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ABSTRACT

The purpose of the study was to obtain possible insights into the substantive or procedural facets associated with the proposed development in the United States of intermediate health professionals (defined as personnel involved in diagnosis and treatment of disease through direct patient contact who have had less than the professional education of the physician but more than that of the nurse). The authors examined the status of programs in the United Kingdom and the Soviet Union by holding discussions with officials in selected health facilities of these countries. Midwifery and coronary intensive care were studied in the United Kingdom and feldshers and feldsherism in the Soviet Union. It was concluded that neither of the countries provides programmatic or regulatory models that can be applied directly to the development and utilization of intermediate health professionals or medical auxiliaries in the United States. However, selected elements of the medical care systems in the countries studied do provide guidance for regulatory revision. The paper includes an introduction which states the case for the development of intermediate health professionals followed by reports of the findings in each of the two countries studied and conclusions based upon the findings. (JK)

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A STUDY OF SELECTED PROGRAMS AND PROBLEMS IN THE
UNITED KINGDOM AND THE SOVIET UNION

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I. INTRODUCTION

In November 1967 the National Advisory Commission on Health Manpower concluded that a significant factor contributing to both the high cost and uneven geographical distribution of medical care in the United States is the relative absence of intermediate health professionals in the delivery of health services. ⁽¹⁾ Intermediate health professionals would include personnel involved in diagnosis and treatment of disease through direct patient contact who have had less than the physician's twelve years of professional education and training but more education and training than the professional nurse, who now may have as little as

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two years of post-high-school education. One example would be pediatric nurse-practitioners--professional nurses who after more education and training are given an expanded role in providing total health care to children in the offices of private pediatricians in areas with inadequate health services.⁽²⁾ The intermediate health professionals should have a role in patient care that provides more independence and autonomy than now exists in the practice of nursing. The general category should include both males and females and must definitely provide career opportunities for males beyond those that now realistically exist in professional nursing, where recruitment and opportunities have been minimal.⁽³⁾ The titles that these intermediate professionals should be given are significant in recruitment; an effective argument against use of the title "nurse" can be made if males are to be expected to occupy a significant role.⁽⁴⁾ In order to help remedy the relative absence of intermediate professionals, the National Advisory Commission recommended that universities with Federal financial support establish experimental programs to train and use people in these new categories of manpower.⁽⁵⁾

There is also a great shortage of nurses and other personnel who have the same general level of authority and responsibility as the professional nurse.⁽⁶⁾ One proposed solution to this shortage has been the introduction of a new career category in the health industry: the medical auxiliary.⁽⁷⁾ There are various programs evolving now for training and using special types of auxiliaries who would have the level of authority and responsibility of the professional nurse, as contrasted to the pediatric nurse-practitioner. One such program is the Duke Medical Center's Physicians' Assistant Program.⁽⁸⁾ A major goal of all these efforts to develop medical auxiliaries is to attract males into an area in the growing health industry in which a large increase of manpower will be required.⁽⁹⁾ Medical-auxiliary training programs will probably emphasize skill and competence in special areas involving a high degree of technology, such as coronary and respiratory intensive care.

David Rutstein in The Coming Revolution in Medicine has stated the problem of recruiting both intermediate health professionals and medical auxiliaries in slightly different language:

If recruitment is to be effective, a realistic plan for the future cannot treat the nursing profession as a single unit. Our plan for the future must bring an end to the perpetual wrangling over the status of the nurse by looking with new eyes at the problem as a whole.

This nursing example outlines the process that must be followed for each of the medical professions and vocations. Using data collected with specific relevance to medical care needs, systems analysis should make possible a more efficient use of medical personnel in our complex system of medical care. (10)

One major impediment to the development of new medical vocations is the existence of legal barriers retarding progress in the training and use of intermediate health professionals. (11) This entire subject has been studied and reviewed by one of these writers and four collaborators at length elsewhere. (12) Their studies show that state licensure statutes make no provision for the orderly, systematic creation of new categories of health manpower. (13) Application of current standards based on these statutes might result in serious professional, penal, and malpractice risks to those experimenting either in the development of new categories of personnel or in the delegation of new functions to existing categories. (14) Such potential risks obviously constitute significant obstacles to rapid progress in this area.

