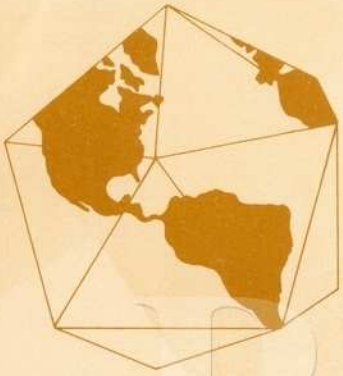
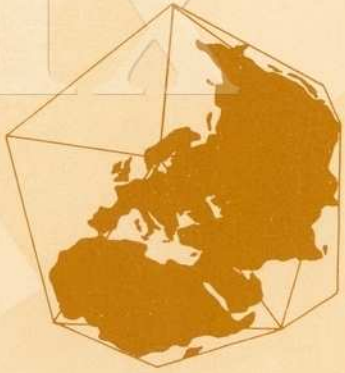


The Soviet Feldsher as a Physician's Assistant



THE SOVIET FELDSHER AS A PHYSICIAN'S ASSISTANT

by

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FOREWORD

The John E. Fogarty International Center for Advanced Study in the Health Sciences, National Institutes of Health, initiated in the Summer of 1970 a project for the study of medicine and public health in the Soviet Union. The purpose of this project was to advance U.S. knowledge of medicine practiced in the USSR, to publish selected documents covering all phases of Soviet medicine and health and to improve cooperation between clinicians, health scientists and health administrators in the U.S. and USSR. Subsequently this effort was expanded to include studies of a small number of other countries, the health systems of which contained certain unique or interesting features, and now has been incorporated into a Geographic Health Studies Program. In establishing such a program it was believed that understanding of such aspects of other countries' health systems will significantly assist the leaders of the American health system to place in proper perspective our own policies, procedures, and interests.

This study on the "Feldsher" by Dr. Patrick B. Storey is one of several he has done on different aspects of the Soviet health care system. He and his work are already familiar to Americans who have a particular interest in Soviet medicine. His travels to the USSR and knowledge of the language and literature have established him as an authority in this field. This study should be of interest to a wide audience in the health professions because it has relevance to consideration of the role of the "medical assistant" or "associate" in the American system.

It is a pleasure for the Fogarty International Center to sponsor this publication. Inquiries concerning the Geographic Health Studies Program should be addressed to Dr. Joseph R. Quinn, Geographic Health Studies Program, Fogarty International Center, National Institutes of Health, Bethesda, Maryland, 20014.

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INTRODUCTION

In the next 10 years of developing the American medical care system special attention will be devoted to the problem of medical manpower and the deployment of physician skills to the population. The problems involved in this area have been highlighted by the Report of the President's Commission on Health Manpower,[1] and by several major works concerned with providing health services and with the education of physicians to provide those services in a changing climate of medical care.[2,3,4,5]

Because of the need for organizational development and for the scientific study of this development under greatly varied local, geographic, economic, and professional characteristics, medical institutions and medical schools have become increasingly concerned with the process of health service and medical education.

In looking at the health care system and trying to examine some of its problems, one might well think of them in terms of:

1) insufficient personnel and resources;
2) inefficient organization of available personnel and resources; and
3) sub-optimal performance by personnel.

These three dimensions of the problem are clearly related to each other, and one dimension cannot be discussed without reference to the others. For example, the last-named may ordinarily be considered a function of individual ability and thus within the sphere of continuing medical education. But the ability of a physician to perform at his best is surely conditioned by the resources available to him, and thus continuing medical education is quite concerned with the prior two dimensions. Similarly, an inadequate depth of resource can be compensated to some extent by organization. But analysis of any problem involves its breakdown, so that this paper will be concerned primarily with one aspect of the first dimension —i.e., health manpower, with the problems of organization and education only referred to in particular instances.

If there are insufficient doctors, then it would seem reasonable to increase this number. In the past 10 years, new medical schools have been developed continuously, and graduate output has increased from existing schools. This has been accomplished without changing either the concept of the physicians' working milieu or the educational requirements to become a physician. Under existing constraints, such an increase in physician output is an expensive process, and one which the present author

feels unlikely will come close to solving the medical manpower problem in the very near future.

During this same period, many medical schools have been studying their curricula intensively and have made substantial changes—mostly with a view towards increased educational efficiency, but also with an increased awareness of the currently highly specialized nature of medical practice. At the same time, public demand is increasing for readily available health care of a comprehensive type, a demand which has forced a new look at the practice of medicine in our country. New organizational patterns for health care are being studied, and new roles for health care personnel are being developed.

The point has been raised by many that a new look such as this should include study of the way our physicians practice, with the idea in mind of facilitating their effort so that their highly technical knowledge and skills may be more widely available to the public. This question has risen naturally in the field of continuing medical education and is a prime question in the field of health care research. The concomitant ideas of improved and new technological resources and of improved and new allied health care personnel are logical sequents. There is now a widespread interest in the latter, with many centers developing this approach—i.e., the transfer of some of the functions of the doctor to other less intensively educated medical personnel.[6,7,8,9]

Many other countries have long experience with such kinds of personnel. One of the most extensive and best documented of these experiences is that of the "feldsher" in the Soviet Union, where this middle medical type of personnel has existed for over 250 years. Sidel has recently described the history and development of this profession and has provided an accurate overview of some of the feldsher's clinical functions, his health care organizational role, and his education.[10] A perspective of the place of the middle medical care personnel may be obtained from Field's writings on the Soviet health care system.[11,12,13] The purpose of the present work is to look at this middle medical care individual with further detail and to consider how and if he can relate to the American scene.

THE FELDSHER—SOME DEFINITIONS

An important condition for considering the feldsher's role is to understand that there are distinct kinds of feldshers, each of whom has a specific function different from the other. As is characteristic of the Soviet educational system, this means that the middle medical school education for each type is different from the beginning. This point will be made again in greater detail in the section on feldsher education, but it must be indicated here that the feldsher (not otherwise specified and thus sometimes alluded to as the "ordinary" feldsher or the "general" feldsher) indicated in the Handbook of Curricula [14] as Specialty No. 1901 is quite different from the akusherka (Specialty No. 1902), from the sanitarian-feldsher (Specialty No. 1904), and the feldsher-laborant (Specialty No. 1903). Furthermore, he fits among a group of "middle personnel" which, in addition to the above, includes the nurses (Specialty No. 19, whose numbers exceed those of all the other middle personnel), the dentists (Specialty No. 1905, literally "tooth doctors," who do a lot of the actual dental work under the supervision of the stomatologists, a separate main branch of the medical profession itself), and the dental technician (Specialty No. 1909).

