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ABSTRACT

Twenty-one recommendations are made to hospitals, medical schools, health-care payers, and government agencies involved in graduate medical education (residency programs) in New Jersey. The recommendations address five areas of concern: program quality; qualifications of trainees; the relationship between graduate medical education (GME) programs and health care delivery; financing of GME costs; and mechanisms for future government action. Recommendations include the following: (1) new training opportunities in ambulatory care and long-term-care settings should be developed for inclusion in all residency programs preparing physicians for initial certification within a specialty; (2) standards for GME candidate selection should be raised statewide; (3) a reduction in the number of residency positions in New Jersey should be planned over the next 5 years using a combination of voluntary incentives and regulatory means; (4) reimbursement for individual resident stipends and fringe benefits should be limited to the minimum number of years required for board certification, with one additional year for chief residents; and (5) the current teaching hospital classification system used for hospital rate setting should receive continued examination. Appendices describe methods for projecting physician need, supply and demand and a medical manpower study (1986 physician supply and projections) conducted by the University of Medicine and Dentistry of New Jersey. (KM)

The Next Generation of Physicians

A Report of the Advisory Graduate Medical Education Council of New Jersey

Quality Medicine
Volume Two
March, 1987

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SUMMARY

Over the past few years, the evidence has mounted showing need for greater state-wide planning and coordination of graduate medical education (residency) programs in New Jersey. As latecomers to medical education, the State of New Jersey and its graduate medical education (GME) programs have traditionally relied heavily upon graduates of foreign medical schools to fill residency positions. This factor has raised questions about both the real and perceived quality of the training provided in New Jersey hospitals. Since initiation of a state monitoring system in 1977, the number of GME programs and residents in the state has increased steadily at a rate twice the national average. This growth occurred despite constant, and in some cases declining, enrollment in United States medical schools and growing awareness of a national abundance of physicians. Meanwhile, the federal government, which provides about half of the financial support for New Jersey's GME programs through the Medicare and Medicaid programs, has established new policies to control health care costs through limitations on reimbursement for GME. Reduced funding for GME threatens to undermine the ability of teaching hospitals to provide the educational administration, faculty and instructional settings for high quality training.

These issues spurred New Jersey's Advisory Graduate Medical Education Council (AGMEC) to prepare the state's first general policy guidelines reported in *A Policy Prospectus for Graduate Medical Education in New Jersey* (1984). The continuing importance of those issues inspired the Council to seek more specific expressions of the general policy to better assure appropriate quality, size, distribution, and financing for New Jersey's GME system in the future. The Council's two task forces appointed for this purpose have made 21 recommendations directed at the hospitals, medical schools, health care payers, and agencies of government involved in graduate medical education. They address five areas of concern: program quality; qualifications of trainees; the relationship between GME programs and health care delivery; financing of GME costs; and mechanisms for future governmental action.

Supporting Program Quality

In AGMEC's view, GME programs must focus their attention upon the preparation of physicians qualified for the independent provision of high quality medical care. This requires that every GME program individually attain excellence in its curriculum and instruction. Program accreditation from the national Accreditation Council for Graduate Medical Education provides a baseline for this quality assurance. As an additional aspect of program quality, New Jersey programs should also keep pace with current changes in medical education and practice. This requires that GME programs develop settings for training in ambulatory and long term care. It also requires that programs develop a strong affiliation with a medical school to assure improved curricular integration of undergraduate with graduate medical education, faculty and program evaluation, and a mutual exchange of resources. The Council recommends:

1. For all residency and fellowship programs in specialties or subspecialties for which there is an accreditation process, maintenance of accredited status should be a requirement for reimbursement of GME program costs from patient care revenues.

2. New training opportunities in ambulatory care and long term care settings should be developed for inclusion in all residency programs designed to prepare physicians for initial certification within a specialty.

3. Graduate medical education should be integrated more effectively with undergraduate medical education.

4. Organizational relations and responsibilities for graduate medical education programs, including the respective roles of the University of Medicine and Dentistry of New Jersey, other medical schools, non-hospital health care institutions and the state's teaching hospitals, should be clarified and formalized.

5. Graduate medical education program affiliation agreements with medical schools should be clarified in written contractual terms that specify responsibilities for such issues as faculty appointments, breadth of training opportunities, program evaluation, faculty in-service education and mutual availability of hospital and medical school resources.

6. Only those programs that meet affiliation standards should be eligible for reimbursement of resident costs through the hospital rate setting system.

Assuring Standards in Resident Selection

The quality of trainees recruited into GME programs is a key variable in the future quality of medical care in New Jersey. Programs should continue efforts to attract applications from American minorities and women. Standards for candidate selection should assure that, at minimum, program graduates will be eligible for licensure in New Jersey. As much as possible, the process must also assure that each resident is fully prepared through previous training to begin practicing medicine under supervision. Regulatory means including limitations on hospital reimbursement should be used to reinforce state-wide implementation of minimum standards for resident selection. The Council recommends:

7. Standards for GME candidate selection should be raised state-wide. Resident selection should be limited to graduates of Liaison Committee for Medical Education and American Osteopathic Association accredited schools and to those graduates of foreign medical schools who meet both of the following criteria:

A. Effective with the class beginning July 1, 1987, the resident must have demonstrated competence in medicine by presenting documentation of having earned a medical school diploma and passing the Foreign Medical Graduate Examination in the Medical Sciences (FMGEMS) within three attempts.

B. The resident must have competence in English as demonstrated by passing an English exam or presenting a degree (such as a B.A.) from a college or university indicating equivalent or greater English language skill.

8. Residents in GME programs should meet all minimum criteria established by the New Jersey State Board of Medical Examiners as required for their eventual licensure in New Jersey prior to entry into residency training. Standards for candidate selection should be refined to reflect minimum requirements for a New Jersey medical license, with the exception of specific requirements for graduate medical education itself.

9. Standards for candidate selection should be reinforced through regulatory means including limitations on reimbursement for unqualified candidates. After July 1, 1987, reimbursement for first year residents' stipends and fringe benefits should be limited to those who meet the standards specified in Recommendations 7 and 8.

10. Efforts to increase the representation of American minorities and women in graduate medical education should be continued.

Relating Graduate Medical Education to Health Care Delivery

Currently, no mechanism balances individual hospital objectives in the training of physicians with New Jersey's health care needs. Yet, the state-wide system of GME programs affects both the number and mix of specialists produced to support the state's projected healthcare needs and the geographic availability of services. Regarding the number of specialists, the overall training capacity of the state's GME system is larger than needed to meet projected physician manpower needs. In fact, the Council recommends a reduction in the number of GME positions to allow available financing to be concentrated upon needed improvements in program quality. Such reductions should be apportioned among specialties, postgraduate years and geographic locations on the basis of projected patient care needs in the state. The Council recommends:

11. The present moratorium on increases in the total number of residency positions approved for payment under the hospital rate setting system should be continued as an immediate means to limit growth in residency positions.

12. A reduction in the number of residency positions in New Jersey should be planned over the next five years using a combination of voluntary incentives and regulatory means.

13. Reductions in graduate medical education positions should be apportioned among the postgraduate years and among the medical specialties and subspecialties based on the appropriateness of existing training capacity for projected patient care needs in the state.

14. Planning decisions regarding graduate medical education should give consideration to the geographical distribution of residents, physicians, and state population.

Guidelines for Funding of Graduate Medical Education Programs

The strongest influence shaping GME programs is, of course, available financing and rules governing its distribution. The New Jersey Department of Health has asked AGMEC to provide advice on refinements in reimbursement to teaching hospitals that would support state objectives in graduate medical education. Because of the state's waiver from the national Medicare payment system, New Jersey has particular flexibility to implement its own policies in GME.

As a first principle, the primary source of support for GME should continue to come from patient care revenues. However, rules governing GME cost reimbursement can better support standards of quality by requiring program accreditation, a medical school affiliation contract, and minimum qualifications for trainees. In order to guide additional changes in GME payment mechanisms to achieve goals in health care delivery and health cost containment, the Council recommends:

15. Initial reductions in the number of residents should be encouraged through financial incentives. These incentives should allow hospitals to replace residents with other full-time health professionals and/or to develop new ambulatory or long-term patient care services.

16. Reimbursement for individual resident stipends and fringe benefits should be limited to the minimum number of years required for board certification. An allowance of one additional year should be permitted for selected individuals such as chief residents. Reimbursement for subspecialty training subsequent to initial certification should be limited to areas with an identified state need.

17. Patient care reimbursement methods should be redesigned to support needed educational changes such as increased ambulatory training.

18. The current teaching hospital classification system used for hospital rate setting should receive continued examination. Revisions should be based upon state objectives in graduate medical education and the identification of actual costs of quality training to hospitals.

19. Proposals for supplemental methods for the generation and distribution of graduate medical education funds should be developed.

Steps to Implementation

Implementation of substantial improvements in the quality of GME in New Jersey will require that state government play a stronger planning and monitoring role. The means to improve the state's GME programs are distributed among several departments of state government, each of which must coordinate policies and staff toward common goals. The Advisory Graduate Medical Education Council can assist this effort by providing technical assistance, planning objectives, and advisement through its Manpower and Public Information Committee.

20. The Chancellor of Higher Education, the Commissioner of Health, the Commissioner of Human Services and the Director of the Division of Consumer Affairs should designate key staff to participate in an interagency GME working group. These

persons should be authorized to commit agency resources to implement the recommendations in this report.