Nevertheless, these obstacles must be coped with; progress will require revisions of the existing state legal regulatory systems, which establish standards defining the penal and malpractice risks arising from such developmental programs. These revisions should be aimed at accomplishing the following:

1. Permitting experimental programs by universities and other qualified institutions and individuals for the purpose of developing and demonstrating the safety and effectiveness of new categories and of new uses for existing categories of health manpower.
2. Regulation of such programs so that patients will be protected against irresponsible and dangerous experiments and so that hazards to patient safety which develop during the course of such experimental programs can be controlled.

3. Permitting the translation of those innovations that are demonstrated to be safe and effective into regular patterns of health and medical care. (15)

Such revisions are now within the scope of possible legislative and/or administrative changes in at least one state. (16) Their adoption might result in new regulations to control the experimental programs in a manner somewhat analogous to the Federal Government's control of drug experiments in human subjects, pursuant to the Kefauver-Harris amendments to the Food, Drug, and Cosmetic Act of 1962. (17) A more modest approach might be preferred by some states; for example, one that provides the following:

1. That experimentation and training involving formerly unauthorized uses of health manpower might be conducted in university hospitals if a comprehensive plan of the experiment or training program were submitted to and approved by an appropriate hospital committee and filed with the state licensing authority. (Particular conditions might be imposed, such as requirements for physician supervision and for written consent from all patients whose care was delegated to nonphysicians as part of the program.)
2. That new functions for existing categories of medical personnel could be created by the state licensing authority if experimental results and medical manpower requirements showed that such action was in the public interest.
3. That persons trained in such training programs could be licensed on an ad hoc basis to perform only those functions enumerated in the license, upon certification of competence by the hospital and when such licensing has been shown to be in the public interest. (18)

This set of revisions is illustrative; other regulatory models might be developed as the result of further research into the existing state laws.

To obtain possible insights into the substantive or procedural facets of such changes, the authors examined the status of programs using or developing intermediate health professionals or medical auxiliaries of the type discussed above in the United Kingdom and the Soviet Union. These two nations were selected for this study because each represents an industrial society with problems of distribution of high-quality medical care, which includes the benefits of modern technology, to urban and rural populations. Each has approached its problems of financing and organizing the delivery of these services in a different way, both unlike the approaches being used in the United States.

The goals of this study of United Kingdom and Soviet programs were:

1. To determine whether there were in fact any programs that might be used as models for the design of a revised regulatory program in the United States.
2. To study such programs and determine what experience in their evolution, status, and operations might be valuable in the design of revised state legal regulatory programs in the United States.
3. To study the possible legal, administrative, or operational prerequisites to establishing such programs and the concomitant or subsequent legal regulations.
4. To determine whether these countries have developed solutions to their manpower problems which might obviate the need for either intermediate health professionals or medical auxiliaries.

Since a comprehensive study would have become unmanageably broad and extensive, it was decided to select programs for detailed study and then attempt to make generalizations from them. Midwifery in the United Kingdom and feldshers and feldsherism in the Soviet Union were selected because of their obvious relevance. In addition, an innovative service in the United Kingdom, coronary intensive care, was investigated to determine whether its initiation and expansion, with its resultant manpower problems, resulted in a need for intermediate health professionals or medical auxiliaries.

During July 1968, the authors held discussions with experts and officials at the following facilities:

The United Kingdom

Royal Post-Graduate Medical School, Hammersmith Hospital,
London
Radcliffe Infirmary, Oxford
Western Infirmary, Glasgow
Queen Mother's Hospital, Glasgow
Royal Infirmary, Edinburgh
Royal Victoria Hospital, Belfast

The Soviet Union

Borodino Hospital, Moscow
Central Ambulance Service, Moscow
Moscow Automobile Plant Polyclinic, Moscow
Moscow District Hospital, Leningrad

In addition, discussions were held with Dr. Michael Heasman of the Scottish Ministry of Health, Edinburgh; Dr. Gillian Ford, U.K. Ministry of Health, London; and Dr. A. Malishev, Soviet Ministry of Health, Moscow.

