



NATIONAL BOARD OF MEDICAL EXAMINERS

ASSOCIATION OF PHYSICIAN ASSISTANT PROGRAMS

STATEMENT CONCERNING THE DEVELOPMENT
of the
NATIONAL CERTIFYING EXAMINATION
for
ASSISTANTS TO THE PRIMARY CARE PHYSICIAN

August, 1973

The work reported herein is supported in part under contract No. NIH-~~NO1~~-AH-34031 with the U.S. Public Health Service, Department of Health, Education, and Welfare, and under grants from the Robert Wood Johnson and W.K. Kellogg Foundations.

NATIONAL BOARD OF MEDICAL EXAMINERS

ASSOCIATION OF PHYSICIAN ASSISTANT PROGRAMS

Statement Concerning the Development of the National Certifying Examination for Assistants to the Primary Care Physician

In April 1972, the National Board of Medical Examiners accepted the recommendation of its Committee on Goals and Priorities that the NBME assume responsibility for developing a national certifying examination for assistants to the primary care physician. This decision was made in recognition of the fact that physician's assistants are being trained in increasing numbers, and are becoming a significant component of the health care delivery system. The National Board has been involved for many years in the evaluation of medical students and physicians, and has developed considerable medical and psychometric resources and experience. Because the credentialing of physician's assistants is closely related to that of physicians, it appeared that the National Board, as an agency independent of the educational system, the employer and the profession itself, could most appropriately assume responsibility for developing a certifying examination which would be designed to assure that individuals have achieved minimum standards of proficiency in primary health care delivery.

The American Medical Association also recognized the need to develop appropriate certification procedures and endorsed the National Board's examination program. As a result, this program has proceeded with the cooperation of the AMA whose representatives serve as members of the NBME Advisory Committee on Physician's Assistants and Eligibility Subcommittee.

Because of the Department of Health, Education, and Welfare's interest in and support of programs designed to ensure quality health care delivery, a contract was negotiated with the Division of Allied Health Manpower for the partial support of this examination program. Additional support was also received from the Robert Wood Johnson Foundation and W.K. Kellogg Foundation.

ADVISORY COMMITTEE

An Advisory Committee (See Appendix A) was appointed to advise the NBME with respect to policy matters related to the development of the certifying examination. Membership on this Committee includes physicians involved in the development of this new category of health professional, physician's assistants and Medex, physicians who are employing P.A.'s and nurse practitioners, physicians who are training physician's assistants, and nurses concerned with the nurse practitioner concept. In addition, representatives from the Bureau of Health Manpower of NIH and the Community Health Service Programs of HSMHA serve on the Committee. It was felt that a committee comprised of individuals from a broad spectrum of related activities would provide the most effective forum for the identification, discussion, and resolution of issues related to test development.

Moreover, it was felt that the examination should be designed to assess the proficiency of individuals delivering primary health care who have graduated from a wide variety of training programs (e.g., physician's assistant/associate, Medex, family and pediatric nurse practitioner). A recent survey of training programs has disclosed that over 2,000 individuals will have graduated from these categories of training programs by the end of the calendar year. As the number of states enacting legislation regarding these health professionals has grown at a rapid pace, the need to provide a standardized mechanism for assessing proficiency has become even more urgent.

BASIC CONSIDERATIONS IN TEST DEVELOPMENT

Because this examination is being designed to assess the extent to which an individual has developed the competencies required to deliver health care as a physician's assistant, the following factors were viewed as fundamental to the development and design of an appropriate certifying examination:

1. What functions should the primary care physician's assistant be skilled in carrying out?
2. What knowledge and skills are required in order to carry out each specific function?
3. What evaluation methodologies can be employed to most effectively assess the knowledge and skill components of these various health care functions?

The difficulty of achieving consensus among experts in a field has often been viewed as a serious obstacle to the definition of the proficiency that a health care professional should possess in order to effectively assume responsibility for patient care.

Because available task analysis studies of the functions physician's assistants actually perform are limited in scope and sampling technique, and because the utilization of physician's assistants can be expected to reflect evolutionary changes for some time to come, it was felt that a methodology involving the judgments of experts in the field would be the most logical first step in identifying health care functions the P.A. should be skilled in performing. Moreover, since the P.A.'s proficiency would be viewed in terms of health care functions that constituted a body of "core" proficiencies, educational programs could continue to enjoy considerable flexibility in the content and design of their curricula.

TASK INVENTORY STUDY

In order to arrive at a consensus definition of the proficiency a primary care physician's assistant should possess, the health care functions that a P.A. needs to be skilled in performing had to be identified.