The word "middle" (srednyaya) is not used as *we* presently use the word "intermediate"—i.e., to describe somebody who functions at a level between the doctor and the nurse in reference to the patient. It describes a level of professional falling between the doctors and the non-professional employees of a hospital or polyclinic. Thus, the Soviet concept of middle medical worker includes the all-important and very large nursing profession. But it is true that in certain circumstances the feldsher often functions at an independent level higher than that of the nurse.

This report will be concerned only with the general feldsher (not otherwise specified) and will not consider any of the other categories. In a sense, this is unfortunate because some of the other categories *may* be more relevant to our health manpower needs. However, they would have to be evaluated in this regard by our own specialized professional people.

THE FELDSHER—DUTIES

The first question concerning feldshers is to ask for a specific description of what they are expected to do, what they are allowed to do, and under what circumstances they may exercise their privileges. Fortunately, this is spelled out in detail in the Soviet law concerning health care,[15] from which the following is a direct translation: *

* * *

12. REGULATIONS CONCERNING THE RIGHTS AND DUTIES OF THE FELDSHER (FELDSHERITSA,** FELDSHERITSA-MIDWIFE)

Ratified by order of the Ministry of Health of the USSR
From June 6, 1946, No. 343.

I. In accordance with the edict of the Council of People's Commissars of the USSR from September 8, 1936, No. 1649 (SZ, 1936, No. 47, p. 401) the title of feldsher (feldsheritsa, feldsheritsa-midwife) is accorded to those persons who have finished a feldsher or feldsher-midwife school and have obtained a certificate of completion of a feldsher, feldsher-midwife school, or who have passed examinations under the system of external studies in a course of a feldsher, feldsher-midwife school.

II. The feldsher (. . .) prepares himself for work:

1. At independent feldsher, feldsher-midwife stations, where he renders independently in-patient, consultative, ambulatory care,*** gives care at home, and carries out preventive work.

2. In city and regional therapeutic-prophylactic institutions, where the feldsher works under the direction of a physician.

3. For carrying out measures against the development of and towards liquidation of contagious diseases, for accomplishing necessary

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* Unfortunately, a copy of this four-volume collection of legislation concerning health care in the Soviet Union is not available anywhere in the United States. A copy of the regulations concerning the rights and duties of the dental technician (Sec. 11), the feldsher (Sec. 12), and the midwife (Sec. 14) is available from the author.

** The suffix "itsa" feminizes a Russian word. In practice, the word "feldsher" is used to designate both men and women.

*** The Russian word "pomoshch" literally means "help" or "assistance." In medical jargon it means help to patients, for which we use the words "service" or "care".

prophylactic vaccinations (in accordance with special instructions of the Ministry of Health of the USSR), and also for performance of medical supervision of schools, kindergartens, and nurseries.

III. In the absence of a physician the feldsher (feldsheritsa) with completed middle medical education and after not less than three years of service as a practicing feldsher by specialty, may temporarily substitute for a physician at the health station of an enterprise in a clinic, in a small hospital (up to ten beds) under condition that a physician from the nearest medical institution be available for consultation; and also may manage temporarily a rural medical district or substitute for the physician of the district during the time of his absence.

IV. Feldshers (feldsheritsas, feldsher-midwives) in hospitals and in extra-hospital institutions both under direction of a physician and also independently have the right to carry out the following medical manipulations:

1. Performance of the following minor surgical operations: a) opening of superficial abscesses and phlegmons; b) extraction of foreign bodies not requiring use of complicated methods and not accompanied by significant damage to the integrity of tissues; c) placement of sutures and ligatures in the presence of hemorrhage (wounds and incisions) with observance of all the rules of asepsis; d) venipunctures, withdrawal of venous blood, blood letting by means of venipuncture; e) infusion of medicinal agents and solutions (physiologic saline, Ringer's solution, and glucose) subcutaneously, intramuscularly, and intravenously; f) drawing of blood for Wassermann, Widal, Weil-Felix reactions, and for malaria plasmodia; g) determination of blood groups; h) placing of styptic plaits; i) setting of uncomplicated dislocation, placing of transport splints in fracture cases (simple and compound) and of immobilizing bandages in fractures and dislocations; j) application of plaster casts; k) application of adhesive plaster splint for treatment of fractures by traction; l) use of local ethyl chloride and novocaine anesthesia; m) tamponade of nose and uterine hemorrhages; n) extraction of teeth in uncomplicated cases.

2. Catheterization and irrigation of the urinary bladder with a soft catheter.

3. Application of dry and blood-drawing cups, leeches, blisterflies, mustard plasters, compresses, poultices.

4. Irrigation of the stomach, clysters (cleansing, siphoning, therapeutic, drip, feeding), introduction of gas deflating tubes.

5. Examination of the urine for proteins, of the blood for sedimentation rate and hemoglobin.

6. Taking of smears from the throat and from the sexual organs.

7. Use of mechanotherapeutic procedures on order from a physician (Minin light, quartz, sollux, dry-air baths and others, massage and therapeutic gymnastics).

8. All forms of conservative therapeutic care for diseases of the eye, ear, nose and throat; viz, irrigation, painting, introduction of drops and ointment, removal of superficial foreign bodies, expression of trachomatous cores, application of bandages.

9. Rendering of obstetrical help in the absence of an obstetrician: a) conduct of normal delivery b) opening of fetal membranes at

delivery, c) resuscitation of the fetus in case of asphyxia, d) use of Crede procedure in postnatal period, e) manual extraction of the placenta, f) carrying out digital evacuation of the remains of the pregnant ovum in the presence of abortion (hemorrhage), g) suturing of first and second degree perineal tears, h) labour pain-relief within the limits of the instructions of the Ministry of Health of the USSR.

