How to Heal

The Evolution of Mid-Late Soviet and Russian Medical Education Policy

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Abstract

This study seeks to answer the following questions: how did Soviet medical education policy influence later Russian medical education policy, what was the extent of the influence, and how were the policies implemented.To do so, the study strives to create a single point of contact, an overview of Soviet and Russian medical education policy, with an eye for future policy reforms that would be particularly important to other post-Soviet nations continuing to improve their medical systems.

Through document analysis and primary interviews, this study identifies three periods of education policy: the mid-late Soviet period (1960s-1991), early-post Soviet period (1992-2010s), and recent period (2010s). Soviet policies were stable and set the baseline for strategies to come. Despite heavy Soviet influence, early post-Soviet times introduced free market ideas, such as paid tuition, and heralded movement away from the Soviet system. Elements pertaining to central planning and communism disappeared. The 2010s moved policies further from the Soviet model with sweeping actions such as the abolition of traditional internships and the creation of a new accreditation system, though implementation has been only partially successful. Some Soviet elements remain, including the absence of elective courses and the model of practical work, but the Soviet policy influence is dwindling.

This study concludes that there is room to augment ongoing policy to further improve the Russian medical education system without drastic overhaul. Government re-establishment of certain Soviet-style policies,expansion of post-graduate education*,* and final implementation of newly-introduced initiatives would help improve the quality of education received by young medical professionals.

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Introduction

The medical systems of the Union of Soviet Socialist Republics (the USSR or Soviet Union) and the Russian Federation (Russia) have long fascinated researchers, both in the East and West, across the National Institute of Health (NIH), the Organization for Economic Co-operation and Development (OECD), and other research institutions.[[1]](#footnote-1) Medical doctors are key actors in medical systems and they need to be properly educated to practice effectively and competently. Medical education policy is therefore an important component of overall health and medical policy. While there are many possible reasons for Soviet and Russian healthcare being oft-discussed topics in academic books and journals, there appear to be two primary explanations for this interest — the uniqueness of being a healthcare model for stable socialism and the health effects of the USSR’s dramatic fall (and related consequences and attempted recovery).[[2]](#footnote-2) Soviet health policy is also the convergence of several of the researcher’s interests. This paper attempts to address the evolution of medical education across the mid-late Soviet period, early post-Soviet period, and the 2010s onwards in Russia.

One explanation for researchers’ interest is that the Soviet Union was not only one of the few stable communist-socialist countries that persisted for an extended period of time, but it set the model for all following communist health systems. It was the primogenitor necessary to understand before examining spin-off systems such as China’s barefoot doctors.[[3]](#footnote-3) The USSR created a unique template for medical education.

The other main explanation for researchers’ interest is the dramatic social, political, cultural, and economic shift that occurred with the fall of the Soviet Union on December 26, 1991. Nations ebb and flow over time yet rarely implode as suddenly the Soviet Union did. As a result of this near-unprecedented event, researchers were afforded a unique experimental window in which they could analyze the rapid transformations of entire nations. The disruption of medical systems and healthcare is one such transformational window that received special attention, largely due to the increase in adverse health outcomes (shown in life expectancy, morbidity, mortality, and death rates) shortly after the dissolution of the Soviet Union.[[4]](#footnote-4) Health and healthcare are usually stable in developed nations, so the rapid changes as the nation adjusted after communism also contribute to researchers’ interest.

This study seeks to answer the following questions: how did Soviet medical education policy influence later Russian medical education policy, what was the extent of the influence, and how were the policies implemented. A corollary query is briefly judging whether there were problems with Soviet medical education in the first place. This study provides an analysis of changes in medical education policy through Soviet and Russian administrations. Present policy is influenced by past policy; post-Soviet policies must be taken in context with their predecessors. *De jure* and *de facto* policy sometimes differ, so in addition to helping fill a gap in the current literature, the project attempts to examine how medical education policy was implemented in practice versus in theory. To answer those research questions, the analysis also presents a compilation of opinions, sources, and information on medical education policy. Part of this process was translating and mapping Russian sources into an English-language and American academic environment.