21. The Manpower and Public Information Committee should be charged with performing a strategic planning function within the Advisory Graduate Medical Education Council. This committee should provide specific planning objectives and advisement on state actions affecting graduate medical education programs in New Jersey.

The Advisory Graduate Medical Educatien Council is proud of the accomplishments of the state's graduate medical education programs. Over the past decade, some excellent new primary care training programs and needed specialized training programs have been developed. The state's programs have grown steadily more competitive with GME programs in other states. The AGMEC believes that implementation of the recommendations of its task forces will help assure continued improvements in the quality of New Jersey GME programs and in their appropriateness to future health care needs of the state.

INTRODUCTION

Graduate medical education is a formal course of apprenticeship developed to help physicians grow from students into independent medical practitioners. From its beginnings as a one-year internship, graduate medical education has grown into a complex of more than 40 specialty and subspecialty tracks requiring three to eight years of training beyond medical school and leading to eligibility for specialty certification. Since the 1920's, most states have required at least one year of graduate medical education (GME) for licensure. Five states now require two years of GME before licensure for all physicians, while seventeen states including New Jersey require three years of GME for graduates of foreign medical schools.(1) Three years of GME are now commonly viewed by medical professionals as part of basic preparation for competent medical practice for all physicians. Thus, graduate medical education has become an essential component in the preparation of competent physicians.

Improvements in the quality of GME must be accelerated in order to assure that residency training keeps pace with changes in the practice of medicine. The total time required to train a physician in the United States today can exceed fifteen years. High school graduates of today who have their sights set upon becoming physicians are separated by nearly a generation from those who have entered practice recently. The quality of medicine these future physicians will practice tomorrow depends upon the educational programs that are provided today.

Any changes in graduate medical education must account for GME's intimate relation to hospital patient care. The residents are hospital employees and provide physician coverage for patient services. Hospitals employ the program directors and faculty. Hospitals are the focus of accreditation review by the Accreditation Council for Graduate Medical Education, a cooperative body of the American Medical Association and the various specialty societies and boards. Patient care revenues provide over three-quarters of the financial support for graduate medical education. Any change in hospital services, patient care population or finances also affects GME. Similarly, changes in GME affect the organization of patient care in teaching hospitals.

The complex of GME programs and the hospitals operating them are wound into a web with other organizations that control accreditation, resident recruitment, state licensure, medical school affiliation, specialty certification, and patient care reimbursement. Each program and institution must:

- Meet the GME program accreditation requirements of the Accreditation Council for Graduate Medical Education or the American Osteopathic Association.
- Follow recruitment and hiring procedures established by the National Resident Matching Program in order to recruit from a national pool of applicants.
- Design a program that will render trainees eligible for certification by the appropriate specialty board.
- Set up patient care experiences under rules established by the Joint Commission for Accreditation of Hospitals, the State Department of Health and the State Board of Medical Examiners.

- Identify a mix of services and settings for training that will allow reimbursement by Medicare, Medicaid and other third party payers.

The differing policies pursued by all of these parties can create problems for GME. For instance, patterns of health care are currently moving away from inpatient care toward increased use of ambulatory, outpatient services. This, accompanied by shorter stays in hospitals, has reduced the availability of patients for resident (and medical student) instruction. Reimbursement systems that are based upon average costs per admission and diagnosis (called Diagnosis-Related Groups) further fuel this trend. While these trends fall in line with federal health care policy, financial coverage for GME has not followed the patients to clinics, nursing homes, and day care services. At the same time, some specialty boards have increased rather than decreased their requirements for acute, specialty, hospital-based experiences.

Federal initiatives to assure adequate physician manpower have also affected GME. Following the Second World War, Congress initiated a national effort to increase the number of physicians and improve their geographic distribution by expanding enrollment in medical schools and providing funding to hospitals for residency training. The National Health Service Corps was designed to bring young physicians to medically underserved areas. The government provided special grant funding to primary care residency programs and funded Area Health Education Centers to stimulate growth in the availability of primary care physicians. Liberal immigration policies for foreign physicians from 1965 to 1976 also helped expand the physician supply.

These national efforts, combined with other factors, led to a reversal of previous projections of a shortage of physician manpower. In 1976 and again in 1980, the government commissioned a national study of the influence of GME upon physician manpower needs. The conclusions of the Graduate Medical Education National Advisory Committee (GMENAC) projected an oversupply of physicians by 1990. GMENAC recommended that new planning limit GME growth and link GME more directly with specialty and geographic needs.(2) Subsequent studies by the Bureau of Health Professions Research indicated that the enlarged physician supply had increased the number of physicians practicing in suburban areas but had not significantly improved inner city or rural access to medical care. Nor did the enlarged supply discourage physicians from pursuing subspecialist training.(3) Other studies indicated that physicians' choice of practice location was influenced primarily by the attraction of tertiary medical centers.(4) As a result, the Health Care Financing Administration no longer advocates funding of GME through the Medicare program. The Consolidated Omnibus Budget Reconciliation Act for FY 1986 (P.L. 99-272) reduced Medicare reimbursement for residents pursuing training beyond that required for their initial certification in a specialty. This marks a beginning to mounting restrictions on federal support for GME.

Over the same period, the presence of foreign medical graduates (FMGs) in GME programs grew, reaching a national high in 1977 of 25% of all trainees. In 1985, 16.8% of all trainees were foreign medical graduates.(5) Public and professional concern with FMG residents arose regarding the adequacy of their pre-medical and medical school training, lack of English proficiency, appropriateness of spending public funds to educate aliens, and the priority of training graduates of U.S. medical schools. While several measures were introduced in Congress during 1985 and 1986 to terminate financial support for FMG residents, current policy limits Medicare reimbursement to those FMGs who have passed both parts I and II of the Foreign Medical Graduates Examination in the Medical Sciences (FMGEMS). This exam, which is administered by the Educational Commission for Foreign Medical Graduates (ECFMG), is

considered comparable to the National Board of Medical Examiners examinations given to graduates of U.S. schools. The ECFMG was established in 1956 to assess the preparedness of foreign medical graduates to enter residency training in the United States.

Today's GME programs operate in an environment of uncertain future funding, uncoordinated decision making, large scale shifts in patterns of medical care, questions about the competence of some trainees, and general public concern with the quality of medical care. At the same time, these programs have become an essential final phase in the educational preparation of physicians, encompassing training in scientific theory, ethics, and management as well as clinical practice. The presence of so many foreign medical graduates has also differentiated GME as an educational system with admission criteria and evaluative procedures separate from U.S. undergraduate medical education. The structure of this educational enterprise must now be redesigned and stabilized to provide proper support for future health care needs.

THE NEW JERSEY PERSPECTIVE

While all of the forces affecting GME nationally have impact upon New Jersey programs, a few are especially pronounced. For instance, the number of residents and fellows has grown at an average annual rate of 5.8% for the past eight years, almost twice the national rate. A portion of this growth is partially accounted for by the development of needed subspecialty programs by the University of Medicine and Dentistry of New Jersey (UMDNJ).

New Jersey programs train a disproportionate share of FMG residents. In 1977, FMG trainees filled 25% of positions nationally; 75% in New Jersey. In 1985, FMG trainees filled 17% of positions nationally; 51% in New Jersey. Two-thirds of New Jersey's FMG residents are United States citizens who chose to study medicine outside of the country but wish to practice within it. The presence of so many FMGs suggests that New Jersey GME programs fall behind in the competition for United States medical school graduates, raising questions concerning the actual and perceived quality of the state's programs.

While New Jersey GME programs face the national strains in health care and medical education, the state is in a better position than many others to manage its own solutions creatively. The state's current physician supply of approximately 228 per 100,000 is near the national average (221). Problems with the geographical distribution of physicians are concentrated in a few inner city and rural areas. With a waiver from the federal Medicare Diagnosis-Related Groups (DRG) system, the state has flexibility to build improved financial incentives at least within the hospital context. Thus, the resources available for GME in New Jersey can be concentrated upon making improvements in quality and meeting very specific objectives.

The formation in 1977 of the state Advisory Graduate Medical Education Council (AGMEC) provides a ready vehicle for debate and coordination of GME issues. This body has been charged with responsibility to:

> ...make recommendations for the support, through Federal, State and private funds, of graduate medical education programs in private non-profit and public hospitals in the State and to make recommendations for the development and implementation of new graduate medical education programs which will meet the needs of the citizens of the state. (NJSA:64H-2)

The Board of Higher Education is directed, upon the advice of AGMEC and with the concurrence of the Commissioner of Health, to:

> ...determine the number and type of graduate medical education programs which should be supported in particular hospitals in relation to total State needs. (NJSA:64H-5)

To accomplish these purposes, AGMEC has studied the issues facing New Jersey GME programs. The conclusions of its initial study in 1984 are reported in *A Policy Prospectus for Graduate Medical Education in New Jersey*.(6) This report continues that process, giving attention to issues that confront all programs and must be managed system-wide. The Council sought to identify strategies for ensuring that high quality training at each institution and its related residency programs would be translated into a high quality network of GME programs. The following issues have been considered:

- New developments in medical care theory and methods, in use of hospital services, and in restrictions on patient care reimbursement are limiting the ability of teaching hospitals to independently provide high quality GME training. How can the actual quality of GME programs be maintained and improved?

- The perceived quality of New Jersey's GME programs is sufficiently low among U.S. medical students that programs state-wide fill less than half their positions with these graduates. How can the perceived quality of GME programs be improved?