10. Rendering of emergency medical help in case of accidents (trauma, poisoning, drawing, hanging, etc.)

11. Independent effectuation of all forms of disinfection.

12. Sanitary inspection of food enterprises, baths, shower installations, water supply sources in their district, drawing up statements of sanitary inspections, and bringing to the attention of the state health inspector all noted sanitary deficiencies.

13. Carrying out health-cultural work with the population.

V. Feldshers (feldsheritsas and feldsheritsa-midwives) in addition to the medical procedures described above can carry out under the direct supervision of physicians other work also, for example: 1) assistance at the time of operation; 2) accomplishment of x-rays of fractures and dislocations; 3) duodenal intubation; 4) blood transfusion; 5) induction of inhalational anesthesia; 6) induction of intravenous and rectal anesthesia; 7) bouginage of the urethra; 8) tamponade in the presence of hemorrhage.

Note: Physicians are forbidden to entrust surgical operations to feldshers, except for those enumerated in the cited section.

VI. Feldshers, in charge of independent medical stations, and also temporarily in charge of physician districts or temporarily substituting for a physician in his absence, have the right to order from the pharmacy on their signature all medicines necessary for patients, among them also those containing toxic and powerfully acting substances, in dosages not exceeding the highest single dose with observance of the rules established by the Ministry of Health.

All other feldshers have the right to order from the pharmacy on their signatures medicines for provision of emergency care, but of those having in their content toxic and drastic substances only the following:

a) Silver nitrate in solution not greater than 2%;

b) mercury bichloride in solution not greater than 1:1,000;

c) caffeine and its salts;

d) tincture of opium, no more than five per prescription;

e) stiptitzin;

f) concentrated and weak extract of ergot;

g) tablets of santonin.

VII. Issued documents and also prescriptions should be signed by the feldsher with an indication of his title. Documents and prescriptions requiring certification with a seal will be authenticated with the seal of the institution at which the feldsher works or with the name.

VIII. The feldsher has the right to prepare medicines and to operate hospital pharmacies where pharmacists have not been appointed to the staff.

IX. In small hospitals (less than 100 beds), where the number of

doctors does not guarantee proper organization of round-the-clock medical duty in hospital and the admitting room, the feldsher may be assigned duty in the hospital and in the admitting room with a physician on call for appropriate cases.

X. Feldshers who have had appropriate special preparation may be permitted special functions connected with the work of different special medical institutions, such as: x-ray, physiotherapy, laboratory, and anti-malarial.

XI. The feldsher has the right, with the nominal permission of the provincial or regional health division or of the Ministry of Health of the autonomous republics, to issue sickness certificates.

XII. The feldsher in charge of an ambulatory clinic or health station will issue on demand of an institution or an organization certificates of condition of health; he will give special information in case of appearance of contagious patients; he will take stock of morbidity, mortality, and birthrate; he will carry out the medical statistics of his district.

XIII. Feldshers who have completed middle medical education and who have had not less than five years of practical experience may be permitted to assume the role of directors of practical training of students of the middle medical schools.

XIV. Feldshers after work in a specialty for five years, in accordance with the decision of the Council of Peoples' Commissars of the USSR of May 14, 1939, No. 671, have the right of two-month assignment to post-graduate courses on full pay from his work base.

XV. For incorrect treatment, negligence, and carelessness in fulfillment of his professional functions, as well as for failure to use the rights accorded him by IV of the present regulations in situations which threaten the life of the patient and also for appropriation of medical functions to himself to which he does not have the right, the feldsher will incur disciplinary, and in liable cases criminal responsibility in accordance with the articles of the criminal codes of the federated republics.

* * * * *

Given the above description of the duties and rights of the feldsher, one might then ask two questions: How is such a medical worker used in the Soviet Union, and who performs these tasks in the United States? From these questions the issue appears as to whether this type of Soviet health personnel is relevant to the American scene.

Concerning the first question, the top Soviet health care planning authorities and the directors of the feldsher educational system emphasize that the feldsher's functions are split into two roles. These might be described as "substitutional" and "complementary" roles. In the former the feldsher replaces the physician. As can be seen from the Zakonodatelstvo, this is permitted only under circumstances which are considered temporary —no matter how long the "temporary period" may be. On the other hand,

in the complementary role, the feldsher works with the physician—either directly, as in the ambulance system, or contrapuntally, as in the urban health-station system where he functions as a key figure in the forward care portion of the health system.

These two roles are determined to a great extent by geographic location—i.e., whether rural or urban.* This fact is considered in detail by Field and Sidel. Suffice it to emphasize here that the feldsher's *substitute* role is an historically diminishing one, and occurs now only in the great rural reaches of the Soviet Union. With improved communications and transport, coupled with increased numbers of physicians, the feldsher has become much less independent in judgment and action. His *complementary* or urban role is invariably subordinate to immediate physician supervision. While the feldsher is a valued assistant in his assigned duties, and the physicians of the ambulance system (the Skoraya pomoshch) greatly esteem them as their assistants, there is no question about their separate and subordinate responsibilities. Indeed the very word "feldsherism" has a pejorative significance and cannot be used to describe the feldsher system or its history. The word is used to describe a physician who does not keep up but "acts like a feldsher."

One most striking urban role for the feldsher is in the "Skoraya pomoshch" system. This is the deservedly famed emergency medical service system of the Russian cities, by which the health care establishment responds to calls of distress from its citizens.[16] Briefly, a citizen dials 03 on any phone, which connects him directly with the operators of a central dispatching office. A crew of switchboard operators handle the incoming calls, passing those calls requesting judgmental decision to the two physicians on duty. The physicians determine disposition of the problem, write the order, and the dispatching switchboard crew makes disposition—either by phone to its own ambulance station at the Center, or to one of 22 substations (in Moscow) or by radiophone to an ambulance already known to be in the area. Each of these ambulances is manned by a medical staff and *always* includes a doctor, a driver, and *at least one specially-trained feldsher*. Another striking feature of the ambulance is that they are specialized into coronary-care units, shock units, stroke units, and children's care ambulances. They are equipped and staffed accordingly. For example, a coronary-care ambulance has a physician and two feldshers, and is equipped for EKG diagnosis, cardiopulmonary resuscitation, and for direct-current defibrillation of the heart. The stroke ambulance physician is a neurologist, and again he has two assistants.