This project seeks to address a gap within currently accessible research: even though there has been considerable academic discussion in the general topic of Soviet and Russian medicine, there is little literature that specifically examines Soviet and Russian medical education, let alone over time. The bulk of previous works focus on the health impacts and effects of the fall of the USSR or healthcare as a whole, some look at the associated policies broadly, and fewer still consider the educational systems underpinning the rest of medicine. Education of Soviet and Russian practitioners is less researched. This is especially true in American and English-language sources; there just are not many articles on the topic. The extent of existing literature and academic discussion on the subject will be addressed in the Literature Review.

Such a project is important primarily for continued Russian medical education policy, but also for any state or regulatory body examining the development of medical education. For example, medical school experts and administrators in the United States find themselves asking new questions about how to operate optimally.[[5]](#footnote-5) This study is also important because it brings certain information that was previously only available in Russian into English, and attempts to answer a number of related guiding research questions.

Another reason that this topic is relevant is its applicability to other countries. Healthcare systems of former Warsaw Pact satellite states and former Soviet republics tend to follow similar principles to those of the USSR. Medical education policy is no exception. As Russia continues to grapple with the socioeconomic legacies of socialism up through the present day, so will its neighbors. Whatever is gleaned in this Soviet and Russian-focused study likely will be applicable elsewhere.

The analysis reveals that Russian medical education policy generally followed Soviet medical education policy in spirit if not necessarily to the letter. The anarchic post-Soviet times (1992-2010s) led former Soviet policymakers to cleave to elements of the old ways with some changes based on new and Western ideas. Recent years (2010s-present) ushered in major reforms departing from the Soviet model. Reformers had admirable intentions, but mixed execution hamstrung reform efforts from reaching their full potential.

This study first provides background information and reviews previous research on the topic. The study then describes the associated methodology, including the data collection process. After presenting the results of the research, it makes policy recommendations. Identifying the strengths and weaknesses of previous Soviet and Russian medical education policy can help policymakers create more effective policy in the future.

# Background Information

### Soviet Healthcare

To understand Soviet medical educational policy, it is helpful to understand Soviet healthcare as a whole, as well as consider medical education and healthcare in their larger political contexts. The USSR was composed of fifteen Socialist Republics and characterized by its socialist philosophy, command economy (literally “planned” *planovaya ekonomika)*, and autocratic central government. The official ideology was [Marxism–Leninism](https://en.wikipedia.org/wiki/Marxism%E2%80%93Leninism), or a [vanguar](https://en.wikipedia.org/wiki/Vanguardism)d (revolution-leading) [one-party state](https://en.wikipedia.org/wiki/One-party_state) attempting [dictatorship of the proletariat](https://en.wikipedia.org/wiki/Dictatorship_of_the_proletariat) (rule by the working class). Socialism and centralized management were therefore reflected in the USSR’s healthcare system. The following overview of healthcare and medical education is intended to offer vital context for the coming analysis.

The father of health policy at the founding of the USSR was its Commissar of Public Health, Nikolai Semashko, and the healthcare model that followed carried his name. As a policymaker of a communist state, he demanded a model based on free, state-run, centralized healthcare for all.[[6]](#footnote-6) The USSR was born out of World War I and the Russian Civil War consecutively, so health and sanitation infrastructure was destroyed, epidemics and famine were rife, and there was a shortage of trained medical personnel. A good example of the situation comes from Vladimir Lenin’s pithy statement to the Seventh Congress of Soviets on the 1919 typhus epidemic: “Either the louse will triumph over socialism, or socialism will triumph over the louse!”[[7]](#footnote-7) The policies needed at the time were those that would most improve public health: creating new medical schools to train new doctors, allowing Tsarist doctors to practice, and prioritizing the elimination of communicable diseases over non-communicable ones because those were the greatest threat to national security; the Bolsheviks could not win the civil war and protect the USSR from anti-communist invaders if many people were sick.[[8]](#footnote-8) The Semashko model worked admirably. In 1938, the Soviet Union had one of the lowest life expectancies in Europe at 46.9 years. In 1958, it was 68.6.[[9]](#footnote-9) The improvement is largely attributable to the Semashko model’s central command structure, large number of tiered medical facilities, large number of new doctors, and minimal costs to patients that collectively made healthcare accessible to everyone. The system was the same Union-wide. The organizational structure was simple: district, *rayon* (region), municipal, *oblast* (state), and federal tiers of medical facilities.[[10]](#footnote-10) See Appendix I for details. Every member nation, *oblast,* and city was subject to the same regulation. In the forthcoming analysis, because the policies were universally applied, references to the Russian Socialist Republic apply to all Union Republics. The Semashko model was used with little modification until shortly before the USSR’s demise.