A review of existing task inventories concerning physician and non-physician health care providers was undertaken with the purpose of compiling a comprehensive list of health care functions.¹ As a result of this review, over eight hundred health care functions were identified.

¹The following resources provided the most useful task inventory data:

- a) Golden, Archie S., and Johnson, Robert. A Task Inventory for Non-Physician Health Teams in Primary Care. The Center for Allied Health Careers and the Health Services Research and Development Center. The Johns Hopkins Medical Institutions, February, 1972.
- b) Medex Program Patient Contact Record Feedback Report. Health Services Manpower Branch, National Center for Health Services Research and Development.
- c) Physician Task Profile. Technomics, Inc., 1972.

In order to organize these functions for easy review by a group of experts, and to facilitate the addition of any health care functions not on the list but relevant to the physician's assistant, these several hundred entries were organized into a large task inventory under the following headings:

I. DATA GATHERING

- A. HISTORY AND PATIENT RECORDS
- B. PHYSICAL EXAMINATION
- C. LABORATORY TESTS AND INVESTIGATIVE PROCEDURES
- D. PATIENT MONITORING

II. ANALYSIS AND INTERPRETATION

III. MEDICAL AND HEALTH CARE STRATEGIES

- A. EMERGENCY PROCEDURES
- B. SURGICAL PROCEDURES
- C. CLINICAL PROCEDURES
- D. MANAGEMENT AND THERAPY

A group of twenty experts (members of the National Board Advisory Committee on the Physician's Assistant) reviewed individually the task inventory of health care functions. A sample group of tasks and the four rating categories which were developed are provided in Table 1. Each of the experts was asked to read and consider each of the functions listed on the thirty-three page task inventory, and indicate by placing a check in the appropriate column to the right whether it was one the Type A primary care P.A. should definitely, probably, probably not, or definitely not be skilled in performing. (Since this examination was being developed to assess the proficiency of the Type A primary care physician's assistant, the conceptual definition of this type of P.A. developed by the National Academy of Sciences was used as a point of departure.)

A frequency distribution of the twenty judgments made concerning each health care function was compiled for all functions listed on the task inventory. Each of the four rating categories was given a numerical value on a scale of one to four: a value of four being assigned to the "definitely" category, and a value of one to the "definitely not" category. In turn, each judgment made by a rater was given a numerical value on the basis of the column into which a check had been placed.

The arithmetic mean of these judgments was then computed for each health care function. Those functions receiving a mean value of 3.50 - 4.00 were considered as ones that, in the view of expert opinion, a Type A primary care physician's assistant should definitely be skilled in performing. Functions receiving a mean value of 3.40 - 3.49 were reviewed by this expert group at a meeting during which the results of this task inventory study were presented.

As a result of this task inventory study, over five hundred health care functions were identified as ones the primary care physician's assistant should definitely be skilled in performing. The relatively large number of functions was due to the fact that each one was stated quite specifically rather than as a broad category. For example, the functions relating to history taking appear as eleven separate entries on the inventory, ranging from inquiring about the

Table 1

Example of Task Inventory Format with
Sample Functions within Selected Categories

	DEFINITELY	PROBABLY	PROBABLY NOT	DEFINITELY NOT
HISTORY AND PATIENT RECORDS:				
ask history since last illness				
write patient summaries				
PHYSICAL EXAMINATION:				
examine eyes using ophthalmoscope				
test reflexes				
LAB TESTS/INVESTIGATIVE PROCEDURES:				
perform white blood cell count				
determine urine pH, sugar, protein, and specific gravity				
take throat culture				
initiate request for chest x-ray				

Table 2

Sample Task Inventory Entries and Format Used
in the Priority Study

	FREQUENCY				CRITICALNESS			
	high			low	high			low
EMERGENCY PROCEDURES:								
perform closed chest cardiac massage								
control external hemorrhage								
SURGICAL PROCEDURES:								
suture minor lacerations								
incise and drain abscess								
excise wart surgically								
CLINICAL PROCEDURES:								
apply and remove cast								
obtain an electrocardiogram								
COUNSELLING:								
counsel for growth and development								
explain venereal disease								

patient's chief complaint to conducting a review of systems. In a similar manner, wound care including suturing minor lacerations appears as four separate entries: cleanse, irrigate, debride, and suture minor lacerations.

It was felt that functions receiving a mean value of 2.50 - 3.40 (and judged to be ones the primary care physician's assistant should probably be skilled in performing) might well reflect areas in which training programs differed somewhat in their educational objectives as well as geographic variations in health care delivery. Since the examination was to be administered nationally, it seemed more appropriate for it to be designed to assess proficiencies that all primary care physician's assistants should possess.