* Any study of the feldsher system for its own merits in its own national setting would be greatly lacking if the work of the feldsher "in the country" (v derevne) were not considered in detail. The present work, however, is concerned only with the urban utilization of feldshers since the author's principal concern is with development of complementary medical care resources in our own large central urban communities.

Interestingly, while over 90% of all feldshers in the country are women, only 60% of the Skoraya feldshers are, because of the arduous nature of the work. "It is difficult for women to handle the traumatized, the unconscious, and the inebriated." Work on the Skoraya appears to be a prized position. There is a great preponderance of young physicians and feldshers, with an unmistakable esprit-de-corps concerning their work.

The feldshers also man health stations (zdravpunkty) in critical areas where people accumulate, such as worksites, subway stations, or along any route of transportation. These stations are something more than first-aid stations, and the feldsher has two basic functions: to render appropriate "dovrachebnaya" care,* and to activate the medical care system when indicated. There are a great number of such health stations throughout the city, forming connecting links between the public and the health care system.

The health station at the Komsomol'skaya Subway Station is typical of 80 such stations in the Moscow Metro system. It operates 24 hours a day, seven days a week, and is staffed by five feldshers. It consists of ample, clean quarters, with bed space for one patient, and assorted first-aid equipment and drugs. About 500 patients per month come into this station. Such visits may be for something as simple as aspirin for a headache, for removal of a foreign body from the eye, for medicine for relieving an attack of bronchospasm in a known asthmatic, or because of onset of serious illness. The policeman who patrols the station works closely with the feldsher and will direct problems or bring them to the station. For those patients who have symptoms suggestive of more serious illness, the feldsher dials 03 to establish direct connection with the emergency medical care system which will bring medical help if needed or simply send transportation if so ordered by the feldsher.

A third complementary function of the feldsher is his "forward" role within the "closed" system of medical care—i.e., within a segment of the health care system organized to serve an identified segment of the population, in this case the large Likhachev Automotive Plant in Moscow. There are 60,000 employees of this plant, of whom 40% are female. A large polyclinic-hospital complex serves them, the physical facilities of which are located in two separate buildings just outside the plant itself. This clinic is staffed on a full-time basis to provide every kind of general and specialized medical, surgical, and obstetrical service. The plant has its own hospital facility, and its own tuberculosis hospital. The daily operation of the polyclinic involves 2,500 visits.

The point which is critical to this discussion, however, is that feldshers do *not* work at the polyclinic or at the hospital. Only doctors and nurses work

* "Dovrachebnaya" refers to the kind of care, often complex, which is rendered while waiting for the physician to arrive.

in these facilities. But, the feldshers *do* work at the 22 "shop health-stations" located throughout the plant. In this position a feldsher has a number of functions, which include: 1) being able to render independently emergency care in case of various types of injuries or the onset of catastrophic illness; 2) being able to get the patient quickly and safely into the system of medical care, and to know, for example, what the requirements of emergency medical transportation are; 3) observing the industrial health program of the shop and noticing conditions that exist adverse to health, and seeing to it that workers take care of what *they* may consider trivial lacerations, injuries, or illnesses; and 4) administering injections and other treatments which the patient is supposed to receive on a recurrent basis, or supervising some other form of medical management or constraint.

In performing these duties, the feldshers of a given shop are directly responsible to a single physician back at the polyclinic who is medically responsible for that particular shop. It is this physician who programs and supervises the health care of this particular group of employees, and for whom the feldshers represent the forward active medical personnel and physician assistants. But these feldshers do *not* make a diagnosis even of common cold followed by prescribing treatment. A patient with complaints of illness is sent into the polyclinic to the doctor where a medical decision is made.

In other words, the feldsher does *not* act like a substitute doctor in an environment where doctors are available. He does *not* come into the polyclinic environment where medical service is rendered by physicians and nurses. The locus of activity is forward, and it is this aspect of service which represents an overall essential characteristic of the feldsher's role, whether in the city or in the country.*

That the feldshers do not work in the polyclinics, which are the source of general medical care for the population, or in the general or specialized hospitals, is a critical point in terms of the reason for our interest in the feldsher system. As mentioned, the feldsher's function can be a substitutional one—i.e., one in which he replaces the doctor (e.g., the rural areas), or a complementary one—i.e., one in which he represents a direct extension of the doctor (e.g., on the Skoraya service).

If what we are seeking is an example of the complementary role applied to everyday health care (comprehensive family-based care as we know it), which has been developed to a professional and institutional level at which it might be studied and adapted to our own use, then we cannot find it in the case of the feldsher. For then the feldsher would have to work in the everyday system of health care—i.e., at the polyclinic

* But it must be noted, by way of exception, that this is *not* true of the other group of middle medical workers, the akusherkas (midwives). Their base *is* in the polyclinic working with the pregnant employee.

or the hospital. And, the feldsher does not do this except in geographic areas where he plays his substitutional role.

The feldsher, therefore, is a limited model for the role of "physician assistant" working on the health care team as a provider of specific physician-type services.

THE FELDSHER—EDUCATION

An important aspect of Soviet medical education in general which must be emphasized here is that it is highly differentiated and goal-oriented from the very start. This is true in the education of physicians at their medical institutions, and it is true for the feldsher as well. It is even true, to a lesser extent, of the earlier schools of "general" education. Such differentiation is related to another characteristic of the Soviet educational system—i.e., its utilitarianism. The USSR has needed qualified workers in great numbers and it has needed them quickly. It has produced them and continues to produce them. This utilitarianism has an added effect. It deemphasizes the consideration of medicine as a learned profession marked by the acquisition of baccalaureate and doctoral degrees. It emphasizes, rather, acquisition of the knowledge and skills necessary to function in a highly organized and supervised system of care. Only out of the mass of basic medical workers so produced grow those physicians and surgeons who subsequently earn their academic degrees and their places of prestige and honor in medical circles.

Because this process of differentiation exists *from the start,* it will be well to emphasize it since it gets obscured by such facts as that different categories of middle medical workers may be trained in the same school, different schools train different groupings of these medical workers, and there are two separate levels of general education which must be considered by all middle schools in placement of the students within their institutions (i.e., the 10-year and the 8-year general schools).