In addition to the Semashko model’s main points of central coordination, state operation, and universal free care, Soviet medicine had a number of characteristics that may not be known to a layperson unfamiliar with Soviet ideology. Doctors were considered nonproductive assets by the government.[[11]](#footnote-11) This designation meant that they were paid less than bus drivers and coal miners. Medicine was among the lowest income professions.[[12]](#footnote-12) One might wonder why anyone would go to medical school for six years if they could make more money doing something simpler; it seems like a bizarre incentive structure. Marx suggests in *The German Ideology* that once all needs are attended to by socialism, people would continue to enter difficult professions without the monetary pressures of capitalism because they were passionately interested in them.[[13]](#footnote-13) Soviet policy focused on industrial development and that required easily quantifiable metrics of productivity. A bus driver carries a certain number of people to and from work per day —- bringing people to work is necessary for staffing industry. A coal miner digs up a certain number of tons of coal per week — that fossil fuel is necessary for powering industry. Quantifying the productive value of proactively and reactively healing workers is less straightforward, so the simple solution was to make a low estimate of the doctor’s worth. The “nonproductive” low pay helped devalue the profession to a certain extent; doctors were still well-respected by Soviet citizens.

Another unique practice was forbidding doctors to convey certain information to patients. Even during the openness of *glasnost* (Premier Gorbachev’s movement for open government and information), doctors were forbidden from explaining the exact details of certain medical procedures, from telling workers about professional illnesses (workplace-related diseases, like poisoning from chronic exposure at a chemical plant), and from informing patients or families of negative results like terminal illnesses.[[14]](#footnote-14) This was because it was perceived that the damage to productivity and to society of such knowledge cost more than it was worth. Medical service was also divided between normal and *zakriti* (closed) clinics, which were solely available to the *nomenklatura,* the elite CommunistParty bureaucrats who made up at most 1.5 percent of the population.[[15]](#footnote-15) Some estimates put the proportion of Moscow doctors working in *zakriti*-type clinics at 50 percent.[[16]](#footnote-16) There was also no Hippocratic Oath because Soviet doctors swore the Oath of the Soviet Physician instead. The Soviet oath differed mainly in being more concise and in mentioning Communist morality.[[17]](#footnote-17) These practices are patently different from those commonplace in American medicine that might be familiar to the Western reader; that does not mean they were illogical or baseless. As shown by the nonproductive designation of doctors, information restrictions, and *zakriti* clinics, Soviet medical philosophies sometimes differed in what they valued compared to Western ones.

Soviet health systems were successful in a number of ways. In addition to massively increasing life expectancy and dealing with life-threatening diseases in the first half of the twentieth century, the USSR was among the first nations to attempt to offer universal health care. In fact, the Semashko model from 1920 was the first universal health care plan in the world that covered all types of medical services for all people regardless of employment; however, it took some time to become universal in practice by fully reaching all rural communities by 1969.[[18]](#footnote-18) In comparison, most Western European universal health systems were only launched after World War II, over twenty-five years after Semashko introduced his plan. The Soviet Union also recorded impressive health personnel statistics. In 1985, there were 1.17 million practicing doctors and 4.3 doctors per 1,000 people in the USSR (4.6 in Russia) compared to 437,000 physicians and 1.7 doctors per 1,000 people in the U.S.[[19]](#footnote-19) [[20]](#footnote-20) Even when the USSR was not prioritizing medical development from 1945 to 1955, the number of practicing physicians doubled*.*[[21]](#footnote-21)Such growth and scale were unprecedented in world medical history; China is the only competitor for physician growth because it came close to doubling the number of physicians during the 1950s and 2010s.[[22]](#footnote-22) [[23]](#footnote-23)