- The size, specialty distribution, geographic location and other characteristics of individual GME programs tend to be uncoordinated and not directly responsive to state-wide health care needs. How can the overall network of GME programs be made more responsive to the need for an appropriate number and mix of specialty physicians, provide more training opportunities for women and minorities, and be made available in both cities and rural areas?

- The financial base of support for GME through the Medicare program, and potentially from other large payers, is becoming increasingly restrictive. The New Jersey Department of Health is under pressure to justify and perhaps reduce state expenditures for GME that are covered under current hospital rate setting procedures. Given the critical importance of GME for the preparation of competent physicians, how can an adequate and stable financial base be assured?

- Graduate medical education involves the interests of multiple associations, agencies, and institutions, both clinical and academic, provider and payer, public and private, professional and lay. It has importance for both current and future patient care. How can the varying interests of all participants in the health care system be represented in planning for changes in New Jersey's GME system?

Study of these issues has resulted in the identification of three broad strategies for action addressing three elements of quality in graduate medical education: individual GME programs; each physician in training; and the network or system of organizations involved in providing, paying for, regulating and planning GME. The following three chapters discuss each of these elements of quality and recommend actions to be taken to strengthen New Jersey's state-wide effort in graduate medical education.

ENHANCING THE QUALITY OF GRADUATE MEDICAL EDUCATION PROGRAMS

Each of the many parties involved in providing, assessing, influencing, or paying for graduate medical education has a different perspective on its purposes. In AGMEC's view, the objective of GME must remain centered upon the preparation of competent physicians for the independent provision of medical care. This endeavor requires that every GME program individually attain excellence in its curriculum and instruction. The most basic evidence of program quality is accreditation from the Accreditation Council for Graduate Medical Education or the American Osteopathic Association and should be a mark of all New Jersey programs. In addition to program accreditation, several other elements should be established as state-wide goals for program quality to be understood within the context of accreditation standards and specialty board certification guidelines. First of all, GME programs need to update both the curricula and clinical settings now used for physician training to reflect changes in medical practice. The means for articulation of both educational objectives and evaluative criteria in undergraduate medical education and graduate medical education should be specified so that the state's medical students and residents receive a complete and progressive course of instruction. In addition, the roles and relationships between institutions involved in GME must be formalized and clarified to assure adequate educational planning, evaluation and administration.

Attainment and maintenance of accreditation should represent a minimum standard of quality for New Jersey programs. Accreditation should also remain the standard used to identify programs eligible for reimbursement of GME expenses through patient care revenues. The New Jersey Department of Health requires that residencies be approved by the ACGME or the AOA (NJAC 8:31B-3.22 and 4.117). The Advisory Graduate Medical Education Council's legislative mandate also includes accreditation as a requirement for grant support through the Graduate Medical Education Program (NJAC 18A:64H-6).

In New Jersey, the accreditation process effectively exerts control over the quality of residency programs. All of the 143 residency programs are either currently accredited or are awaiting accreditation as new programs. Any programs that lose accreditation are subsequently closed.

However, the accreditation process does not exert as much influence over fellowship (i.e. subspecialty) training. For a variety of reasons, only a third of the 101 fellowship programs in New Jersey during 1985-86 were accredited. Some new programs awaited initial review. Others lacked accreditation because there was no process for it, though a few of the specialty residency review committees (RRCs) have now decided to review and accredit subspecialty programs. The Internal Medicine RRC plans to release accreditation information on all subspecialty programs during 1987. Others, such as the Pediatrics RRC, are reviewing fellowships one by one. These reviews should significantly increase the accreditation of fellowship programs in the state. However, for some types of subspecialty training such as in Obstetrics and Gynecology, no accreditation process is planned. A few programs in the state cannot be accredited because they lack the minimum required association with an accredited residency program.

Recommendation #1

For all residency and fellowship programs in specialties or subspecialties for which there is an accreditation process, maintenance of accredited status should be a requirement for reimbursement of GME program costs from patient care revenues.

Medical educators have long recognized a trend in patient care toward ambulatory services involving decreased hospital admissions and shorter lengths of stay per admission. The New Jersey Department of Health estimates that by 1990, the state will need from 3,900 to 7,300 fewer hospital beds.(7) As a result, the availability of patients within the hospital for resident instruction will decrease. Training in ambulatory settings as preparation for the trainee's future independent practice will become essential. Similarly, the importance of prevention, rehabilitation, and maintenance care in medical training will grow.(8) With the nation's population over 65 years of age expected to reach 21% of the total by the year 2000, health care services in home nursing, institutional nursing, respite care, and hospice will grow. Physicians in training need to learn how to practice within these settings.

Recommendation #2

New training opportunities in ambulatory care and long-term care settings should be developed for inclusion in all residency programs designed to prepare physicians for initial certification within a specialty.

To devise these new training opportunities will require that program directors, hospital administrators, non-hospital health care providers, and payers work with cooperation and imagination. The impediments of the past such as tradition, differentials in reimbursement, or certification requirements will not disappear. However, this kind of change represents just a beginning: further fundamental changes in medical care most certainly lie ahead. These will require even greater adjustments in GME.

The sheer amount of knowledge and skills that must be transferred during medical education has multiplied such that four years of medical school are no longer adequate to completely prepare fledgling physicians. The 1984 report of the Association of American Medical Colleges, *Physicians for the Twenty-First Century* , states that medical schools should no longer aim to prepare physicians for the independent practice of medicine; this level of basic training must occur during the first few years of GME. The report calls for numerous changes in the settings and objectives of undergraduate medical education and for corollary joint planning of objectives and curricula between undergraduate and graduate medical education.(9) Similarly, the teaching of specific scientific disciplines that underlie practice in the medical subspecialties must be deferred from medical school to GME. Thus, GME now bears greater academic responsibilities in addition to its traditional mentoring role in clinical practice.

Recommendation # 3

Graduate medical education should be integrated more effectively with undergraduate medical education.

The difficulties of establishing new educational objectives, curricula, and clinical settings for GME programs highlight a more fundamental issue: the need for new institutional roles and

inter-institutional partnerships in graduate medical education. Many traditional hospital services no longer provide the full range of clinical experiences required for resident training. As other health care institutions such as clinics, nursing homes and rehabilitation institutes become involved in GME as training sites, they should also participate in the planning, teaching and evaluation of that training. Cooperative arrangements between hospitals as teaching affiliates may have to increase as inner city hospitals become centers for treatment of the most serious and traumatic disease and suburban hospitals become the centers for more ordinary or elective care.

Medical schools must also play a stronger role in GME training. The heightened importance of GME for the basic preparation of physicians and for the transfer of a scientific base in specialty and subspecialty training calls for greater availability of academic instructors and researchers to GME programs. As fiscal restraints on patient care inevitably tighten further, hospitals will have reduced flexibility to underwrite purely educational costs such as seminars, program planning, evaluation, and research projects. Strong educational cooperation between GME programs and a medical school should not be restricted to a few academic medical centers–it should describe all GME programs state-wide.

Recommendation # 4

Organizational relations and responsibilities for graduate medical education programs, including the respective roles of the University of Medicine and Dentistry of New Jersey, other medical schools, non-hospital health care institutions and the state's teaching hospitals, should be clarified and formalized.

The Accreditation Council for Graduate Medical Education does not require a medical school affiliation. However, it does suggest that each RRC consider that "such affiliations are desirable if they offer a type of quality control or if they satisfy identified deficiencies in a given training program. Particularly important is a cooperative educational effort with faculty participation."(10)

Most of the GME programs in New Jersey have some kind of affiliation agreement with a medical school. Among the total of 242 programs offered by 41 institutions, four-fifths have an affiliation with the University of Medicine and Dentistry of New Jersey while the remaining programs have affiliations with seven other out-of-state medical schools through both institutional and departmental agreements. There is no standard form for the content of such agreements. However, faculty in the GME program usually receive non-salaried appointments as adjunct faculty in the related medical school. A formal contract is typically written to provide for clerkship training of medical students under the aegis of an accredited residency program (specifying responsibilities for insurance coverage, housing and meals, and clinical evaluation of medical students) and does not necessarily entail any exchange of resources or responsibilites regarding residents and fellows. The affiliation agreements of New Jersey GME programs with medical schools should be strengthened to allow GME programs access to medical school resources and vice versa. These agreements should be monitored by AGMEC and their importance reinforced through financial support mechanisms.

Recommendation # 5

Graduate medical education program affiliation agreements with medical schools should be clarified in written contractual terms that specify responsibilities for such issues as faculty appointments, breadth of training opportunities, program evaluation, faculty in-service education and mutual availability of hospital and medical school resources.

Recommendation #6

Only those programs that meet affiliation standards should be eligible for reimbursement of resident costs through the hospital rate setting system.

ENSURING THE QUALITY OF TRAINEES IN GRADUATE MEDICAL EDUCATION

The quality of residents trained in GME programs is a key variable in the future quality of medical care in the state. Residents also affect current patient care because they provide medical services in hospitals, clinics, and nursing homes during their training. Thus, the attraction and selection of highly qualified residents is an important factor in assuring the quality of patient care in the state.

Rigor in the selection process is a mark of quality in GME programs. In assessing candidates for admission, programs should look for a proper course of pre-medical and medical education, test scores, and positive recommendations. The candidate's participation in the National Resident Matching Program does not imply possession of proper qualifications for entering GME. The assessment process should, as much as possible, assure that each candidate is fully ready to begin practicing medicine under supervision and has potential to grow into a fully competent practitioner. It should also provide some assurance that candidates will meet standards of the New Jersey Board of Medical Examiners for licensure to practice medicine. In addition, recruitment efforts should recognize the importance of attracting women and ethnic minorities to both train and practice in the state.