Middle medical personnel are educated in medical schools or technicums, as distinguished from the medical institutes in which the physicians are educated. The following is the list of middle medical professions:[17]

Specialty No. 1901—Feldsher—2 years 6 months duration.

Specialty No. 1902—Midwife—2 years 6 months duration.

Specialty No. 1903—Feldsher-laborant—1 year 10 months duration.

Specialty No. 1904—Sanitarian-feldsher—2 years 6 months duration.

Specialty No. 1905—Dental doctor—2 years 10 months duration.

Specialty No. 1906—Pharmacist—1 year 10 months duration.

Specialty No. 1909—Dental technician—1 year 10 months duration.

Specialty No. 1911—Nurse—1 year 10 months duration.

For the courses with the above-listed durations, a 10-year general education background is required. But all except one (S.N. No. 1905) will accept an 8-year primary school background by extending the medical school course one year, a year which is devoted to general subjects. In fact, the curriculum is somewhat different for the 8-year graduates

No. & Name of Subject	Total Hrs.	In Class	Lab & Practical
I *GENERAL EDUCATIONAL CYCLE*			
1. History	170	170	
2. Social Studies	68	68	
3. Principles of Scientific Atheism	16	16	
4. Literature	188	188	
5. Mathematics	300	300	
6. Physics	194	166	28
7. Chemistry	156	110	46
8. Foreign Language	170	170	
II *GENERAL MEDICAL CYCLE*			
9. Latin	76	76	
10. Biology	78	60	18
11. Anatomy	154	112	42
12. Physiology	100	74	26
13. Microbiology	80	58	22
14. Path. Anatomy & Path. Phys.	95	70	25
15. Pharm. & Prescription Writing	163	121	42
16. Hygiene	68	50	18
17. Health Care Org.	36	20	16
III *SPECIAL CYCLE*			
18. Int. Med. & Patient Care	390	170	220
19. Surgery	247	147	100
20. Ob-Gyn	290	120	170
21. Pediatrics	218	106	112
22. Epidemiology	90	40	50
23. Infectious Diseases	154	84	70
24. Skin & Venereal Diseases	72	32	40
25. Nervous & Emotional Dis.	72	32	40
26. Eye Diseases	64	26	38
27. Dis. of Teeth & Oral Cavity	48	24	24
28. Dis. of Ears, Nose, Throat	64	26	38
29. Physiothera., Massage, Thera. Physcultura	96	36	60
30. Path., Clin. Manif., Ther. of RV & OV	48	28	20
31. Study of Add. Teaching Mat.	55	55	
IV *PHYSICAL EDUCATION*		202	
V *CIVIL DEFENSE*		34	
VI *OPTIONAL SUBJECTS*			
Russian or Native Language		116	
Physical Education		137	
Consult. on Special Subjects		60	

Table 1. Curriculum for the General Feldsher: Spec. No. 1901

(15 years old), but the major difference is in the first course—which is the "general educational cycle." This Cycle No. 1 is not taken by the 10-year graduates except for the subjects, philosophy and scientific atheism.

Course Outlines and Contents

The subject outline and hours for Specialty No. 1901, the "general feldsher," are shown in Table 1. There are several features which should be pointed out about this. It is divided into three broad categories or "cycles;" the *general educational,* the *general medical,* and the *specialty* cycles. This is what permits flexibility to the program for the different requirements of different categories of students. The first year (cycle) is only for the 8-year graduates. Subjects of the general feldsher's "special" cycle become "general" subjects for the more specialized feldsher, such as the akusherka who works only as the obstetrician's assistant or in rural areas as his representative.*

The akusherka's educational program has 200 hours more of obstetrics and gynecology for a total of 492 hours, with 224 hours of classroom, and 268 hours of lab or practical work. Similarly the sanitarian has a greatly increased number of hours in epidemiology, infectious and parasitic diseases, plus the hygiene of food service and community living.

In fact, for the feldsher-sanitarian it may be well to look at his program in more detail. There are four cycles in it instead of three. The "special" cycle of the "general" feldsher becomes the "clinical" cycle of the feldsher-sanitarian with about one-third the number of hours for Internal Medicine, Surgery, etc. However, a fourth cycle is added, called the "specialty" cycle for this group, which contains 1201 hours, as shown in Table 2.

	Total	Class	Practical
20. Epidemiology	286	126	160
21. Disinfection	188	74	114
22. Hygiene of Food Service	137	53	84
23. Community Hygiene	150	60	90
24. Work Hygiene and Industrial Sanitation	150	66	84
25. School Hygiene	150	63	87
26. Health Care Org. & Org. of Contra-epidemic Activity & Health Stat.	65	25	40
27. Health Education	39	20	19
28. Additional Teaching Material	36	36	—

Table 2. "Specialty" Cycle for the Feldsher-Sanitarian: Specialty No. 1904.

* Somehow, a translation of this term into "midwife" does not seem quite appropriate. The akusherka in the urban environment plays a much more complementary role than a substitutional one. In Russian, the obstetrician is called the akusher (French—accoucheur) and the use of the Russian diminutive "—ka" produces akusherka, indicating a relationship not implied by the English word.

A second note to be made about the general curriculum is that the hours listed as practical or lab hours are an intrinsic part of the teaching schedule as shown. They do not represent the "practical" experience obtained by the feldsher student. This is obtained through an additional 820 hours of activity, grouped into 20 weeks, as shown in Table 3.

The "school exercises" are scheduled into the academic course, the "productive practice" occurring near completion of the training period. During these practical exercises a minutely detailed record is kept of the

FORMS OF IT	Total Time Hrs.	Wks.
1. School exercises:		
a) In hospitals, as a sanitarian	41	1
b) In hospitals, in patient care and medical technology	164	4
c) In hospitals and polyclinics functioning as a nurse	205	5
2. Productive practice according to specialty (after school) in regional and district hospitals	410	10
	820	20

Table 3. Practical Training and Perfection of Professional Skills.

duties accomplished, procedures learned, and quality of work performed, so that the supervising faculty of the school is aware of the performance of every student.

