with the whole elephant.

And so it is in PM&R depending on which environment you practice, so are the parameters of the Specialty formed; they depend on each practice area. Therefore may I caution that if any one of these groups take over PM&R education exclusively the role of the physiatrist and his specialty may be weakened. I urge that the American Board of PM&R have representatives on it from each of the practice environments as outlined.

What I really wanted to say is that the VA can turn out well trained specialists in the field of PM&R.

*Editor's note = In our judgment it is not possible to separate good medical management into separate categories without slighting optimal rehabilitation and in fact compromising the resident's attitude towards responsibility for his patient.