The limitations of time and resources available for evaluation emerged as a second major issue, and lead to the next phase of test development: a priority study.

PRIORITY STUDY

A review of the health care functions identified from the task inventory study suggested that not all functions were equivalent in terms of their importance to the proficiency of the primary care physician's assistant. Moreover, the number of functions was so large that it was evident that no examination program could attempt to sample adequately the knowledge and skills related to all of them. For these reasons, a priority study was conducted using the same experts who had participated in the task inventory study, plus four additional experts, all of whom were pediatricians. The use of additional pediatric expertise seemed necessary in order to assign priorities relevant to health care in a pediatric practice setting.

The purpose of the priority study was to establish the relative importance of the several hundred health care functions, so that those receiving the highest rating would serve as the primary focus for the development of the first examination for primary care physician's assistants.

Two dimensions were selected as the basis for determining the priority of each health care function: 1) the frequency with which this function might be carried out in a primary care practice, and 2) its "criticalness" to optimum health care delivery.

In order to determine the priorities of the more than five hundred functions identified from the first phase of test development, a second task inventory was prepared using the categories as listed on page three. The two dimensions which were to serve the basis for arriving at these priority ratings (i.e., frequency and criticalness) were represented by two scales, each consisting of four intervals. The anchor points of each scale were labeled "high" and "low". Table 2 illustrates the format of the inventory used in this priority study.

Each member of the group of expert judges was asked to consider the functions included on this second inventory and to indicate how frequently he felt the task would be performed in a primary care practice and how critical its effective performance was to optimum health care delivery.

A frequency distribution of the judgments made regarding the frequency and criticalness of each health care function was compiled. A mean value for each health care function on each dimension was calculated by assigning a numerical value of 1 to 4 to the intervals on each scale as was done in the first task inventory study.

The priority value assigned to each health care function was determined by using the following formula: $P = \bar{f} + 2(\bar{c})$, where $\bar{f}$ is the mean frequency value and $\bar{c}$ is the mean criticalness value. The criticalness value was weighted more heavily than that of frequency because it was recognized that while some functions are performed infrequently (e.g., closed chest cardiac massage), they often involve life-and-death implications when they are required as a part of health care delivery. The use of the above formula resulted in a scale whose range was 3.00 - 12.00. Those functions receiving a priority value of 8.00 - 12.00 were further analyzed, in the manner described below, in order to serve as the basis for developing examination materials and evaluation procedures.

TEST COMMITTEES

Since the validity of an examination as an assessment of proficiency depends on its capacity to evaluate accurately the knowledge and skills required to carry out specific health care functions, test committees have been appointed to analyze these high priority health care functions and identify the knowledge and skill components related to each. Three such committees have been appointed, and have assumed responsibility for developing examination materials in the following areas: cognitive and problem-solving skills, interpersonal skills, and psychomotor (performance) skills. (A list of committee members is provided in Appendix B.)

These test committees have been meeting regularly over the last year to specify the criteria related to each health care function and to develop appropriate examination materials designed to assess these criteria.

SUMMARY OF HEALTH CARE FUNCTIONS

On the basis of the task inventory and priority studies described in previous sections, the following health care functions were identified as ones the assistant to the primary care physician should be skilled in performing. The certifying examination has been designed to assess a candidate's knowledge and skill in applying knowledge related to these health care functions.

1. Screen patient to determine need for medical attention
2. Take a patient history
3. Perform a physical examination
4. Initiate appropriate evaluation and emergency management for emergency situations (e.g., cardio-pulmonary distress, poisoning, shock, hemorrhage)
5. Perform developmental screening examination on children
6. Record pertinent patient data
7. Initiate requests for initial blood analyses
8. Initiate requests for initial urine analyses
9. Initiate requests for initial stool analyses
10. Initiate requests for initial x-ray studies
11. Collect specimens for blood, urine, and stool analyses
12. Carry out blood, urine, and stool analyses
13. Collect specimens for blood, urine, stool, and nasopharyngeal cultures
14. Do cultures on blood, urine, and stool specimens
15. Review history, physical examination, and laboratory data to identify normal and abnormal findings
16. Gather patient data and make management decisions concerning patients being seen for the initial evaluation of a problem
17. Gather patient data and make management decisions concerning patients being seen for the follow-up evaluation of a previously diagnosed condition
18. Review patient records to determine health status
19. Provide counselling or instruction to patients regarding common problems
20. Prepare written patient summaries
21. Perform a venipuncture
22. Administer intradermal tests