Syllabi

"Programs" are used for every subject through all feldsher schools to standardize the curriculum and universally attain educational goals. These are not texts or written-out lectures, but a detailed outline for the teacher of the material to be covered, the specific objectives to be sought, and some ways of checking on whether those objectives are attained. These Programs are prepared by the Ministry of Health of the USSR through its Central Methodological Office for Middle Medical Education. An illustrative listing of some of these Programs is shown in Table 4.

Observation by the writer of two lectures by a long-time (22 years) teacher of pediatrics indicated that the "Program" was very closely followed. She knew exactly what information she wanted to get across to the students, timed her demonstrations exactly (e.g., clamping and cutting the umbilical cord, insertion of silver nitrate drops in the eyes of the newborn, etc.) and constantly sought feedback from the students on whether or not they were getting her points. She began the lessons with a check on what had been learned from the previous lessons, and checked throughout the lessons on what was being learned. All prescriptions had to be written on the blackboard by the students.

Course Name	Date Published	Pages
1. Gynecology	1967	
2. Infectious Diseases	1967	
3. Surgical Diseases	1966	
4. Epidemiology	1967	19
5. Children's Diseases	1966	45
6. Organization of Health Care System	1966	17
7. Neurologic and Psychiatric Diseases	1966	20
8. Eye Diseases	1965	14
9. Diseases of Ear, Nose and Throat	1966	13
10. Biology	1965	
11. Pharmacology and Prescription Writing	1967	
12. Latin	1968	

Table 4. Programs or Syllabi Used in Feldsher Educational Courses.

Examinations

All graduates must take the State examinations. Just as our National Board of Medical Examiners places constraints on the curricular content of medical schools, so does this system effect one more form of standardization of the educational program and the educational product.

All examinations are oral except for those in Literature taken during the first course by the 8-year students. The questions, however, are standardized and are published in booklet form by the Central Methodological Office of the Ministry of Health. Each subject has its own booklet, which contains a series of "tickets" (bilety). When the student takes the examination he is given one of these "tickets" and allowed to sit and think about the questions on it before being interviewed by the examiners.

Three of the tickets, picked at random from the 1968 examination booklets, are as follows:

A. *Tickets for the course "Internal Diseases of Patient Care" for the State Examination for Feldsher and Akusherka Division of Medical Schools.*

TICKET #30

1. The history and its significance in establishment of the diagnosis of various diseases.
2. Cancer of the esophagus, complaints, clinical findings, course. Significance of early diagnosis, treatment.
3. The course and outcome of hypertensive cardiovascular disease. Its treatment and preventive management.
4. Use of head supports, bedpans, and urinals.

TICKET #8

1. The role of middle medical personnel in the organization and carrying out of patient care.

2. Lesions of the heart, etiology, pathogenesis, the clinical manisfestations of decompensated lesions of the heart. Prevention of lesions of the heart.
3. Focal pneumonia: etiology, clinical picture, and treatment. Complications and their prevention.
4. The technique of application of hot compresses.

B. *Ticket for the course "Surgical Diseases," etc.*

TICKET #1

1. Plaster, its properties, method for testing its quality, maintenance of plaster.
2. Burns, their appearances, first aid, burn disease, treatment, and patient care.
3. Closed injuries of the skull, contusions, concussions, signs, first aid, treatment, patient care.
4. Preparation of the hands of medical personnel for operation. Basic principles of disinfection of the hands.

Textbooks

Textbooks are prepared specially for use in the middle medical worker schools. The textbook on Internal Diseases by A. G. Gukasyan, in its fifth edition, was published by the Central Medical Publishing House in Moscow in 1965 under the direction of the Division of Medical Teaching Institutions and Cadres of the Ministry of Health of the USSR as a textbook for students in the middle medical schools. It consists of 524 pages.

A list of some of the books used is shown in Table 5.

A check of the title page does not provide information on the rank and location of the authors of the textbooks. However, brief perusal indicates that they are fundamental in their approach, strongly emphasize knowledge and use of basic principles, and are quite broad in their scope. The books appear to be excellent texts for their purpose.

One further point should be made about the feldsher schools. The administration and the faculty are not made up of older and experienced feldshers. They consist of *physicians* who consider it their responsibility to know what should be taught, and how. There is no suggestion at any time, therefore, that either the feldshers or the nurses are an independent health care profession. Rather, the concept is advanced that all health care workers share a common responsibility to society and there are levels and categories of performance at which different people work. The profession is medicine —and all teaching, health care, and administrative components of the system are run directly by the doctors.

Author	Title	Edition	Yr.	Pp.	Copies	Cost
Gukasyan, A. G.	Internal Diseases	5th	'65	524	180,000	1.00 rubles
Bezdenezhnykh, I. S.	Epidemiology	1st	'68	334	100,000	.54 rubles
Golosov, A. B.	Latin	1st	'67	248	100,000	.43 rubles
Kitaigorodskaya, O. D.	Childrens' Diseases		'63	431		
Gusev & Sergeev	Anatomy		'63	311		
Vinogradov	Pharm. & Prescription Writing		'66	347		
Gaboviya, R. D.	Hygiene		'65	320		
Serebrov, A. I.	Gynecology		'65	311	100,000	.54 rubles
Einhorn, A. F.	Path., Phys., & Path. Anatomy		'66	448		
Sutin	Microbiology	5th	'66	360	125,000	.60 rubles
Karuzina	Biology	2d	'67	336	60,000	.56 rubles
Pasynkov	Physical Therapy		'66			
Morozov & Romasenko	Neuropath. & Psychiatry		'62			

Table 5. A List of Textbooks Used for the Education of Feldshers

DISCUSSION

There are two strong determinants concerning the feldshers which are operative in the USSR: an historical one, and a geographic one.

The feldshers have been established in Russia for over 250 years, since the time of Peter the Great, 70 years before the establishment of the United States as a republic. They played a critical role in the health care of the Russian people, and that role did not become any less critical at the time of the 1917 Revolution. Thus, they already existed and by the very fact of existence have played and continue to play a substantial role in Soviet health care.