In the case of graduates of medical or osteopathic schools accredited by the Liaison Committee on Medical Education (LCME) or the American Osteopathic Association (AOA), quality in medical training and rigor of student assessment is almost assured. In the case of foreign trained candidates, however, these elements are not always present. Foreign medical graduates (FMGs) may not possess a pre-medical or medical education that meets state licensing standards. The general medical education received by some FMGs is not equivalent to that received by U.S. medical students. This disparity is revealed by their performance level on the Foreign Medical Graduate Examination in the Medical Sciences (FMGEMS). This test, administered by the Educational Commission for Foreign Medical Graduates (ECFMG), is considered equivalent to Parts I and II of the National Board of Medical Examiners (NBME) examination taken by students and graduates of U.S. medical schools. Over four test administrations from 1984 to 1986, an average of 20.3% of alien foreign medical graduates and 15.5% of U.S. citizen foreign medical graduates passed Day 1 of the FMGEMS exam. On average, 43% of aliens and 24% of U.S. citizens passed Day 2. In contrast, more than 85% of U.S. medical students pass Part I of the National Board Examinations every year. An even larger percentage passes Part II. This differential in performance points to the need for a careful review of credentials and performance information on foreign medical graduates.

TABLE 1

Foreign Medical Graduates, Both Alien and United States Citizens, in New Jersey GME Programs

		1980	1981	1982	1983	1984	1985
U.S. Medical Grads	No.	806	807	956	1022	1143	1281
	%	(39%)	(37%)	(40%)	(42%)	(44%)	(49%)
U.S. Foreign Medical Grads	No.	377	444	679	823	934	873
	%	(18%)	(21%)	(29%)	(33%)	(35%)	(33%)
Alien Foreign Medical Grads	No.	906	910	748	605	541	479
	%	(43%)	(42%)	(31%)	(25%)	(21%)	(18%)
All Trainees		2089	2161	2383	2450	2618	2633

Any deficiencies in the education of physicians in foreign medical schools have particular impact upon New Jersey because of the large number of FMGs trained in the state. During 1985-86, there were 1,352 foreign medical graduates in state GME programs, or 51% of all trainees. Table 1 shows a history of FMGs training in New Jersey GME programs by citizenship at time of entrance into GME training. There is a need for stricter entrance criteria and review procedures at the point of entry into GME.

Recommendation # 7

Standards for GME candidate selection should be raised state-wide. Resident selection should be limited to graduates of Liaison Committee for Medical Education and American Osteopathic Association accredited schools and to those graduates of foreign medical schools who meet both of the following criteria:

A. Effective with the class beginning July 1, 1987, the resident must have demonstrated competence in medicine by presenting documentation of having earned a medical school diploma and passing the Foreign Medical Graduate Examination in the Medical Sciences (FMGEMS) within three attempts.

B. The resident must have competence in English as demonstrated by passing an English exam or presenting a degree (such as a B.A.) from a college or university indicating equivalent or greater English language skill.

Recommendation # 8

Residents in GME programs should meet all minimum criteria established by the New Jersey State Board of Medical Examiners as required for their eventual licensure in New Jersey prior to entry into residency training. Standards for candidate selection should be refined to reflect minimum requirements for a New Jersey medical license, with the exception of specific requirements for graduate medical education itself.

All of the graduates of New Jersey programs should be fully competent and licensable for independent practice in the state. The State Board of Medical Examiners has uncovered inadequacies in the undergraduate and medical education of some FMG applicants for licensure. Procedures should be implemented to prevent such discrepancies between standards for entrance into GME programs and standards for state licensure. The New Jersey Board of Medical Examiners has proposed and circulated a new regulation (NJAC 13:35-1.5) that would require all residents to have a graduate medical education permit. If approved, this regulation would involve scrutiny of the educational credentials presented by all GME candidates prior to their entry into training.

In order to encourage swift state-wide implementation, these standards should be reinforced through regulation, such as the proposed graduate medical education permit, and through the hospital reimbursement system. As of July 1, 1987, the hospital rate setting system should reimburse hospitals for only those residents in the first postgraduate year who meet these standards. In the year beginning July 1, 1990, this limitation should apply to all newly hired residents and fellows regardless of postgraduate year.

Recommendation # 9

Standards for candidate selection should be reinforced through regulatory means including limitations on reimbursement for unqualified candidates. After July 1, 1987, reimbursement for first year residents' stipends and fringe benefits should be limited to those who meet the standards specified in Recommendations 7 and 8.

In addition to the educational qualifications of residency candidates, their personal traits also have an impact upon future medical care. Increased representation of American minorities and women in the medical profession has shown demonstrable improvements in both the accessibility and the acceptability of medical care to minority groups and women. Research indicates that an increase in black physicians leads to an increase in treatment for black patients.(11) Seeking diversity in the pool of resident trainees is, therefore, a desirable goal for both individual programs and for the entire state graduate medical education system.

Further, the state's GME system should encourage qualified trainees from these groups to train in New Jersey in order to support their access to continued medical training. American minorities and women should also be among GME program faculty to provide personal and professional leadership to trainees.

Recommendation # 10

Efforts to increase the representation of American minorities and women in graduate medical education should be continued.

DESIGNING A STATEWIDE GRADUATE MEDICAL EDUCATION SYSTEM TO SUPPORT QUALITY HEALTH CARE

An extremely important aspect of quality in graduate medical education concerns the influence of the entire system of programs and trainees upon the future availability, accessibility, and affordability of health care. While individual GME programs must focus upon training highly competent physicians for the independent practice of medicine, the objectives of the state GME system must go beyond this to address the mix of specialists needed to support projected health care needs, impact upon the geographical availability of services, and balance in the number of trainees with future opportunities for practice. Currently, no mechanism balances all these elements. Therefore, AGMEC has identified principles that may be used to guide planning decisons affecting individual programs within the system. The guidelines cover the overall scope and distribution of programs, the influence of financial mechanisms upon the quality of programs, and planning future directions of New Jersey's GME system.

Scope and Distribution of GME Programs

The most obvious responsibility of medical education, including the GME system, is to produce trained physicians in adequate numbers to meet the health service needs of the state. Further, the system should avoid training more physicians than are needed in view of the public funding that supports GME.

Many health care planners believe that the nation has too many physicians. The number of physicians in the nation has increased from fewer than 250,000 in 1950 to over 500,000 in 1986 and is growing at a faster rate than the population, leading to an increasing supply. In 1970, there were 146 physicians for every 100,000 persons in the nation; in 1976, 183; in 1985, 221.

During the 1960s, when federal efforts to expand the physician supply began, it was hoped that an expanded physician supply would lead to measurable improvements in patient care access and reduced morbidity by encouraging physicians to specialize in primary care and locate in underserved areas. These hopes were partially realized. The expanded physician supply led to small improvements in the distribution and availability of physicians and made a marginal contribution to reduced illness. However, a National Center for Health Services Research study of this issue in 1983 concluded that the greatest increases in physician supply had occurred in economically healthy urban and suburban areas. Physician location was influenced more by the pull of rapid economic and population growth in an area than by the push of physician over-saturation.(3) The proportion of physicians entering primary care improved temporarily due to federal support of family practice programs. However, this trend has reversed despite the fact that in some subspecialties, physicians compete for a decreasing patient pool. Recent studies of physician choice of location show that the most significant factor is the location of tertiary care centers and referrals from other physicians.(4) The American Medical Association believes that this situation may lead to deterioration in the quality of health care. Physicians trained for highly specialized practice may lack an adequate patient load to maintain their skills, end up

health care through providing unneeded services.(12) Therefore, a physician oversupply does not necessarily support quality health care.

An overly large GME system wastes limited health care resources. Health care is now 11% of the gross national product. Its inflation rate is over four times that of the consumer price index. Efforts to control and justify costs must be shared by all contributors, including GME which operates as an integral part of the health care system. At the same time, however, medical educators recognize that necessary improvements in the range and depth of training may require greater rather than lesser cost subsidy than in the past. Recognizing the real possibility of continued reductions in public financing of residency training, GME must be able to support adequate financing for quality training within the context of responsible allocation of health care resources.

Several efforts have been made to estimate the future supply of physicians and its adequacy on a national basis. Many methods and assumptions have been employed, each arriving at somewhat different conclusions. Estimates of physician "need" are derived from data regarding population demographics, illness, and the health care services appropriate to treat everyone. An "adjusted needs" approach adjusts this result to more realistic conditions using the judgment of experts. "Demand" based estimates use information about existing patterns of health service utilization and the availability of economic resources to purchase services.

The federal government uses two methods to model future physician supply and its adequacy. The first national model was developed by the Graduate Medical Education National Advisory Committee (GMENAC) during its study of GME in 1980. The GMENAC adjusted needs model used panels of medical experts in each specialty to adjust the data for the procedures, referrals, and workloads they considered realistic. The result was a nationwide estimate of physician need, by specialty, projected to the year 2000. This study concluded that, on average, a ratio of 220-247 actively practicing physicians per 100,000 population would be sufficient to meet health care needs. This projected range is lower than the current physician supply in many states such as New York, Connecticut and Maryland. (See Appendix A for a more detailed description of projection models.)