II. THE UNITED KINGDOM

MIDWIFERY

Midwifery and the role of midwives in the delivery of prenatal, obstetrical, and postnatal care in the United Kingdom were selected for study because expanded use of professional-nurse midwives in the United States has been suggested as a means for improving the quality and quantity of prenatal and obstetrical care, particularly in ghetto areas and deprived rural areas.⁽¹⁹⁾ Discussions with leaders in nurse-midwifery training programs in the United States had also indicated that the U.K. programs would be highly appropriate for this study.⁽²⁰⁾

Midwifery has had a long history as an independent profession in the United Kingdom.⁽²¹⁾ The use of midwives in obstetrical care is not an innovation and cannot be viewed as an experimental program. Historically and operationally, midwifery in Britain is different from professional-nurse midwifery, both in training and in utilization, in the United States, as exemplified by Dr. Louis Hellman's program at Kings County Hospital in Brooklyn.⁽²²⁾ The training and professional status of the British midwife are comparable to those of the British professional nurse; the midwife is thus the equivalent of a professional nurse specialist in the United States, with one major function that is beyond the scope of nursing practice--the delivery of babies. The personnel in the Hellman program, however, are more highly trained intermediate health professionals.

British professional midwives work both out of hospital-based in- and out patient services and through domiciliary services and still engage in home deliveries to some extent. In this study we examined only hospital-based in- and out-patient services and hospital-based deliveries. The information and conclusions in this section were drawn from visits and observations at the Queen Mother's Maternity Hospital and the Western Infirmary in Glasgow, Scotland; interviews; and studies of relevant documents.

In the institutions studied, the midwives not only carry out uncomplicated deliveries; they also do general floor and bedside nursing and clerical tasks and give instruction in health education for mothers

and expectant mothers. The midwives do not play either a major independent role or a relatively unsupervised dependent role in prenatal or postnatal examinations of patients, do not prescribe diets or medications, and do not prescribe contraceptive drugs or devices. In general, they appear to be part of a traditional and established program in which there is no striving for innovation in the tasks or responsibilities of professional midwives.

The midwifery programs in Glasgow and in Scotland are considered to be typical of those in England, Wales, and Northern Ireland, which have separate midwifery Regulatory Boards but similar problems. The profession of midwifery in Britain is in a static condition;⁽²³⁾ there are serious personnel shortages and great difficulties in recruiting midwives and in keeping them professionally active once they are recruited and trained. These problems involve pay, clerical duties, professional status, working conditions, etc.⁽²⁴⁾ Basically, although social, economic, and technical conditions in obstetrical care and in opportunities for women outside of the health professions have changed, midwifery has not been a dynamic, changing profession.

An extensive governmental study aimed at solving the problems of midwifery as a profession has resulted in no recommendations either for a major upgrading of the tasks and training of midwives or for a more dynamic role for the midwife in providing obstetrical and maternity services.⁽²⁵⁾ Furthermore, there have been no recommendations for operational or economic studies into the more serious question of which tasks should be carried out by the obstetrician-physician and which by the professional midwife in prenatal and postnatal care or in contraception. No programs, much less legal revisions that might permit changes in the allocation of tasks and responsibilities between obstetricians and midwives, appear to be forthcoming from either that study or from leaders who are generally concerned about the problems of midwifery. The only suggestions that have been made concern improvement of working conditions.

The lack of thrust toward expanded use of midwives observed in Scotland, which was reported to exist generally in Britain, cannot be accounted for by the infant-mortality situation: In 1965 the Scottish

infant-mortality rate was 23.1 deaths per 1000 live births, as compared with 21.6 deaths per 1000 live births in the white population of the United States, neither rate being outstanding.⁽²⁶⁾ In contrast, there are 19.0 deaths per 1000 live births in England and Wales, which still compares unfavorably with the rates in both Sweden (14.2) and the Netherlands (14.4).⁽²⁷⁾

It is clear that the existence or creation of new categories of medical auxiliaries cannot in itself solve the complex manpower problems that exist in the delivery of medical care in a modern industrial society. Such categories must be regularly updated in terms of duties, responsibilities, authority, and training, through fairly continuous functional analyses of health-service manpower requirements. This updating is important not only for efficient delivery of services but also for keeping the medical profession dynamic and progressive. Any legal regulatory program which controls the scope of practice or responsibilities of the various types of medical professionals must make very clear provision for such updating.