However, the Semashko model had shortcomings, especially later in its life. Soviet health funding received a decreasing proportion of the federal budget starting in the 1970s, falling from 6.5% in 1966 to 4.5% in 1985 to 3.4% in 1989.[[24]](#footnote-24) Unsurprisingly, healthcare quality decreased. Chronic underfunding meant that medicine and medical equipment were frequently in short supply, including staples such as basic antibiotics, hot water, and sterile needles.[[25]](#footnote-25) [[26]](#footnote-26) Problems dramatically worsened during the dissolution of the USSR.[[27]](#footnote-27) The Soviet Union emphasized quantity over quality in all things ranging from its military doctrine to its medicine; a State Planning Committee (*Gosplan*) economist reported that the “number of doctors . . . remains unmatched by the world,” but the high number was “meaningless” and had not improved healthcare.[[28]](#footnote-28) The medicine and equipment that was available was often of low quality. The lack of medical supplies hamstrung medical treatment. Even so, Soviet healthcare was not a debacle. Foreign observers marveled at the ingenuity that Soviet doctors displayed with their limited resources.[[29]](#footnote-29) For example, the journalist Eleanor Randolph was impressed that the Moscow Research Institute of Eye Microsurgery was “‘a medical factory for the production of people with good eyesight . . . a description that turned out to be true, not mere Soviet hyperbole.”[[30]](#footnote-30) Soviet doctors pioneered the first kidney transplant, first artificial heart, first heart-lung transplant, first lung transplant, and radial keratotomy (the predecessor to LASIK eye surgery).

### Post-Soviet Healthcare

The post-Soviet Russian healthcare system grew directly out of the previous Soviet system and maintains similarities to its predecessor, so this study will only remark on some major changes. The right to universal healthcare and the existence of state-run medical facilities were reaffirmed in Article 41 Section 1 of the Constitution of 1993.[[31]](#footnote-31) Early health insurance legislation in late 1991 gave way to the 1993 Law Number 4543-I that established the Federal Compulsory Medical Insurance Fund.[[32]](#footnote-32) “Free” public healthcare still existed, but everyone had to pay into an insurance money pot for it. This payment was later subsumed by a unified social tax in 2001. Full private insurance was legalized in 1992, though most Russians to this day cannot afford private insurance even after the teething troubles of introducing medical insurance subsided.[[33]](#footnote-33) The last years of the USSR introduced the first legal private medical practices. Private practice only really took off after the nationwide stabilization at the turn of the millennium — Russia now has cutting-edge private practices similar to those of any other twenty-first-century country.[[34]](#footnote-34) [[35]](#footnote-35)

These early healthcare efforts came in the wake of the fall of the Soviet Union and therefore faced significant implementation challenges. Insurance was too expensive and unable to adequately supplement state funding in the health budget, while privatization added complexity and inefficiency. The increased complexity is apparent in the addition of new entities to the organizational structure, mostly related to dealing with the newly free market, like *Roszdravnadzor* (health surveillance), *Rospotrebnadzor* (consumer rights), funding organizations, and private entities. See Appendix II for details. Healthcare was important to the fledgling Russian Federation and its presence in early legislation indicates that the administration understood as much, but as the nation rushed to reorganize itself, many practical elements of Soviet system were maintained. There were not really any major health reforms during the post-Soviet period other than in funding.

Recent health reforms of the 2010s are difficult to compare to previous ones because of differing circumstances surrounding the Russian government. The annexation of Crimea, War in Ukraine, and ensuing international sanctions hurt the government economically. Economic woes meant that the administration had to curtail present and future spending. Much like during Soviet times, healthcare invariably came lower in the list of priorities than defense and economic development. Recent policy was not an original concern of this project, but given the scale of some of the new changes in medical education, inclusion of the recent period is necessary to making a relevant policy analysis.