In 1983, the Bureau of Health Professions Research (BHPR) revised and updated the GMENAC approach. The BHPR model provided estimates of the future need for physicians in each state, adjusted for migration patterns of both population and physicians to southeastern states. Based upon 1980-81 data, this model suggested that by 1985, no more than 258 actively practicing physicians per 100,000 population would be needed.

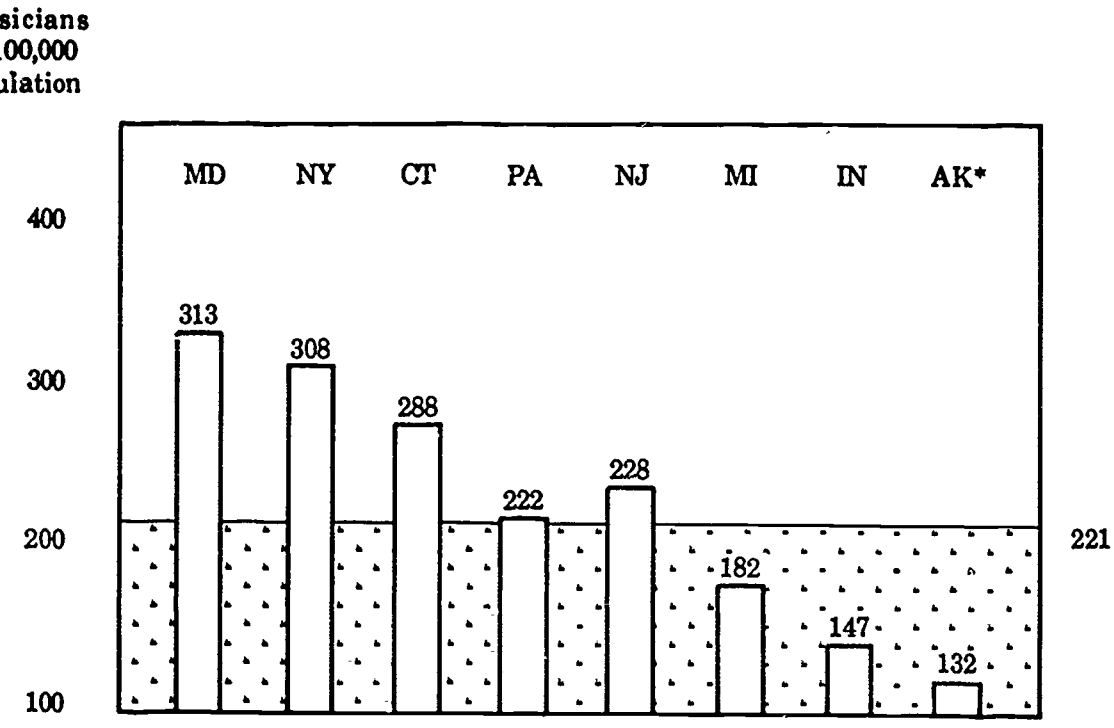
Although skeptics questioned the concern with physician supply growth when the ratio was below 200/100,000, few dissenters now remain. Studies of physician utilization within Health Maintenance Organizations show that as few as 140 physicians per 100,000 enrollees is sufficient. The aging of the American population suggests, on the other hand, that a greater supply of physicians may be needed than in the past. Regardless of such discrepant trends, however, a consensus is developing that the nation is headed for a physician supply that exceeds its needs. During its 1986 meetings the American Medical Association accepted a report concluding that such an oversupply does exist.(13)

As with the rest of the nation, planners in New Jersey are concerned about this continuing increase in the physician supply. In 1979, the state had a physician-to-population ratio of 183/100,000. By 1985, it had grown to at least 223/100,000. Based upon national numbers of

licensed physicians, it appeared that the state's physician supply was close to the national norm and lower than in several other states (Table 2). However, the state's pool of licensed physicians includes many who actually practice in neighboring states making any estimate of the actual physician supply difficult to determine.(14) Estimates of the need for physicians based upon already available models are based upon outdated data, raising questions about their reliability for future projections.

TABLE 2

Physician-to-Population Ratios: Selected State Comparison



* Alaska had the smallest physician supply among states in the U.S.

United States Average (221)

Source: *Physician Characteristics and Distribution in the U.S., 1984 Edition.* Department of Data Release Services, American Medical Association, Chicago (1984).

In order to supply AGMEC with a more detailed analysis of the future supply of and need for physicians in New Jersey, the University of Medicine and Dentistry of New Jersey undertook a study of medical manpower.(14) The study used a variety of data sources and a survey of physicians to determine how many of the state's 25,000 licensed physicians actually practice medicine in New Jersey. The study also used the most prominent national models of need and supply provided by GMENAC and BHPR and a model of demand and supply developed by the

New Jersey Department of Higher Education (DHE) in 1975. The UMDNJ used current data to test both the models' reliability in the past and to compare their conclusions about the state's future physician requirements or need, converting all results to a commonly defined number of actively practicing licensed physicians.

The results of these updated comparisons show that the supply projections of each of the three models accurately predicted New Jersey's 1985 actively practicing licensed physicians within a range of ± 5%. The "need" and "demand" portions of the models also produced comparable results, allowing a single forecast of the state's future need for actively practicing licensed physicians that represents both objective need and patterns of demand for care. (The number used was the mean among the models.) For the sake of clarity, this estimate will be referred to as the need for actively practicing physicians. (See Appendix B for a description of the UMDNJ study methodology.)

The combined projections show that the state will likely reach a supply of around 24,800 actively practicing physicians by the year 2000 if current trends are allowed to continue. This will result in a physician-to-population ratio of about 293/100,000. As of December 1985, the state had 25,270 licensed physicians, of whom about 17,300 were actively practicing in-state. Given continuation of current patterns of medical education, approximately 7,500 actively practicing new physicians will be added to the state's supply over the next 15 years. In contrast, the combined projections indicate that by the year 2000, New Jersey's population will likely need in the neighborhood of 22,900 actively practicing physicians, representing a physician-to-population ratio of approximately 271/100,000 (Table 3).

TABLE 3

Estimates of Actively Practicing Physicians: UMDNJ Medical Manpower Study

	Estimated Supply-1985	Forecast Population Based Need-2000	Forecast Population Based Supply-2000
Actively Practicing Physicians	17,300	22,900	24,800
Growth Over 15 Years	–	5,600	7,500
Physicians Per 100,000	228	271	293

Given the assumptions made in the combined model concerning continued patterns of medical training, licensure, health service utilization and demographic trends, the multiple projections indicate that the state will probably have substantially more physicians than it needs if current trends continue. The analysis did not include projections of potential future trends, such as expansion of HMOs, that may significantly reduce the future need for physicians. Therefore, the results may overstate, rather than understate, future need. The method also

allows substantial margin for unpredicted increases in the need for physician services that might be needed to treat the elderly or emergence of new disease. The difference between need and supply by the year 2000 comes to an excess 1,900 actively practicing physicians. The total number of new physicians added to the state over 15 years would have to diminish by nearly 25% to match the projected need.

GME is only one of the sources contributing to the state's physician supply. Immigration into New Jersey of fully trained physicians, both foreign and U.S. medical graduates, also supplies new state physicians. However, GME is an important supply over which the state can exercise some planning control. Historical growth in the number of available GME positions state-wide has contributed to the growth in the physician supply. Between 1980 and 1985, the GME system grew by 26%, adding 544 new positions. This was an average annual growth of 5.2% (Table 4).

TABLE 4

Growth in the Scope of GME in New Jersey

Academic Year	Residents and Fellows	Percent Change	PGY1 Positions	Percent Change
1980-81	2089	5.9	657	--
1981-82	2161	3.4	723	10.0
1982-83	2383	10.3	796	10.1
1983-84	2450	2.8	733	(-7.9)
1984-85	2618	6.9	820	11.9
1985-86	2633	0.6	784	(-4.4)

Since the first year of postgraduate training (PGY1) is now required prior to licensure for all medical school graduates, the number of PGY1 positions establishes the maximum annual output of licensable physicians by the state GME system. In 1984-1985, there were 820 PGY1 positions filled. Since the average number of PGY1 positions was 752 over the last five years, the New Jersey GME system now annually produces an average of approximately 750 new physicians. At this size, the state's GME system could produce by itself more physicians than will probably be needed in the future within New Jersey.

The Council concluded during its 1984 study of GME that an adequate number of residents was being trained in state programs since physician supply would be in balance with projected need by 1985. In 1985, the State Department of Health studied the issue and developed new regulations (NJAC 8:31B-3.31) to limit growth in the number of positions. The regulation freezes the number of positions approved for payment to that number approved for each hospital as of July 1, 1985. Another provision allows transfer of GME positions among hospitals as long as the total number and the total cost remain the same.

The moratorium on approved positions represents an initial step toward halting growth in the total number of residents and fellows. However, it can only temporarily influence the size of the GME system. Beyond the moratorium, planned reductions in the number of GME positions are needed to bring the size of the GME system into closer balance with the public financing that will most likely be available to support it. The risk of overadjusting the physician supply by such reductions is very small given the youth of the state's physician pool and the number of physicians already in GME training.(14) Based upon the UMDNJ medical manpower study, the Council suggests that a reduction of about 25% over the next 15 year period would be appropriate.

Recommendation #11

The present moratorium on increases in the total number of residency positions approved for payment under the hospital rate setting system should be continued as an immediate means of limiting growth in residency positions.

Recommendation #12

A reduction in the number of residency positions in New Jersey should be planned over the next five years using a combination of voluntary incentives and regulatory means.