Coronary Intensive Care

Coronary intensive care units in hospitals in England, Scotland, and Northern Ireland, and the innovative mobile coronary care ambulance program in Belfast, Northern Ireland, were selected for study because they represent major programs which impose special manpower requirements and in the operation of which intermediate health professionals or medical auxiliaries might have a significant role. Furthermore, such service programs either actually or potentially have counterparts in the United States. Thus the developmental history of these programs could have meaningful implications for the revision of U.S. regulatory statutes.

The questions of new roles for professional nursing and the development of new manpower categories have been considered by the Royal College of Nursing, the National Council of Nurses of the United Kingdom, and the British Medical Association, because of concern for safeguarding the position of the nurse when she is called upon to undertake tasks outside the routine scope of nursing.⁽²⁸⁾ These groups, in a policy statement, agreed that:

1. Certain duties are clearly outside the scope of nursing and should be undertaken by nurses only in grave emergencies.
2. Certain other duties are not within the scope of routine nursing and should only be assigned to the nurse following agreement among those concerned, with full consideration of all relevant factors, including the competence of the nurse to undertake them.
3. To reach agreement on procedures to be undertaken by the nursing staff in a particular hospital or group of hospitals, joint committees of medical and nursing staff should be set up on a local basis and should include the matron and a representative of the consultant staff of the hospitals concerned.
4. The employing authority should approve the agreements reached above and are expected to defend the nurse in any proceedings commenced against her.
5. Because the problem of nurses being called upon to undertake duties outside their generally accepted sphere cannot be dissociated from the question of adequate establishments for medical and technical staffs, a first step in circumventing overdelegation to nurses is to appropriately adjust the medical and technical staff establishment. ⁽²⁹⁾

From the above, it is clear that only minor expansions of the nurse's role are being proposed and that the main interest is preservation of the nurse's present role in giving personal nursing care. It is also clear that they have acknowledged the need for and training of technical staffs in hospitals, which is a very significant development in and of itself. Furthermore, the agreement has defined the overall problem and has recommended the establishment of a Medical-Nursing Liaison Committee within the hospital services to facilitate discussion and determination of the respective frontiers of professional responsibility. Since the roles, status, and responsibility of both intermediate health professionals and medical auxiliaries are at the interface between medicine and nursing, mutual involvement in establishing and regulating these new professions, as stipulated in the

above agreement, will be essential. Of equal significance is the assignment of all responsibility for role determination and, by implication, experimental personnel categories to the hospital service level, whereby the hospital is given responsibility for legal defense so that innovation can be tried at the operational level, leaving the hospital and its professional staff with the legal and ethical responsibility for safeguarding the patient's well-being. This attitude is clearly operation-oriented in contrast to having new groups or personnel categories licensed or controlled by rigid governmental policies.

Efforts to explore the amount of progress made pursuant to this agreement in coronary care programs revealed that, as in the case of midwifery, there has been very little serious attention given to innovations such as the development of new personnel categories.

In the coronary care program at Hammersmith Hospital and the Royal Post-Graduate Medical School in London, nurses have not had any major expansion in duties because of the availability of large house staffs of physicians. Similarly, no requirement for intermediate professionals or medical auxiliaries has ever arisen there. These hospitals have never undertaken any programs to establish such professionals, although members of the medical and nursing staffs indicated that such persons would be useful in non-teaching community hospitals for coronary intensive care duties and other special care programs.

Radcliffe Infirmary, the teaching hospital of Oxford University, has no coronary care unit because of a critical nationwide manpower shortage which is particularly severe with regard to bedside nurses. The medical and nursing staff there foresee no communitywide application of specialized services such as coronary care until the manpower problem is solved. They consider that some of this solution is dependent upon the development of new intermediate health professionals or medical auxiliaries, but no movement appears to be afoot at Radcliffe or elsewhere to push forward in developing such new professionals. Moreover, the medical and nursing personnel at Radcliffe were making no plans to establish new duties for professional nurses because of the existing real shortage of bedside nurses.