### Soviet Medical Education

The first Soviet medical institutes (*vuzy*) were merely renamed Tsarist schools, often with the same administrators and staff as before the Revolution. For example, the Imperial Institute for Experimental Medicine became the State Institute of Experimental Medicine in 1918, then became the All-Union Institute of Experimental Medicine in 1932 as the Union’s premier research institution, and then was replaced by the Academy of Medical Sciences of the USSR in 1944.[[36]](#footnote-36) While institute staff and the medical profession as a whole were dominated by the old aristocracy, Semashko wisely realized that the Union needed as many physicians as possible, regardless of political ideology. As such, by the time the post-Revolution health crises stabilized, the professors and heads of *vuzy* were largely the same as before. Semashko was very permissive: at a time when other commissars were purging their professions, he allowed Tsarists and nuns to join his institutions.[[37]](#footnote-37)

One early Bolshevik policy encouraged the proletariat and rural laborers into attaining higher education and entering careers typically associated with the bourgeoisie and intellectual classes that the Bolsheviks hated. The Bolsheviks made it cheaper for students of proletarian background (peasants, manual workers, etc.) to enter higher learning institutions and made it more expensive for those of non-proletarian background. New proletarian preparatory schools’ students and “toilers’” children were explicitly given higher admissions priority in institutes when the preparatory schools proved insufficient in sending enough proletarian youth into medicine on their own merits.[[38]](#footnote-38)

Reflecting the centralized Semashko health system, the entire medical education system was directly under government control. Unlike other post-secondary educational institutions, medical institutes fell under the purview of the Ministry of Health, not the Ministry of Education (with rare exceptions). Everything that occurred in *vuzy* did so according to government policy. All post-graduate activity of doctors was also conducted under the supervision of the Ministry of Health.

Soviet medical education was ideologically charged, at least in theory. Medical students had to attend certain ideology-related classes across several years of schooling. According to the most famous doctor of the Georgian Soviet Socialist Republic, Professor and Honored Dr. Gavriil Pondoev, the Soviet doctor was supposed to be many things: “ideologically educated,” “armed with Marxist-Leninist theories,” and “socially and politically educated.”[[39]](#footnote-39) Long before he became lead specialist at the Research Institute of Balneology, he was one of the Tsarist doctors recruited by Semashko.

Many elements of medical education are universal regardless of ideology, including lectures, laboratories, clinical practice, textbooks, examinations, and grades. One minor difference was that the USSR’s education used a five to one grading scale instead of the A to F grading scale. In Tsarist times, students were tightly supervised in all activities, but they gained more independence by the 1950s.[[40]](#footnote-40)

Soviet medical institutes were structurally unique. The *vuzy* were physically separated from other universities. There were a total of eighty-four completely independent medical institutes and nine medical schools that were university-affiliated (though still separate) in the Soviet Union before its fall.[[41]](#footnote-41) The exact names frequently changed and depending on the year, they might be called institutes, academies, or universities. Their policy aspects will be described in the Data and Findings section.

# Literature Review

This section will outline the issue of biased sources and provide an overview of existing literature. Based on the existing literature, this section will identify gaps therein, and comment on policy theories relevant to the analysis.

Endemic bias in sources created challenges in conducting literature review and analysis. One issue was that Russian sources tended to be pro-Soviet and English-language sources tended to be anti-Soviet. This was particularly notable in Soviet and American-authored sources. By the same token, Russian sources were broadly critical of the post-Soviet system. There was little in terms of neutral sources. Even supposedly impartial scientific studies and surveys imparted different perspectives and findings on identical subjects during identical time periods depending on who crafted them. For example, the Soviet *Notes of a Soviet Doctor* and the American *Doctor and Patient in Soviet Russia* paint contrasting pictures even though both books were written in 1957 concerning Soviet Russian urban hospitals.[[42]](#footnote-42) [[43]](#footnote-43) Outside of original policy documents, which were objective, subjective reports sometimes made it hard to determine the objective truth of what was happening. If primary sources were already biased, then secondary and tertiary sources would likely be biased as well.