It is possible that certain changes in physician supply could eliminate the excess without any deliberate GME planning action. For instance, if only a small number of FMGs are able to pass the FMGEMS exam for years to come, New Jersey positions could go unfilled for lack of candidates. This could lead to reductions of 20% to 30%. However, since GME training requires a minimum of three years, any delay in planning can result in delayed impact of four or more years. Therefore, planning for moderate reductions should begin now for implementation over the next few years. These plans can be revised as new information on the need for physicians and financial support for GME become available.

The mechanisms for identifying appropriate positions for reduction and for the transfer of positions among institutions must be worked out by the agencies that monitor and approve payment for GME. A governmental interagency GME working group (as presented in Recommendation #20) should specify these mechanisms, using the advice of AGMEC's Manpower and Public Information Committee and the state's medical societies, hospital association, and medical university.

There are many approaches that could be taken to reducing the size of the GME system. For example, the size of the entire GME system could be largely controlled through gradual reductions in the number of PGY1 positions. Changes of up to 10% per year would not exceed past patterns of change. A moderate plan of 5% per year over 5 years would result in an overall reduction of 22%, equivalent to the closure of five to nine GME programs. The impact of these changes upon PGY1 positions is illustrated in Table 5. Such a plan would reduce the number of physicians trained by almost 1,600 by the year 2000. The final size of the state GME system would still provide ample opportunity for graduates of the UMDNJ (now about 360 annually) to enter GME programs in New Jersey.

TABLE 5

Annual Five Percent Reductions in PGY1 Positions, Totaling 180 Positions

	Reduction	#PGY1
July 1987	–	800
July 1988	40	760
July 1989	38	722
July 1990	36	684
July 1991	34	652
July 1992	32	620

Some hospitals might wish to reduce the number of positions in higher postgraduate years of training. Some PGY4 positions are filled by alien foreign medical graduates who seek U.S. citizenship and licensure to practice medicine after they have already practiced medicine in their native countries. Therefore, some of these positions represent trainees, and eventually licenced physicians, added to the state's supply. Positions in PGY4 and PGY5 represent a mix of initial specialty training (obstetrics-gynecology, psychiatry, pathology, radiology, and surgery), subspecialty training (fellowships) and a relatively small number of chief residents. Almost all training in PGY6 and beyond is subspecialty training. The numbers of positions in subspecialty training have much less direct impact upon physician supply than they do upon the distribution of physicians among the specialties. Therefore, reductions in these positions would influence training and subsequent practice in primary care.

The actual approach used to implement future GME position reductions should be based upon consideration of each program's quality and its impact upon the state's needs. Of most immediate concern to medical educators is the possibility of imposed regulatory reductions for financial reasons in resident numbers across all GME programs in the state. This approach would require minimal decision-making but could undermine the quality of instruction by reducing some of the programs below their critical mass. The reduction process should emphasize cooperation and should preserve the best training programs in the state. Regulatory approaches to reductions should emphasize closing the poorest programs and should be apportioned among the specialties and in geographic areas that have the least demonstrated need.

Recommendation # 13

Reductions in graduate medical education positions should be apportioned among the postgraduate years and among the medical specialties and subspecialties based on the appropriateness of existing training capacity for projected patient care needs in the state.

In addition to specialty distribution, the geographic location of programs within the state should receive consideration in GME planning decisions. The location of graduate medical education is an important determinant in physicians' choice of practice location. The most powerful predictor is a combination whereby a physician receives both undergraduate medical education and GME in the same state.(15) Therefore, the distribution of population, programs, residents, physicians, and patient care needs must be considered in state-wide planning.

Recommendation #14

Planning decisions regarding graduate medical education should give consideration to the geographical distribution of residents, physicians, and state population.

Currently, both population and medical resources are in greatest concentration in the northeast region of the state. However, demographers predict a continuing shift of population toward the southern portion of the state. New Jersey continues to have some maldistribution of physicians. In 1985, the U.S. Department of Health and Human Services designated communities in nine of the state's 21 counties as primary health manpower shortage areas. Most of the communities designated were in urban Newark, Paterson, Trenton, Camden, and Atlantic City. A few more were rural--southern Sussex County and Cape May County. In planning the distribution of positions, the ability of a GME program to encourage its graduates to practice locally within underserved areas should be given some consideration along with variables related to program quality and medical specialty.

Financing of GME Programs

In the *Policy Prospectus* the Council recommended that New Jersey's hospital rate setting system continue to approve reimbursement of GME expenses through patient care revenues. It called for funding sufficient to maintain program quality, based upon formal accreditation, affiliation with a medical school and physician manpower needs. It also called for refinements in reimbursement guidelines, cost reporting procedures, and the incentives of the overall financial system.

The major health care payers provide about four-fifths of the financing for graduate medical education in non-federal teaching hospitals.(16) According to New Jersey Department of Health estimates, the total cost of GME to these payers in this state exceeds $105 million annually. Because Medicare and Medicaid pay about 50% of this bill state-wide, federal GME policies tend to lead all payers. Therefore, reductions in federal reimbursement for GME started in FY 1986 will have a profound effect upon New Jersey's system. Currently, New Jersey enjoys a waiver from the national Medicare and Medicaid system of hospital payment. This waiver provides the state with flexibility to implement policies in GME that would not otherwise be possible. Under the conditions of the waiver, however, the state must keep health care costs below what would be paid under the national system. Therefore, the state system must take national patterns of GME payments into account.

The New Jersey hospital rate setting system includes two major components for support of GME programs. First, hospitals receive reimbursement for the salaries and fringe benefits of residents up to a total number approved by the Hospital Rate Setting Commission (HRSC). Payment is made for the approved number regardless of whether the positions are filled.(17) Hospitals also receive reimbursement for teaching-related patient care costs based upon their own reported expenses and average costs in their assigned hospital peer grouping: major teaching hospitals, minor teaching hospitals, and non-teaching hospitals. This system compares each hospital's costs with other teaching hospitals having a similar number of residents. Peer group status is determined by the number of GME programs, the number of trainees, and the number of undergraduate medical students in the hospital.

In 1985, more than one-third of the major and minor teaching hospitals in New Jersey had more residents and fellows in training than the number approved by the HRSC. Hospitals may seek reimbursement for additional residents through a rate appeal process. Appeals are considered by the HRSC if the residency program is accredited, documentation of costs is adequate, and the cost per resident is below 110% of the peer group median. Hospitals that appeal their rates for any reason lose the opportunity for an uncontested 1% increase in rates. Thus, most teaching hospitals do not seek, through an appeal, an increase in the approved number of residents until the number is large enough to make a real financial difference.

Since the *Policy Prospectus* was published, the New Jersey Department of Health has taken steps to tighten its policies and regulations concerning GME. In April 1986, it adopted a moratorium on increases in the number of positions approved for reimbursement. In July 1986, this policy was refined to allow transfer of positions between hospitals as long as there would be no net increase in total numbers of positions state-wide or in total reimbursement. A GME cost center was created to allow more detailed analysis of GME related expenses. The Department of Health indicates openness to further refinements not only to control GME costs but also to support quality enhancements in programs based upon recommendations from AGMEC.

Continuation of the moratorium regulation will help to prevent large scale uncontrolled growth in GME training. However, it is only a temporary measure. A number of institutions have already added residents or fellows to their programs regardless of the freeze on reimbursement. Implementation of the moratorium and transfer provision should support the intent of the regulation--limiting the total number of positions state-wide rather than the number in any one institution. Hospitals should be able to transfer positions among themselves without financial penalty. That is, a hospital wishing to add residents to strengthen an existing program or develop a needed new program based upon identified state need should be able to "accept," without formally appealing its rates, approved positions from another hospital which is reducing or closing a program.

The reimbursement system can be used to create not only limitations but also incentives in support of state-wide GME objectives. Financial mechanisms in support of graduate medical education need to be redesigned to include stronger incentives for improved program quality in addition to supporting both a reduction in the total number of positions and distribution among specialties and geographic areas that correspond to patient care needs.

First, financial incentives can be used to encourage some hospitals to close GME programs. A few hospitals claim to operate GME programs primarily for the purpose of providing care to medically indigent or underserved populations. Other hospitals express a need for residents to provide on-site supervision of patient care. Residents provide an inexpensive physician labor

force and are willing to provide services in inner city areas or during night hours as part of their training. Such services are important and a legitimate use of residents if they do not crowd out other clinical experiences and instruction critical to the development of an independent physician. However, full-time hospital staff can also perform these services, with greater consistency of performance since they do not rotate or split time with educational experiences. Many hospitals already employ house physicians and nurse practitioners for this purpose. In other states, physician assistants and surgical assistants provide high quality continuous oversight of patient care under supervision.

Recommendation #15

Initial reductions in the number of residents should be encouraged through financial incentives. These incentives should allow hospitals to replace residents with other full time health professionals and/or to develop new ambulatory or long term patient care services.

If hospitals are allowed to translate the costs of GME into costs for direct patient care needed by the local population, they may volunteer needed reductions in the size of the GME system. Financial incentives in this area can be used to eliminate excessive residency positions, provide needed added employment, and allow hospitals to pursue their most critical needs.

At the same time, limitations on the number of years that a resident receives training support through patient care reimbursement may also be appropriate. Under the current system, a physician can be supported through countless years of GME regardless of society's need for such extensively trained personnel. This generosity encourages some physicians to enter subspecialty fields of practice. By protecting GME programs from any financial penalty should a trainee fail to perform adequately and have to repeat a year of training, the present system also limits program incentives for selecting the most qualified candidates. Congress has already limited federal reimbursement for GME to that required for initial board eligibility, to a maximum of five years. Thus, residents can receive public support for from three to five years of GME. This limitation will apply to New Jersey programs whenever the state loses its waiver from participation in the national payment system.