At the Royal Infirmary in Edinburgh, the coronary care program is physician-operated and involves the participation of thirty physicians. It is also staffed by specially trained nurses who assist the physicians but who assume non-nursing roles, such as electrical defibrillation of patients with ventricular fibrillation, in conditions classed as grave emergencies. The Department of Medicine at the Royal Infirmary appeared to have no real concern for innovations in the uses of manpower or the development of new professional personnel categories. Similar observations were made in the coronary care program at the Royal Victoria Hospital in Belfast, Northern Ireland, and the mobile coronary care program operated by that hospital. Both programs are physician-oriented and operated. Although the mobile unit affords an excellent opportunity for experiments in the use of intermediate professionals and medical auxiliaries, there has been no real interest in such experiments. If the mobile care program which now has only one ambulance unit were to be expanded to provide citywide services as a community health measure in Belfast, manpower innovations would be required. The present service provides only one such ambulance in a city with a population of 500,000.

Although this study did not include every coronary care program in the United Kingdom and did not even constitute an adequate statistical sample of these programs, much less other new programs such as respiratory intensive care, it did involve contact with leaders in innovation, research, and service who were knowledgeable about manpower problems. These leaders were not pursuing new manpower programs and knew of none being carried out, in spite of the desirability of communitywide application of improved technological capabilities. The leaders in the institutions visited showed no desire to address themselves to developing and evaluating solutions to the manpower-shortage problem generally or to the development of new professional categories. Further visits with the Director of Health Services Research and Intelligence in the Home and Health Ministry of Scotland led to a statement that the British are holding their heads in the sand with regard to innovations in the uses of health manpower. (30)

DISCUSSION

An effort was made to determine why in a country with a National Health Service, a stated commitment to social progress, recognized health manpower shortages at all levels, and reasonably clear uses for the services of intermediate professionals and medical auxiliaries, no real progress was being made toward innovations in the development training, and use of new kinds of health manpower or of upgrading the duties and responsibilities within existing categories. Such a determination might cast light on operational prerequisites that could lie in the way of a revised regulatory program to permit such changes. Therefore we investigated two relevant points: medical malpractice and the impact of specialization on the National Health Service.

Inquiries were made of the Medical Defense Union, which has the role of indemnification of practitioners against liability for professional malpractice, to determine the Union's policy toward giving legal assistance and indemnification to a member involved in litigation arising out of proceedings brought against him because of the alleged negligence of a non-physician assistant (such as an intermediate health professional).⁽³¹⁾ According to the Union, assistance and indemnification would not be given if the task performed by the assistant should have been undertaken only by a medical practitioner or was carried out without adequate supervision by the medical practitioner.⁽³²⁾ However, because there are no precise definitions of what duties should be undertaken only by a medical practitioner or what duties require direct supervision of a medical practitioner, the Union stated that assistance would be afforded in those cases where the task performed was within the scope of duty defined by the hospital involved and if special training had been provided by that hospital or the physician in charge of or supervising the assistant.⁽³³⁾ It appears that if hospitals were to develop and use intermediate health professionals or medical auxiliaries pursuant to the previously described agreement of the British Medical Association and the Royal College of Nursing, no problems with the Union would result, because the above-stated conditions would be met. Consequently, lack of medical malpractice indemnification does not appear to be a major cause of the current lack of innovations.

The lack of manpower innovation appears more likely to be a facet of the major British problem of defining the relations, roles, and status of general practitioners and specialists in the National Health Service and British Hospitals. That subject has been discussed thoroughly and completely elsewhere.⁽³⁴⁾ It is still fraught with emotion and controversy and constitutes a problem equal to if not exceeding that of lack of manpower. Until patterns of use and the roles of the medical profession itself are more clearly resolved, progress in establishing new careers for intermediate health professionals and medical auxiliaries in Britain is likely to occur slowly, if at all. The question of whether this situation and the lack of progress are causally or coincidentally related could not be answered scientifically by this study. However, given the seriousness of the specialist/general-practitioner problem, it would be very difficult to assume that it has not had a major impact on the manpower situation generally.