There was a silver lining to biased accounts: authors’ opinions illuminated that which researchers, actors, and policymakers considered most important. For people to write or talk about something in depth means that they think it is important enough to praise or criticize. This study includes an attempt to synthesize opposing sets of sources into a single coherent analysis.[[44]](#footnote-44) [[45]](#footnote-45)

The historian U.P. Lisitsen divides Soviet medicine into five time periods.[[46]](#footnote-46) Two of the most germane to this project are the periods of “further developed socialist society” from 1953-1961 and “introduction to the stage of developed socialism” from 1962 onwards. This division makes sense, as other contemporary texts implied as much without explicitly stating so: Soviet healthcare from 1917-1952 was characterized by disruptive wars and recovery from war, but healthcare did not appear to fundamentally shift in the latter half of the nation’s existence. Lisitsen’s categorization supports the upcoming analysis in agreeing that while there were some policy differences between the 1950s and 1960s, medical policy from the 1960s onwards was very stable. Though medical education may have seen shifts, there were few exogenous or confounding factors thanks to the health bureaucracy’s stable nature.

The existing literature on Soviet medical education tends to touch upon a handful of the same themes; these themes include identifying medical education and medical care as only minor factors of Soviet health problems, but also that there were still serious issues in medical education, such as nepotism. The reason that anyone in the present day, be they academics, doctors or policymakers, cares about the Soviet medical education system is that it set the stage for today’s Russian medical education system. Given that the shortcomings of Soviet medical education were directly correlated to shortcomings in Soviet medical services (if doctors are educated poorly, they will practice poorly), it should come as no surprise that experts continue to look toward improving Russian medical education in order to improve Russian medical services to improve health outcomes in the long-run.

While the consensus is that improving education improves care and improves health, this comes with the understanding that the majority of the Soviet Union’s and Russia’s health problems were not directly attributable to medicine. The USSR’s systematic environmental degradation and astronomical levels of pollution posed massive epidemiological risks in acute and chronic illness that could not be solved through medical intervention. According to Preker & Feachem’s 1993 studies for the World Health Organization about factors affecting health, medical care directly accounted for 10 percent to 15 percent of negative health effects in Eastern Europe.[[47]](#footnote-47) This is because most major health problems could not be solved or prevented by medical intervention. High levels of smoking, alcoholism, and other high-risk activities proved and still prove to be massive sources of morbidity and mortality, as shown by the fact that circulatory ailments and cancers alone accounted for 70 percent to 80 percent of female and male mortality in 1989, ailments that are usually directly caused by environmental or social factors like smoking and drinking.[[48]](#footnote-48) Alcoholism was a particular menace, as evidenced by *The* *Lancet*’s study identifying alcohol as directly responsible for 52 percent of deaths from 1990 to 2001 for the 15-54 age group.[[49]](#footnote-49) Five million Soviets were considered public drunks by the government; that figure was at the end of Gorbachev’s successful anti-alcohol campaign and considered to be underreported by a factor of at least four to six.[[50]](#footnote-50) The 1985-1988 campaign reduced alcohol sales by two-thirds, alcohol consumption by nearly as much, and caused adult death rates to drop almost 20 percent.[[51]](#footnote-51) In the early post-Soviet era, President Yeltsin’s health advisor A.V. Yablokov echoed the notion that health problems pertaining to medical care were tertiary after socioeconomic and ecological causes and should be addressed tertiarily.[[52]](#footnote-52) In short, even after government campaigns, neither environmental nor social factors that led to most health problems in the USSR could be solved by medical intervention.

That said, a key driver of some literature concerning Soviet medical education is the belief that there are serious problems within medical education, measured by medical competency or lack thereof in students, graduates, and professionals. Even if medical care accounts for only 10 percent or 15 percent of negative health outcomes, a significant portion of that 10 percent can be tied to the quality of care offered, and the quality of care offered stems directly from the quality of training received. While ecological and social improvements would take billions of dollars and decades of work, the medical system is a forum that may require less investment to make policy improvements to improve health outcomes.

One theme noted in both Eastern and Western is the issue of nepotism or Party loyalty fouling the mechanisms of merit-based examination.[[53]](#footnote-53) The classic example in the literature is the tale of a student who is the offspring of a Party official who is allowed to pass or retake a key examination despite poor performance.[[54]](#footnote-54) However, given that less than 10 percent of the Soviet population were Party members, nepotism seems unlikely to be a significant factor in the medical school environment. Nepotism was likely more of an issue at high levels of the medical profession, such as in hospital administration where Party membership was nearly mandatory.[[55]](#footnote-55) The majority of medical school students and recent graduates would not be at a socio-economic level where Party membership was needed. There would not be a high enough proportion of Party members for nepotistic abuse to significantly affect medical education. That is not to say that such examples did not happen; they merely could not account for systematic shortfalls.