Recommendation #16

Reimbursement for individual resident stipends and fringe benefits should be limited to the minimum number of years required for board certification. An allowance of one additional year should be permitted for selected individuals such as chief residents. Reimbursement for subspecialty training subsequent to initial certification should be limited to areas with an identified state need.

While federal decisions to limit payment for GME training are motivated primarily by cost containment, application of the same rule to New Jersey would not support the goal of proper distribution of GME training according to the state's needs. The University of Medicine and Dentistry of New Jersey is still in the final stages of developing specific subspecialty training programs to support tertiary care in the state. These efforts should not be prematurely cut off. In addition, the state will have yet unforeseen needs for certain medical specialists as new treatment issues present themselves. However, the reimbursement system should favor initial training and discourage unneeded additional subspecialty training.

In addition to its impact upon the scope and distribution of GME programs, the patient care reimbursement system is also a major force in shaping the content of programs. Continued redesign of the reimbursement system is needed to allow a reorientation of GME towards ambulatory care. All third party payers of health care should recognize GME expenses within ambulatory settings as legitimate use of health care resources. The hospital rate setting system should allow such expenses to the full extent possible within its jurisdiction.

Recommendation # 17

Patient care reimbursement methods should be redesigned to support needed educational changes such as increased ambulatory training.

The continued usefulness of the teaching hospital classification system needs further study. To the extent that the current classifications affect the size and quality of the state's GME system by providing an incentive for hospitals to increase their number of programs and residents in order to achieve a higher classification, an alternative method of grouping hospitals must be developed. However, there is no evidence that the grouping method has this effect. There is still inadequate information to determine the total costs of GME and the potential benefits of other payment structures. Information provided through analysis of the GME cost center reports may allow new insights in the coming years. Additional review of the data and the options should continue.

Recommendation # 18

The current teaching hospital classification system used for hospital rate setting should receive continued examination. Revisions should be based upon state objectives in graduate medical education and the identification of actual costs of quality training to hospitals.

Graduate medical education should continue to be primarily supported through patient care reimbursement. The physicians who train in GME programs provide real medical care services. Their training is necessary preparation for future health care needs. Under the waiver from the national Medicare and Medicaid payment systems, New Jersey can channel funds to programs that best meet the state's GME training needs. Should the waiver be lost, another centralized system for distributing GME funds would be needed.

If the trend toward restricted financial support for physician training continues, supplementary sources of support may also be needed. Reducing the number of trainees will not necessarily reduce the total cost of quality GME training. Funds saved on resident stipends could be profitably applied to support paid faculty positions or educational material. A small supplemental fund for GME program support already exists in the Graduate Medical Education Program, providing about $350,000 per year in grants to hospitals. The State Department of Higher Education also pays for some GME training through support to the University of Medicine and Dentistry of New Jersey. While the development of a large supplemental fund at this time might be premature, AGMEC should develop proposals in collaboration with the Department of Health, the University of Medicine and Dentistry of New Jersey, and the New Jersey Hospital Association.

Recommendation #19

Proposals for supplemental methods for the generation and distribution of graduate medical education funds should be developed.

Continuing Planning for Graduate Medical Education

If the recommendations of this report are to be carried out, there will also be a need for more coordinated GME monitoring, analysis, and planning within state government. While AGMEC serves as an advisory body to the New Jersey Department and Board of Higher Education, the means to improve the state's GME programs are distributed among several departments of state government, including the Department of Higher Education, the Department of Health, the Board of Medical Examiners (Division of Consumer Affairs), and the Department of Human Services. Each of these agencies must commit staff and other resources to accomplishing change in their own GME policy and planning. Their efforts should be coordinated with the New Jersey Hospital Association, New Jersey medical societies, and the UMDNJ to create a state-wide GME initiative.

Recommendation # 20

The Chancellor of Higher Education, the Commissioner of Health, the Commissioner of Human Services and the Director of the Division of Consumer Affairs should designate key staff to participate in an interagency GME working group. These persons should be authorized to commit agency resources to implement the recommendations in this report.

Graduate medical education involves participation by a wide variety of institutions and agencies, some of whom juggle competing concerns with patient care and escalating costs. Because the changes recommended in this report will greatly affect these organizations, they should be involved in the continued process of adjusting individual hospital residency programs toward overall state goals.

During the nine years since its establishment, the Advisory Graduate Medical Education Council has helped to coordinate and monitor the state's GME system. The grant funds of the Graduate Medical Education Program have provided the Council with a means to encourage improvements in GME programs. Council requests for proposals focus attention on initiatives that are most needed state-wide. This historical role makes AGMEC a suitable vehicle for considering all issues related to graduate medical education in the future. In filling this coordinating role, AGMEC will weigh options regarding physician supply and need, program development and financing, and serve as a forum, as needed, for competing interests in GME. The Council's existing Manpower and Public Information Committee includes members with appropriate expertise to consider such strategic planning issues. This committee's membership should be reviewed and reconstituted if appropriate so that it may serve AGMEC's current needs.

Recommendation # 21

The Manpower and Public Information Committee should be charged with performing a strategic planning function within the Advisory Graduate Medical Education Council. This committee should provide specific planning objectives and advisement on state actions affecting graduate medical education programs in New Jersey.

The Manpower and Public Information Committee should be responsible for analyzing continuing GME needs and for recommending adjustments in the quality, scope, and financing of programs in the state. The Committee should also consider the plans and accomplishments of the interagency GME working group in light of these adjustments.

The work of both the GME interagency working group and the AGMEC Manpower and Public Information Committee should provide the expertise and coordination needed to initiate the implementation of the recommended changes in state graduate medical education programs. Planning, analysis, and recommendations by AGMEC to the Board of Higher Education will help assure that the state's residency training system attains goals of improved program quality and meets the health care needs of New Jersey citizens.

APPENDIX A

Methods for Projecting Physician Need, Supply, and Demand

The over 100 different models for assessing the adequacy of physician supply use three major methods. Some are based upon normative judgments of need by medical experts. Others, called models of physician need, are based upon morbidity and mortality data in a population leading to estimates of the professionals needed to treat all illness. Finally, models based upon demand use data on existing patterns of health service utilization and the economic resources available to purchase health care. Since all of the models use different assumptions, sets of data, and statistical procedures, their projections naturally also differ.

The major national models were developed by GMENAC and the BHPR. In New Jersey, the State Department of Higher Education model is also available.

1. **The New Jersey Department of Higher Education Demand Model** (1975) was developed under Lewis Dars, Ph.D. It is a single regression model that relates county physician/population ratio, the populations' permanent income and median age, inpatient hospitalization rate and physician availability in order to generate a demand estimate for professional distribution by county. This model was first used in 1975, and updated in June 1978.

2. **The Graduate Medical Education National Advisory Committee (GMENAC) Model** (1980) was developed under Alvin R. Tarlov, M.D. It was an adjusted needs procedure, meaning that objective data defining the need for medical services in the population was adjusted by medical experts to reflect the realities of medical practice. First it estimated supply, and then estimated need for each medical specialty. The supply projection used attrition rates, the expected addition from training, and licensure to forecast each specific specialty pool. It then ran a second specialty specific model which was based upon identifying actively practicing physicians in 1978, both allopathic and osteopathic. These two estimations were then combined into a graduate medical education model. Physician requirements by specialty were obtained from Delphi Technique Panels of medical experts. The result was a nationwide projection by specialty based upon many diverse variables.

Long-term projections using the physicians requirements model were adjusted using some demand type variables such as current hospital utilization trends, estimates of physician productivity by specialty, and variables of age and sex distribution.

In summary, the GMENAC model first estimated physician supply based upon the levels of available residencies in each particular geographic area. Then, the adjusted need requirement model projected the total service requirements for a given population using a survey of the prevalent diseases and disabilities. After this, it estimated the future number of individuals who would be using these services. Finally, Delphi Panels were used to adjust the estimates for physician need/requirements. The procedure generated a projection of the new physician requirement or need for a given population at a specific time period.

3. **The United States Bureau of Health Professions Research (BHPR) Model** (1985) was developed under John Drabek, Ph.D. and Ernell Spratley. This model is used annually by the BHPR in its report to Congress. It is essentially an update of the 1980 GMENAC Needs Adjusted Model except that it provides three projection ranges (high, medium and low) as well as sub-national (state) projections. The model's population estimates are also modified to adjust for the

preference of young physicians to follow population migration trends toward the south and west. The model's estimates of current physician supply by state are based upon the American Medical Association supply data for Medical Doctors as of December 31, 1981.

4. **Health Maintenance Organization Based Ratios,** derived from studies of physician productivity conducted in health maintenance organizations, have shown that a physician-to-population ratio as low as 140/100,000 enrollees is adequate. HMO estimates are lower than others because HMO enrollees tend to be young, healthy and employed, and because HMOs try to manage cases to prevent hospitalization and unneeded use of specialists. Because no historical statistical study has yet been done on long-term use of physicians by HMO enrollees, physician forecasting models for HMOs are still under development.