In spite of the failure to discover programs and experiences that could serve as models for innovation and regulatory revision in the United States, this study in the United Kingdom did produce the following insights which are most relevant to the substantive and procedural aspects of the regulatory revisions discussed previously:

1. After a new manpower category is established, function and roles must be revised periodically to reflect social, economic, and technical changes to keep the category viable. Legal regulatory programs must have sufficient flexibility to permit such revisions on an on-going basis.
2. Focusing the regulatory effort on the institutions using such personnel (e.g., hospitals) appears to be a feasible means of regulating innovations because new programs will most likely result from the efforts of the staff and administration of such institutions.
3. Agreement among the medical and nursing professions that such innovations are necessary and their joint participation in developing and regulating the innovations will often overlap the domains of authority and responsibility of each of these professions.

III. THE SOVIET UNION

FELDSHERS

The Soviet Union has had considerable experience with middle medical workers, including feldshers, about whom a considerable amount has been written recently. Therefore, we also examined the use and status of general feldshers in urban medical care in Moscow and Leningrad. The role, education, and training of the feldsher in the Soviet Union has been described by Victor Sidel in two excellent articles published in 1968 and will not be repeated here.⁽³⁵⁾ Feldshers are classified as middle medical workers trained in vocational institutes, usually after completion of the seven-year rather than the ten-year general schooling program. In the Soviet Union middle medical workers are technical rather than professional personnel. The feldsher and other middle medical workers, such as nurses, are directly responsible to the physician rather than to other middle medical workers. They are not in a hierarchical structure within or among other categories of middle medical workers in urban areas.

Direct observations of feldshers at work, supplemented by discussions with their physician supervisors in a referral hospital, the central ambulance service, a polyclinic in Moscow, and a district hospital in Leningrad, showed that feldshers clearly are dependent, supervised personnel whose major responsibilities are in technical, outpatient, ambulance, and industrial first-aid activities. They are not physicians' assistants in the sense of having any supervisory role over other personnel, as nurses or midwives do. They have no independent or discretionary role in treatment, except in true emergencies when no physician is available. With their functions, education, and training, feldshers do not appear to occupy the role of the intermediate health professional envisaged by the National Advisory Commission on Health Manpower in the United States in 1967.⁽³⁶⁾ The feldsher should more appropriately be considered a medical auxiliary as described earlier, who probably has less status, authority, and responsibility than the nurse in hospital-delivered services. While the feldsher serves as the peasants' physician in rural areas, the evolving pattern

in Moscow and Leningrad appears to be defining the role of the feldsher as a true technician and nothing more. Furthermore, there appear to be no programs under consideration among the staff in the Health Ministry or among practitioners, both of whom freely admit that there are manpower shortages and supply problems throughout the Soviet Union, for the creation of new intermediate professional categories, upgrading of feldshers, or defining of new roles for the feldsher in the delivery of medical care. The feldshers and middle medical workers have a long history in the Soviet Union, and there is no pressure, systems analysis, or proposed study to expand their roles.

There are no relevant Soviet legal or regulatory models that can provide a basis for legal revision in the United States. Nevertheless, the fact that the middle medical worker categories have no hierarchical relation to one another but operate as team members under the supervision and management of the physician is highly significant. There appeared to be good relations among all middle medical worker categories and between middle medical workers and physicians in the Soviet Union. The physician clearly plays the managerial role over the middle medical workers as well as the therapeutic role in patient care. In all of our observations and discussions, this managerial role with team support was stressed by the Soviets. Consequently, this experience could be used as a basis for resolving questions concerning the status of medical auxiliaries if and when they achieve a major role in the United States. This is of considerable significance with respect to proposed legal revisions. Rather than be concerned about who will be in charge of the new auxiliaries--professionals in other categories, such as nurses, or other auxiliaries--the medical auxiliaries and other medical personnel should be considered as team members under the management and overall supervision of the physician, each with clearly defined roles in which each has special professional and/or technical competence. Similarly, the physician will have to assume the role of a manager and accept the ultimate professional and legal responsibility for seeing that the other workers carry out their roles and duties appropriately. This is where the legal and administrative responsibility rests in the Soviet Union; it was quite clear that the specific

delegation of tasks and responsibilities to feldshers or nurses was a managerial decision made by the physician or the medical (physician) staff of the hospital or polyclinic.