Some literature has already been written that pertains to Soviet medical education, but post-Soviet medical educational reform (or lack thereof) is a less researched topic. If reform was non-existent or limited, as asserted by Dr. Marilyn J. Telen, then this topic still merits investigation due to the fact that the Soviet Ministry of Health and its successor were highly aware of perceived shortcomings of medical education — why did the subject not receive the policy attention it deserved?[[56]](#footnote-56) One accusation leveled at Soviet medicine and the bureaucracy is that it took an authoritarian top-down approach.[[57]](#footnote-57) Ironically, much of the associated literature suffers from this same top-down approach. There are few case studies, focus groups, or other studies that examine on-the-ground understandings and implementation challenges. When research does get more specific, it frequently cherry-picks the most provocative examples or focuses on testimony from high-level personnel who are unwilling or unable to provide an accurate perspective; one example would be interviewing hospital administrators who no longer practice or who try to push a few positive points when everything else in their institution is negative.[[58]](#footnote-58) Existing literature also does not get granular in terms of examining specific curricula. These are some shortcomings in accessible literature that this study aims to partially rectify.

Before moving to policy theory, it should be noted that there are a few pieces of literature directly relevant to Soviet medical education that helped provide starting points for additional research. Michael Ryan’s “Patterns of Recruitment” chapter in his 1990 *Doctors and the State in the Soviet Union* describes some of the struggles of medical school entrance policies. The 1963 *Medical Education in the Soviet Union; Report of the Delegation on Medical Education* is the closest document thematically to this study in its attempt to catalogue various elements of medical education in that time period. Yulia Poltorak’s study on cheating was one of the first of its kind in Russia, but it has been supported by later studies and meta-analyses that reveal that the self-reported level of cheating increased dramatically across all former Soviet Republics compared to during Soviet times.[[59]](#footnote-59) [[60]](#footnote-60) It is less clear whether the actual incidence of cheating increased as dramatically or whether people were just more perceptive or willing to report it. Poltorak’s 248-person study across four different Moscow institutes revealed that 84 percent of students admitted to a blatant form of cheating.[[61]](#footnote-61) She suggests that similar levels of cheating existed during the end of the late Soviet era.

The primary theories relevant to this project are educational and policy theories. Dr. David Musick’s “Policy Analysis in Medical Education: A Structured Approach” and Dr. Tim Dornan et al.’s *Medical Education: Theory and Practice* are two germane theory-focused works whose concepts will be used as part of further analysis, particularly in identifying specific themes and topics for policy analysis.

Musick outlines a twelve-step approach to conduct policy analysis in the medical education field to address what he perceived as a disorganized approach to policy analysis tools when he was writing in 1998. Musick synthesizes the policy approaches of a number of predecessors to build his more comprehensive approach. He draws on works from Weiss, Short, Humes, and Reid to claim that the medical education literature of his time was missing a methodological tool that could be used uniquely in the context of medical education. Two definitions are key to this project: he defines medical education policy analysis as the “field of study and practice wherein the priorities, values, resources and educational processes” pertain to medical education, and he defines policy analysis in general as the study of “the contents of a given policy and the process by which the policy was developed and/or implemented.”[[62]](#footnote-62) [[63]](#footnote-63) These wide definitions offer a carte blanche to consider anything policy-related as part of proper policy analysis.

The twelve-step plan in order of presentation consists of: conceptual, normative, theoretical, empirical, economic, political, ideological, historical, assumptive, legal, and logical elements. The steps are self-explanatory, though Musick asks questions to explain each component. There is some flexibility between these categories. While the framework is useful in its own right, Musick himself shows a specific example pertaining to medical educational ethics in which he alters the twelve basic components as he sees fit. He also notes that the twelve pieces need not be weighted equally. The later analysis will not rely directly on Musick’s template even though it will consider similar concepts; for example, the Background Information section echoes the need to consider normative, political, ideological, and historical contexts of policies.