23. Take an electrocardiogram
24. Insert a urinary catheter
25. Cleanse and debride minor lacerations
26. Suture minor lacerations
27. Apply and remove plaster casts
28. Apply and remove splints
29. Control external hemorrhage
30. Perform closed-chest cardiac massage
31. Perform artificial respiratory ventilation
32. Defibrillate a patient
33. Apply dressings and bandages
34. Administer medications (oral or topical)
35. Administer medications (IM injection)
36. Administer immunizations (orally or by injection)
37. Give intravenous fluids
38. Give transfusion of blood or blood components
39. Remove superficial foreign bodies
40. Perform audiometry screening
41. Perform visual screening
42. Carry out aseptic technique
43. Carry out isolation techniques

DECEMBER 1973 EXAMINATION

The first certifying examination has been scheduled for December 12, 1973, and will consist of a one-day written examination.

The morning session of the examination will consist of multiple-choice questions and other objective items designed to measure cognitive knowledge and skill in applying that knowledge. Examination questions have been submitted by each of the three test committees. These questions involve clinical material presented in pictorial and non-pictorial form, and relate to both adult and pediatric medicine.

The afternoon session will be based upon simulated clinical cases (patient management problems). These involve the presentation of clinical cases, designed to assess the skill of the physician's assistant in gathering patient data and in making appropriate management decisions. Emergency and non-emergency situations, concerning initial and follow-up evaluations of patients will be included. Clinical material will be drawn from adult and pediatric medicine.

A brochure containing sample multiple-choice questions and patient management problems is now being prepared for distribution at the earliest possible date.

ELIGIBILITY

A committee on eligibility for the certifying examination has been appointed and has met on several occasions to consider eligibility requirements for the 1973 examination as well as eligibility requirements for future examinations. (A list of committee members is provided in Appendix C.) The recommendations of the Eligibility Committee have been reviewed and approved by the Advisory Committee on Physician's Assistants as well as by the Executive Committee of the National Board.

An individual is eligible to register for the 1973 examination if he has graduated or will have graduated by January 31, 1974 from:

1. A program that has been approved by the AMA Council on Medical Education for training assistants to the primary care physician.
2. A program that has received preliminary approval by the AMA Council on Medical Education for training assistants to the primary care physician.
3. A program that has been funded by the Bureau of Health Manpower Education (not included in the above categories) that trains assistants to the primary care physician.
4. A program of at least four months' duration within a nationally accredited school of medicine or nursing that trains pediatric or family nurse practitioners.

It is anticipated that in subsequent years, eligibility for the certifying examination will be expanded to include individuals who have acquired relevant proficiency through job history and work experience. Criteria for the evaluation of applicants with this type of background are currently under development.

A brochure describing the examination and an application form are enclosed for your information.



NATIONAL BOARD OF MEDICAL EXAMINERS

ADVISORY COMMITTEE FOR THE EVALUATION OF PHYSICIAN'S ASSISTANTS

Chairman: Edmund D. Pellegrino, M.D.
Vice President for Health Sciences
State University of New York

Mrs. Kathleen G. Andreoli, R.N., M.S.N.
Educational Director
Physician's Assistant Program
University of Alabama in Birmingham

Gene Bont, M.D.
Black River Medical Group

J. Thompson Bowles, M.D., Ph.D.
Director, Division of Curriculum
and Instruction
Association of American Medical Colleges

Mr. Barry Cassidy, P.A.
Physician's Assistant Program
George Washington University

C. Hilmon Castle, M.D., Professor and
Chairman
University of Utah Medical Center

Francis C. Coleman, M.D., Chairman
AMA Council on Health Manpower

Robert Conant, Ph.D.
Assistant Chief
Allied Health Professions Branch

Nicholas Danforth, M.D.
Assistant Dean
Dartmouth School of Medicine

William E.g. deAlva, M.D., AAFP ABFP
Diplomate, American Board of Family
Practice

Douglas A. Fenderson, Ph.D., Director
Office of Special Programs
Bureau of Health Manpower Education

Robert Gibbs, M.D.
Chief, Medical Service
Veterans Administration Hospital

Mr. Thomas R. Godkins
Associate Director
Physician's Associate Program
University of Oklahoma Health
Sciences Center

Archie Golden, M.D., Director
Health Associate Program
Johns Hopkins School of Health
Services

Mr. Nicholas Griffin, Director
Division of Medical Practice
American Medical Association

Paul D. Lairson, M.D.
Associate Medical Director
Bess Kaiser Hospital and the
Permanente Clinics

Eleanor Lambertsen, R.N., Ed.D., D.Sc.
Dean and Professor
Cornell University - New York Hospital
School of Nursing