Although the Soviets show considerable activity in the use of medical auxiliaries (middle medical workers), some question might arise as to why the Soviets have not initiated a vigorous effort to develop intermediate health professionals within their framework of socialized medicine. The answer probably lies in the fact that they already have three grades of physicians, the academician, the professor, and the regular physician.⁽³⁷⁾ These grades have considerable status and income differentials.⁽³⁸⁾ Most of these physicians are trained in medical institutes independent of a university. Furthermore, evening faculties for middle medical workers exist by which these workers can upgrade their qualifications and become physicians. These evening faculties graduated approximately 25,000 students in medicine, pediatrics, stomatology, public health, and pharmacy in 1963.⁽³⁹⁾ Thus by having several grades among physicians and evening programs by which middle medical workers can become regular physicians, the Soviets have developed an alternative to the intermediate health professional. Now their manpower problems are focused on the numbers in each of the categories and on the geographical distribution of personnel (particularly in rural areas). Their lack of intermediate health professionals is met by physicians who can be and are trained to enter practice in large numbers.

Consequently, in addition to providing insights for the regulation of the development of new medical auxiliaries, a study of the Soviet medical care system provides a total alternative to the development of intermediate health professionals; namely, several grades of physicians, the lower grades of which can be supplied in great numbers. Whether this alternative is a desirable or even a good model for consideration in the United States is beyond the scope of this study. All that can be said here is that it does exist. It should also be pointed out that there are still health and medical manpower shortages in the Soviet Union and serious problems regarding distribution of manpower to rural areas. These problems have not been solved there, and they will not be

solved in the United States simply by the development of categories of intermediate health professionals or medical auxiliaries. Other innovations in the overall health-care delivery system will be required if these problems are ever to be solved.

IV. CONCLUSION

Neither the United Kingdom nor the Soviet Union provide programmatic or regulatory models that could be applied directly to solve the problems of developing and using intermediate health professionals and high-level medical auxiliaries in the United States. Nevertheless, a study of selected elements of their medical-care systems does provide guidance for regulatory revision in terms of the need for flexibility, an institutional focus for regulation, the active cooperation of the medical and nursing professions in developing and administering the regulations, a non-hierarchical relation between nurses and other high-level medical auxiliaries, and the managerial role and responsibility of the physician. Furthermore, such a study provides a certain perspective with which developments in the United States should be viewed. Through this perspective, it becomes apparent that the United States is not in a bad position vis à vis either the United Kingdom or the Soviet Union. Developing medical auxiliaries of traditional types (such as the British midwives) will not result in any long-run net yields. And although the Soviets have many middle medical workers with a long history of experience in the delivery of medical care, they are not actively pursuing research either to keep these workers in dynamic roles or give them new roles in the delivery of medical care. Neither country studied offered any experience in experimental uses of manpower to solve current or evolving problems, and in neither country was there any mention of manpower research to define or redefine appropriate tasks for various manpower categories based on the skill and competence of the members of those categories.

Innovation, research, and experimentation in manpower must be pursued. The regulatory program developed to guide this must both foster innovation in health services and protect the patients. It is hoped that the insights developed in this study will facilitate development of such regulations.