That there is ambivalence about this role is quite clear. Historically, they represent a second-class grade of medical care—good for the peasants but not for the moneyed people. This was a substitute role and continues to be looked at as a substitute role—to be used where doctors are in short supply, but not where doctors can be gotten to serve. Thus, the geographic factor becomes important. Feldshers do not work in Moscow polyclinics or hospitals where physicians are available, but do work in the Cherkassky and Kalininsky provinces of the Ukraine as surrogate physicians. However, as the medical institutes produce an increased number of doctors, "feldsher stations" of the rural areas are being converted to "physician stations."

It may well be that, except for the akusherkas, the sanitary feldshers, and the dental feldshers, the concept of the general feldsher *as a physician's or surgeon's assistant* does not in fact presently exist except as they serve on the skoraya pomoshch and at one or two other peripheral stations, such as transport health stations or industrial complex health stations. The Skoraya in Moscow does have 1,500 feldshers on its work force as assistants to the 300 physicians. This is a clear role for them, and 40% of this feldsher staff are men.

But aside from this it would appear that the Soviet health care system does not use general feldshers as part of the hospital or polyclinic health care team, and further, that, except for obstetrics-gynecology and dentistry, feldshers are not specialized into medical and surgical categories as physician assistants or associates, or as pediatric associates.

Therefore, the concept of physician associates as we are presently developing the idea in the United States does not have a direct precedent in the Soviet Union. The resemblance is more remote.

Perhaps one might look at this matter from the point of view of developing countries. Spencer and Rosinski have published an interesting monograph on this subject which delineates the highly important role such personnel can play in the health care of communities for whom there is no conventional medical care.[17] This represents again the "substitutional" role of the feldsher. The Russian experience is, of course, quite relevant to this situation, and perhaps the USSR itself, as a new

form of society devastated early in its development by two destructive wars, has had to consider itself very much a "developing country" with enormous logistical problems in medical care. The "developing country" is probably the appropriate perspective from which to view the feldsher as an historical and organizational entity; and from which to view his educational and medical care role. But this system in the USSR, even as it presently exists, can really serve as a model only for developing countries. This role has not yet been developed by the Soviet health organization into that of a "physician assistant" who might spare the Soviet doctor many of the onerous tasks which consume time, but which do not require the immediate availability of medical judgment.

The American requirement for such physician assistants seems to be different and, as invariably happens in our country, the development of concepts and their practical implementation will go on in many different centers, each pursuing its own lines to a certain point of development and then sharing information. This informational exchange process will itself introduce changes and thus gradually render the concepts similar as expressed in their outcomes. Presently the concept of physician assistants or physician associates is very early in development, and one cannot generalize yet in terms of the product and his function. But it does seem clear that the purpose of these programs is not to produce a medium grade doctor-substitute so much as to produce a specialized assistant to the doctor so that medical care services are available on a broader and more efficient basis to the general population.

Furthermore, this professional person will be educated beyond the baccalaureate level to attain the point of beginning his productive work. He will not replace the doctor, but will become part of the health care team on which he works with the doctor. His will not be a substitutional role, but a complementary one. He will undoubtedly be specialized in his skills depending on whether he is on an adult medical care team, a surgical team, a pediatric team—or whether he works in an office, a clinic, or a hospital.

There appears to be no precedent for this kind of professional in the Soviet health care system.*

The relevance, therefore, of the feldsher to health care in the United States would appear to be limited. The critical lack in the Soviet experience from our point of view is the absence of the feldsher from the urban polyclinic and the urban hospital. If the feldsher had been developed into a medical assistant whose role in the polyclinic and hospital had been established through experience, this might have served as a model to

* The single exception to this statement might rest in the organizational structure of Soviet doctors themselves, where a wide qualitative spread exists between the first contact therapist (general adult-care physician) and the hospital-based internist or surgeon.

which we could refer as we develop such professional personnel in the United States. Since this is not so, the feldsher experience is of limited value to us.

That they perform well on the skoraya pomoshch system is interesting, but this is principally because of the skoraya pomoshch concept itself, not because of the feldsher. An American ambulance staffed with a physician and a medical corpsman-type assistant operating as part of a "forward health care" system would be as far as we need to go in exploring that parallel.

That they staff "feldsher stations" in outlying regions of the USSR may have limited relevance, and for a limited period. It is difficult to think of geographic locations in the United States where appropriate conditions might prevail for establishment of such organizational units staffed by such personnel operating relatively independently. Our own public health nursing program seems to be a much better approach, supplemented by the limited mid-wife programs which we now have.*

What lessons then are left to be drawn from the Russian feldsher experience?

The very first lesson might be one of those negative lessons which are not obvious because they are not positive—i.e., the very fact that the Russian system does *not* use feldshers in the polyclinics and hospitals may indicate something very important, coming from a country where more than 500,000 such specially educated personnel are in existence. But it is difficult to evaluate this point and one can probably go no further than Sidel did in trying to guess at the "motivation" for use of or failure to use feldshers by the Soviet health care establishment. However, the fact remains that what the Soviet health establishment *says* and *does* is—*to use only physicians and nurses in the polyclinics and hospitals which serve urban populations.*

There are two potential implications of this fact: 1) that the use of "middle" personnel in such urban situations of health care is either not necessary or not advisable; and 2) that we cannot look to the Soviet experience if we should decide to develop our own kind of "middle medical worker" or "medical associate." The first implication suggests that if we need physicians, we should produce physicians and not feldshers. The second point is more straightforward and has been discussed above.

It would appear that the principal lesson to be learned does not have very much to do with the Soviet system at all but comes out of very basic educational and organizational methodology as it is illustrated in the feldsher system: i.e., that if we are to develop such associate medical personnel we should spell out very carefully: 1) their duties and privileges; 2) their organizational role; and 3) the educational program needed to

* A more detailed treatment of the akusherka is not appropriate to the present discussion, but might merit being explored further by American physicians aware of the obstetrical needs of our country.

permit them to function under the conditions of #1 and #2. Thus, the fact that such a description of the feldsher's duties and prerequisites exists in Soviet health law, and that their educational program is tightly geared towards producing personnel who can carry out those functions is relevant for us.