Miss Margaret E. Mahoney
Vice President
The Robert Wood Johnson Foundation

John Ott, M.D.
Assistant Professor of Pediatrics
University of Colorado Medical Center

Malcolm Peterson, M.D., Dean
Johns Hopkins School of Health
Services

Frank Riddick, M.D., Chairman
Assistant Medical Director
Ochsner Clinics

Daniel S. Rowe, M.D.
Director, Professional Services
Yale University Health Services

NATIONAL BOARD OF MEDICAL EXAMINERS

ADVISORY COMMITTEE FOR THE EVALUATION OF PHYSICIAN'S ASSISTANTS (CONT'D)

Alfred M. Sadler, Jr. M.D.
Assistant Vice President
The Robert Wood Johnson Foundation

Blair L. Sadler, J.D.
Assistant Vice President
The Robert Wood Johnson Foundation

Henry K. Silver, M.D.
Director, Child Health Associate Program
University of Colorado Medical Center

Eugene A. Stead, Jr., M.D.
Professor of Medicine
Duke University Medical Center

Malcolm C. Todd, M.D.
President-Elect
American Medical Association

Mr. Steven Turnipseed, Coordinator
Physician's Assistant Program
School of Health Professions
State University of New York

Sheridan Weinstein, M.D.
Acting Director
Division of Medical Care Standards
Department of Health, Education, and
Welfare

Mr. Robert Woodruff
Medex
Eastern Washington State College

NATIONAL BOARD OF MEDICAL EXAMINERS

Physician's Assistant Subcommittee Memberships - INTERPERSONAL SKILLS

Mrs. Kathleen G. Andreoli, R.N., M.S.N.
Educational Director
Physician's Assistant Program
University of Alabama in Birmingham

Nicholas Danforth, M.D.
Assistant Dean
Dartmouth School of Medicine

Archie Golden, M.D.
Director, Health Associate Program
Johns Hopkins School of Health Services

Donald Naftulin, M.D., Director
Division of Continuing Education
University of Southern California

Lois Pounds, M.D.
Director, Pediatric Ambulatory Services
Duke University Medical Center

NATIONAL BOARD OF MEDICAL EXAMINERS

Physician's Assistant Subcommittee Memberships - KNOWLEDGE AND PROBLEM-SOLVING

Robert Kane, M.D.
Assistant Professor
Department of Community and
Family Medicine
University of Utah Medical Center

John Ott, M.D.
Assistant Professor of Pediatrics
University of Colorado Medical Center

Malcolm Peterson, M.D.
Dean, School of Health Services
Johns Hopkins School of Health Services

Harold Sox, M.D.
Assistant Professor of Medicine
Veterans Administration Hospital

Warren F. Dodge, M.D.
Professor of Pediatrics
Chairman, Department of Health
Care Sciences
The University of Texas Medical Branch

Michael M. McCally, M.D.
Director
Physician's Assistant Program
The George Washington University
Medical Center

Claibourne Dungy, M.D., M.P.H.
Assistant Professor of Pediatrics
University of Colorado Medical Center

David Fisher, M.D.
Medex Director
University of Utah Medical Center

NATIONAL BOARD OF MEDICAL EXAMINERS

Physician's Assistant Subcommittee Memberships - PSYCHOMOTOR

Mr. William Stanhope, Director
Physician's Associate Program
University of Oklahoma

Bella Strauss, M.D.
Director, Medex Program
Dartmouth School of Medicine

Mr. Steven Turnipseed, Coordinator
Physician's Assistant Program
School of Allied Health Professions
State University of New York

Katherine Anderson, M.D.
Medical Director
Physician's Assistant Program
The Bowman Gray School of Medicine

Robert Luchi, M.D.
Physician's Associate Program
Baylor College of Medicine

NATIONAL BOARD OF MEDICAL EXAMINERS

Physician's Assistant Subcommittee Membership - ELIGIBILITY

Mrs. Kathleen G. Andreoli, R.N., M.S.N.
Educational Director
Physician's Assistant Program
University of Alabama in Birmingham

Ray L. Casterline, M.D.
Executive Director
Educational Council for Foreign
Medical Graduates

Douglas Fenderson, Ph.D.
Director, Office of Special Programs
Bureau of Health Manpower Education

Eleanor Lambertsen, R.N., Ed.D., D.Sc.
Dean and Professor
Cornell University - New York Hospital
School of Nursing

Alfred M. Sadler, Jr., M.D.
Assistant Vice President
The Robert Wood Johnson Foundation

Blair Sadler, J.D.
Assistant Vice President
The Robert Wood Johnson Foundation

Malcolm C. Todd, M.D.
President-Elect
American Medical Association