FOOTNOTES

1. Report of the National Advisory Commission on Health Manpower, Vol. 1, pp. 31-32 (1967).
2. Silver, Ford, and Gay, "The Pediatric Nurse-Practitioner Program," 204, J.A.M.A., p. 298 (1968).
3. Duff and Hollingshead, Sickness and Society, pp. 383-384 (1968); see also Editorial Notes--"Men in Nursing," J.A.H.A., p. 41 (1968).
4. Duff and Hollingshead, op. cit. supra., note 3 at pp. 383-384.
5. Report, Vol. I, op. cit. supra., note 1 at p. 32.
6. Duff and Hollingshead, op. cit. supra., note 3 at pp. 383-384; Report, Vol. I, op. cit. supra., note 1 at pp. 22-23.
7. Duff and Hollingshead, op. cit. supra., note 3 at p. 384.
8. Stead, "Conserving Costly Talents--Providing Physicians New Assistants," 198, J.A.M.A., p. 1108 (1966).
9. Duff and Hollingshead, op. cit. supra., note 3 at p. 384.
10. Rutstein, The Coming Revolution in Medicine, p. 136 (1967).
11. Forgotson and Cook, "Innovations and Experiments in Uses of Health Manpower--The Effect of Licensure Laws," 32, Law and Contemporary Problems, pp. 731-750 (1967); Forgotson and Roemer, "Government Licensure and Voluntary Standards for Health Personnel and Facilities: Their Power and Limitation in Assuring High-Quality Health Care," 6, Medical Care, pp. 345-354 (1968).
12. Forgotson and Cook, op. cit. supra., note 11; Forgotson and Roemer, note 11; Forgotson, Roemer, and Newman, "Licensure of Physicians," Washington Univ. Law Quart., pp. 249-331 (summer 1967); Forgotson, Roemer, and Newman, "Licensure of Physicians," Report of the National Advisory Commission on Health Manpower, Vol. II, pp. 287-406 (1967); Forgotson, Roemer, Newman, and Cook, "Licensure of Other Medical Personnel," Report of the National Advisory Commission on Health Manpower, Vol. II, pp. 411-492 (1967); Leff, "Medical Devices and Paramedical Personnel: A Preliminary Context for Emerging Problems," Washington Univ. Law Quart., pp. 332-399 (summer 1967).
13. Forgotson and Cook, op. cit. supra., note 11 at pp. 735-736, 743.
14. Forgotson and Cook, op. cit. supra., note 11 at p. 743; Leff, op. cit. supra., note 12 generally.
15. Forgotson and Cook, op. cit. supra., note 11 at pp. 745-746.
16. Work has been in progress since March 31, 1967, in North Carolina to develop such changes with the cooperation of organized medicine and nursing, the State Hospital Association, and state legal authorities.

17. Forgotson and Cook, op. cit. supra., note 11 at p. 746.
18. Forgotson and Cook, op. cit. supra., note 11 at p. 747.
19. Personal discussions with Louis Hellman, M.D., Professor of Obstetrics and Gynecology, State University of New York, Downstate Medical School, 1964-1968. The President's Panel on Mental Retardation, National Action to Combat Mental Retardation, 42, 57 (1962).
20. Personal discussions with Louis Hellman, M.D.
21. The Staffing of Midwifery Services in Scotland, Report by a Committee of the Council of the Scottish Health Services Council, 1965.
22. Personal discussions with Louis Hellman, M.D., September 1968; see also N.Y.C. Health Code 543.03(c)(3), as amended February 9, 1966, for the legal scope of practice of the professional nurse-midwife in New York City.
23. The Staffing of Midwifery Services in Scotland, op. cit. supra., note 21, p. 7.

The report stated that there are pressures and strains on hospital midwives which are exacerbated by misuse of existing hospital staffs and poor working conditions.
24. The Staffing of Midwifery Services in Scotland, op. cit. supra., note 21, pp. 7, 9.
25. The Staffing of Midwifery Services in Scotland, op. cit. supra., note 21 at p. 11.

The report showed that only 25 percent of the midwives' time was spent in technical midwifery nursing, and 1 percent on instruction both to mothers and pupil midwives. It did recommend that more regular nurses and lesser skilled persons be assigned work to permit midwives to carry out higher level tasks, but did not recommend systematic task analyses.
26. Rutstein, op. cit. supra., note 10 at pp. 22, 23.
27. Ibid.
28. The Royal College of Nursing and National Council of Nurses of the United Kingdom, The Duties and Position of the Nurse, February 1961 (Reprinted 1968).
29. Ibid.
30. Personal discussion with Dr. Michael Heasman, Edinburgh, Scotland.
31. The Medical Defense Union, Annual Report, 1967.
32. Letter from Phillip H. Addison, MRCS, LRCP, Secretary of Medical Defense Union, to E. H. Forgotson, dated 22 August 1968.
33. Ibid.
34. Stevens, Medical Practice in Modern England: The Impact of Specialization and State Medicine (1966).

35. Sidel, "Feldshers and 'Feldsherism'--The Role and Training of the Feldsher in the U.S.S.R.," 278, New Eng. Journ. Med., p. 934 (1968); Sidel, "Feldshers and 'Feldsherism' (Concluded)," 278, New Eng. Journ. Med., p. 987 (1968).
36. Report, Vol. I, op. cit. supra., note 1, pp. 31-32.
37. Field, Soviet Socialized Medicine, pp. 106-124 (1967).
38. Ibid.
39. Ibid at p. 121.