APPENDIX B

UMDNJ Medical Manpower Study - 1986 Physician Supply and Projections

Introduction

The University of Medicine and Dentistry of New Jersey undertook a study of New Jersey physician manpower in order to assess the future enrollment directions necessary to meet the state's needs. The purpose of this study was threefold: 1) to determine the supply and the need/demand for health professionals in New Jersey; 2) to determine the distribution of health professionals within the state; and 3) to determine the present specialty distribution of these health professionals as compared to the projected need. In order to assess manpower implications, the study used data from a number of sources: American Medical Association membership listings; New Jersey licensure data; licensure data from New York, Pennsylvania, and Delaware; American Osteopathic Association membership listings; National Residency Match Program data; Advisory Graduate Medical Education Council data; Education Commission for Foreign Medical Graduates data, and UMDNJ statistics. As a result, New Jersey now has a valid physician data base that, when updated annually, will provide a test for new assumptions and approaches to changing medical service practice patterns in the state.

The need/demand portion of this study was based upon a number of adjusted need/demand forecasting models including those developed by the Department of Higher Education for earlier reports specific to New Jersey, the Graduate Medical Education National Advisory Committee (GMENAC) and Bureau of Health Professions Research (BHPR).

Physician supply calculations are more complex for New Jersey than elsewhere because of the state's location between two medical service giants--Philadelphia and New York City. The possibility that physicians living in New Jersey may be working in New York City and Philadelphia, while other physicians living in New York City and Philadelphia may be working in New Jersey, also complicates the analysis. Therefore, all membership listings may well be inaccurate indicators of physician supply since the actual practice location may be neither the address shown for A.M.A. or A.O.A. membership nor the location of the licensure address.

Therefore, in order to determine the actual location of practice for manpower supply in the state, a complex process of matching licensure data from adjacent states and from the professional associations with New Jersey licensure data was undertaken. Both telephone and mail surveys were performed in order to identify as closely as possible the practice location and percentage of active practice in New Jersey.

Study Design

The UMDNJ Medical Manpower Study is composed of a number of sequential studies that were used to isolate the number of physicians actively practicing in New Jersey from those who are not practicing or who are practicing elsewhere as of December 1985. The estimated number of actively practicing physicians in New Jersey was 16,513 physicians. In addition, the composite forecast need/demand for physician manpower in the state through the year 2000 was generated using several methodologies. The UMDNJ manpower study high estimate for the year 2000 supply was 20,636 physicians while the low estimate was 18,576.

The key analyses prepared were:

- Forecasts of New Jersey manpower demand using several methodologies for the period 1985 to 2000. This included the revision and updating of the extant models using current data from the New Jersey Department of Higher Education Demand Model (1975), the Graduate Medical Education National Advisory Committee (GMENAC) Model (1980), and the U.S. Bureau of Health Professions Research (BHPR) Model (1985).

- Estimation of UMDNJ physician output from 1985 to 2000, and the impact of UMDNJ on physician supply for the same period.

- Characterization of the existing 1985 physician supply through:

  a) Development of a New Jersey physician supply model that utilizes age cohorts, entry rates, and attrition rates which are age specific to forecast physician gain per year;

  b) Analysis of the American Medical Association and American Osteopathic Association data including comparison with the New Jersey licensure tape and identifying the demographic characteristics of the membership of these associations;

  c) Computerization and analysis of the New Jersey AGMEC survey and analysis of the National Residency Matching Program data in order to characterize the 1985 New Jersey residency program participants;

  d) Analysis of UMDNJ physician graduates' impact upon the physician supply of New Jersey;

  e) Analysis of New Jersey licensure tape, including a telephone survey to verify a small subset of New Jersey licensure tape data and a mail survey to estimate the location of and percentage of practice activity for New Jersey licensed physicians (licensed both in and out of state) to remove New Jersey licensed physicians who are non-practicing, part-time, or maintaining out-of-state practices from the active data bases.

Conclusions

Based upon this study's results, New Jersey is clearly a unique state and its physician manpower needs require more extensive analyses than a typical state having limited manpower and patient flow across its borders. New Jersey is unique in that New Jersey sends 32% (8,240) of its physicians' licenses to out-of-state addresses and the data indicate that approximately 6,500 licenses from adjacent states are also sent to physicians at New Jersey addresses. Therefore, the practice patterns of physicians practicing in New Jersey, with its close proximity to its neighbors and the obviously large numbers of physicians with dual state licensure, requires further close examination.

The analysis of the New Jersey Medical Manpower data bases must still be further refined. More detailed analysis of specialty mixes and board certification must be undertaken to further adjust the developed model to address New Jersey's tertiary medical needs.

The New Jersey specialty mix itself, however, does not exceed any of the national proportions measured or forecasted by either the A.M.A. distribution report, the GMENAC and/or the BHPR models. In fact, the tertiary care sub-specialties in several Health Service Areas of New Jersey are below the existing national proportions. However, adjustments will be required in future residency training programs to create a cost effective specialty mix in all of the New Jersey Health Service Areas in response to changing practice patterns and changing technology. The north-south concentrations of physicians around urbanized areas leaves many segments of New Jersey's population with measurable limitations as to physician availability...

Source: Raymond B. Fagan, "UMDNJ Medical Manpower Study - 1986, Part I - Physician Supply and Projections," Executive Summary, Draft (June 1986).

FOOTNOTES

1. Annette Van Veen Diagle, ed., *U.S. Medical Licensure Statistics 1984 & Licensure Requirements 1985.* American Medical Association, Chicago (1986).

2. Graduate Medical Education National Advisory Committee (GMENAC), "Report of the Graduate Medical Education National Advisory Committee to the Secretary, Department of Health and Human Services," Washington, D.C. (1980).

3. Barbara B. Manard and Lawrence S. Lewin, "Identifying a State's 'Payoff' for Supporting Medical Training," *Physician Supply And Distribution,* National Center for Health Services Research, Washington, D.C. (1983).

4. Richard L. Ernst and Donald E. Yetl, *Physician Location and Specialty Choice*, Health Administration Press, Ann Arbor (1985).

5. "Medical Education in the United States 1985-1986," *Journal of the American Medical Association* , 258 (12 September 1986).

6. *A Policy Prospectus for Graduate Medical Education in New Jersey*, New Jersey Department of Higher Education (1985).

7. Projection by the New Jersey Department of Health, Division of Health Planning and Resources Development, based upon 1985 bed utilization data.

8. Lawrence S. Linn, Robert H. Brook, Virginia A. Clark, Arlene Fink, and Jacqueline Kosecoff, "Evaluation of Ambulatory Care Training by Graduates of Internal Medicine Residencies," *Journal of Medical Education* 61 (April 1986): 301-302. See also Gerald T. Perloff, "Teaching Clinical Medicine in the Ambulatory Setting," *New England Journal of Medicine* 314 (2 January 1986): 27-31.

9. *Physicians for the Twenty-First Century,* Association of American Medical Schools, Washington, D.C. (1984).

10. *Manual of Structure and Functions for Residency Review Committees*, Accreditation Council for Graduate Medical Education, Chicago (Revised February 1986).

11. In their survey of research on the subject, Manard and Lewin concluded: "The research is unequivocal that black practitioners do tend to serve black populations" (p. 7.2.). For a recent research assessment see: Stephen N. Keith, *et al.* , "Effects of Affirmative Action in Medical Schools," *New England Journal of Medicine* 313 (12 December 1985): 1519-1524.

12. Exerpt from the AMA Board of Trustees Report submitted by the Task Force on Physician Manpower, p 12."Final Report of the AMA Task Force on Physician Manpower," American Medical Association, Chicago (1986).

A major concern of the Task Force is that a surplus of physicians could lower the quality and raise the costs of physician services. There are several reasons for this concern. First, it is possible that as competition among health care providers becomes more intense and as the volume of physician practices shrinks, physicians may not perform certain procedures frequently enough to maintain a high level of skill. As of yet, no study has analyzed the relationship between the size of a physician's practice and the quality of care. However, in related research, it was found that better outcomes for surgical patients were more likely in high-volume hospitals.

A second area of concern is the large amount of primary care in the U.S. that is actually provided by physicians trained in nonprimary care specialties. As competition in the health care delivery system increases, a growing proportion of specialists may start providing primary care in order to compensate for the lower demand for specialty services. Since specialists tend to charge more than generalists for comparaable services, and have a more technology-intensive approach to treatment, the cost of primary care would increase without necessarily improving quality.

13. The AMA Task Force on Physician Manpower reached the following six conclusions:

a. There is a surplus of physicians (regardless of specialty) in many areas of the U.S.

b. There is a surplus of physicians in some specialties in most areas of the U.S.

c. In most areas of the U.S., there is an impending surplus of physicians in most specialties.

d. The impending surplus of physicians is likely to have negative consequences on the quality and cost of patient care.

e. Given the historical developments and the current regulatory environment, market forces cannot be relied upon by themselves to assure cost-effective medical care and should be only one of many factors involved in considering manpower policies.

f. The inevitability of an increasing supply of physicians only underscores the necessity for an immediate change in AMA policies.

14. Raymond B. Fagan, "Medical Manpower Study" Draft, UMDNJ (June 1986).

15. June E. Holmes and Deborah A. Miller, "Factors Affecting Decisions on Practice Locations," *Journal of Medical Education*, 61 (September 1986): 721-726.

16. *Financing Graduate Medical Education*, Association of American Medical Colleges (April 1986).

17. Since hospital rates are set prospectively by the Hospital Rate Setting Commission, actual hospital costs may be higher or lower than reimbursement. Residents' salaries are not among the few categories of hospital expenditures (such as malpractice insurance) for which reimbursement is later reconciled to actual costs.

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