It would be a moot point as to whether or not we can be assisted directly by the feldsher educational system. Educational systems are strongly characterized by the needs of the society in which they exist. The feldsher schools take the equivalent of American 10th graders and 12th graders and, in three and one-half years in the first case and two and one-half in the second case, try to produce a 19-year old who can function in a tightly woven health service system. It is unlikely that any of our programs for associate medical personnel have this educational structure in mind. Probably the *minimal* starting level would be the Junior College certificate holder who would advance into a medically oriented baccalaureate program.

The textbooks written for the feldshers are of interest, probably comparable to our own books for nursing education and especially those oriented to the thinking and work of our public health nurses. The "Programs," which guide the teachers and the "Bilety" used in the student evaluation system are interesting examples of educational methodology.

In a sense, then, from the point of view of the American health care milieu, a study of the feldshers could be considered a "negative result" study. One might have expected on the basis of reading and conjecture, to find a highly developed *middle* medical care system which might be relevant to our own requirements and whose organizational and educational pattern might serve as a pattern for us. This does not prove to be the case. Middle medical care personnel are not used in the heart of the Soviet medical care system, but only in its periphery or in very special roles. The system is an historical and cultural legacy which is still useful in the USSR as that nation continues to develop its health care resources—but in the words of the director of one of the principal training schools for such personnel—"Feldsherism is dying, and deserves to die."

This is not to say that the idea of a "physician's assistant" is also dying. In fact, the increased availability of more highly trained physicians, coupled with the advancing technology of medicine and improved transportation and communications systems, has a paradoxical effect on the feldshers in that their activity may be increased rather than diminished.[18] There is a new look being taken at his function and at his potential. While his substitutive role may continue to diminish, his complementary role may be enhanced. Further specialization of his activity seems likely, and there is consideration of eliminating the word "feldsher," to be replaced perhaps by "lekpomo,"* or simply "physician's assistant."

* Acronym from the Russian words "lekarskii pomoshchnik," meaning "medical assistant."

Such considerations notwithstanding, as the Soviet medical care system continues to develop it will produce greater numbers of physicians to serve the population, a fact which in itself will eventually eliminate the substitutional role of the feldsher. The complementary role of the feldsher in the Soviet Union and that of the medical associate in the United States remains to be developed. Because of their high annual output of physicians (29,000), this may not be so necessary in the USSR, but because of our low annual output of physicians (9,000), it will become more and more critical in the United States.

It is precisely at this point that we must pause as we seek to see how the feldshers are relevant to the American health care problem. *The Soviet experience says that if a society needs doctors it should produce doctors.* That experience is tangentially transferable to the American scene. But the American doctor presently is a different educational product than is the Soviet doctor—and the kind of professional we may be talking about when we talk about "medical assistants" may be more the equivalent of the rank and file of Soviet doctors rather than the Soviet feldshers.

There are a number of points to consider in this area. Firstly, it is possible to be too comfortable with the semantics involved. To the Soviets, "doctor" is one level of performing physician, and "professor" or "dotsent" is another. The difference is enormous. One group is mostly women, who work a 40-hour week in very specific jobs, yet still handle the difficult tasks of mother and wife on arrival home. They do not have the educational equivalent of an M.D., but a diploma. The other group is predominantly men, whose "off-duty" interests parallel their vocational interests, and who more resemble their American counterparts.

Secondly, the medical educational investment is different. After the equivalence of a high school education, which is probably no better or worse than ours, the Soviet student then invests seven years before going out into the world as a general physician caring for adults, as a pediatrician, or as an obstetrician. The American physician now invests 12 years in his educational program beyond high school. This may seem like a startling overstatement, but the plain facts are that the average period of training for the American doctor beyond internship is three years. Such is the force of specialization which has caused us to re-examine our health care system and its educational components. Furthermore, the Millis Commission on Graduate Medical Education has recommended a three-year period of education for the "general" or "family" physician beyond his graduation from medical school,[3] so that the anticipated investment of educational time even for the "generalist" is still four years longer than that invested by the Soviet doctor.

A third consideration rests in a general attitude towards the profession and its status. A revolution in the American medical educational system took place with the publication of the Flexner Report in 1910 whose continued consequences we tend to overlook. Flexner in his recommendations,

and the American medical establishment in its implementation of those recommendations, effectively converted medicine into a learned profession in our country, with a quality control system built into it through its various specialty boards and agency councils which has forced the American doctor to work exceedingly hard and long if he is to attain recognition as a specialist among a great number of peers. Thus, when we refer to an "internist" we are not saying the same thing as the Soviet system says when it uses the word "terapevt." And when we say specialization we mean specialization by recognized individual accomplishment and not so much by organizational designation. The Soviet "specialty year" after graduation from the Medical Institute is probably the equivalent of our straight internship—but an American doctor would not call himself an internist after only that much training. The Soviet "terapevt" graduates as such from the medical school—he is the general adult physician—the pediatrician having graduated from a different faculty altogether.

As a fourth consideration, we have to talk about the general standard of living and the level of general education in our country. Our present concern with some of our unsolved special problems makes us forget the unbelievably wealthy circumstances in which so many of our people live. Most people in our country who are talking about developing medical associates are talking about doing it at the baccalaureate level, not at the high school level. The present author envisions utilization of the combined resources of our community colleges at the certificate level with their graduates going on to a bachelors degree in medicine, which with subsequent hospital and clinical training will allow the incumbent to become a licensed practicing "medical associate." In terms of relative educational levels this is not the equivalent of the Soviet feldsher, but perhaps somewhere between feldsher and doctor, probably closer to the latter.

Herein may lie resolution of what appears to be a paradox. One must really ask why it is that the American medical establishment is thinking in terms of producing "medical associates" to spare or complement the physician. What is the performance base by which educational standards for the American physician are set? How do these standards relate to the health care needs of the American public? Do we in fact need more "M.D.'s" as produced presently, or do we need to redefine what we mean in terms of actual service when we address a professional as "Doctor?" What, after all, will we actually call this medical associate when we have him, if not "Doctor?"

Perhaps the real lesson to be derived from observing the Soviet feldsher system is that we may need to produce 29,000 doctors per year to meet the needs of the American people, of whom 9,000 will require the level of education now required to become a practicing M.D. But what should the educational requirements be for the other 20,000 "doctors"? Therein may lie the answer to the health manpower problem in our country.

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