*Medical Education: Theory and Practice* is a British-Dutch textbook published in 2011 that takes a more micro-level approach to medical education policy than Musick. The four authors observe that there was no comprehensive medical education textbook in print at the time, which was in part because there was no comprehensive theoretical background on the topic. The authors divide medical education into two categories: theoretical and social foundations, and educational processes. Theoretical and social foundations refer to the philosophy and context of education. The first third of the text discusses theories of how people learn, theoretical-philosophical background, interprofessional development, and curriculum issues. The latter two-thirds of the book describe the minutiae of educational processes, which can be broadly divided into learning and teaching. Topics include admission, curricula, clinical learning, assessment, post-graduate education, creation of the learning environment, and selection of medical students. The authors agree with Musick that medical education policy is less a discipline and more a field or domain.[[64]](#footnote-64) Nearly all of Dornan et al.’s topics of educational processes provided confirmation for themes identified as areas for policy analysis in Data and Findings. Their work vindicated many of the researcher’s original choices of themes and revealed new ones to consider.

Thus far, there do not appear to have been many attempts to apply Musick’s, Dornan et al.’s, or similar frameworks to Soviet or Russian medical education systems. Indeed, Musick’s criticism of fragmented and disorganized policy approaches to medical education rings true two decades after he stated it, evidenced in part by Dornan et al. reiterating the same thing in their textbook. There were and continue to be attempts to apply Western medical philosophies to post-Soviet states, though there have not been many in education outside of small-scale attempts to send Western professors abroad. Dr. Marilyn J. Telen’s attempts to teach evidence-based medicine are one of the few examples.[[65]](#footnote-65) Evidence-based medicine has yet to gain traction in Russia.[[66]](#footnote-66) None of these efforts have involved a specific theoretical policy framework, which makes for yet another gap in existing literature. The sparse literature that exists on medical education policy agrees that no single theory is universally accepted. Musick wrote his article due to the disorganization of theories and Dr. Jerry A. Colliver questions medical education theory in its entirety: “the theory cannot be trusted to determine practice in medical education.”[[67]](#footnote-67)

However, as the previous approaches to understanding policy are anachronistic to the Soviet period and do not focus on the geographic area of interest, it was necessary to hunt for Soviet and Russian policy theories as well. Soviet governance was opaque and that sometimes made it difficult to identify relevant sources. Since all curricula were set by the state, philosophical debate was pointless and effectively nonexistent. Actual curricula and government statements made up the bulk of sources accessed by the researcher. Academic discussion was mostly confined to a handful of books and medical periodicals. Many primary sources were not accessible in their original forms but were found republished in newspapers, journals, and books. Nobody in the USSR wrote anything similar to Musick’s theoretical framework. Even scholarly debate of government policy was prohibited until *glasnost*. Actual discussion did occur after *glasnost* but often came directly from the government or appeared in government-sanctioned publications.

Constructing the literature review revealed that there was no unified, comprehensive repository on the subject. Academic discussion of Soviet and Russian medical education came in bits and pieces. One could find a single chapter in a larger book, scattered journal articles, an interview, or a report here and there. Authors generally took on different aspects of medical education policy without trying to integrate them into the context of the greater whole. Such a scattered nature makes it hard for someone interested in the topic to get a clear picture of the subject matter. Part of filling the gap in the literature is therefore conducting the start of such a synthesis.

# Methodology

This study’s methods included documentary analysis and qualitative interviews. These methods were chosen to determine official policy inclinations, gain on-the-ground understandings, and obtain a well-rounded interpretation. The health outcomes that result in part from education (mortality rates, morbidity, and so forth) have been extensively examined, so the researcher attempted to focus on more qualitative metrics of the education itself rather than further statistical outcomes.

In addition to conducting research to answer policy-related questions, the researcher intended to consolidate previously disparate strands of thought about Soviet and Russian medical education policy into a single point of contact on the subject. Part of this consolidation included mapping Russian-sourced medical education ideas into an English-language and American academic environment.

The methodology for both documentary analysis and primary interviews aimed for slightly more breadth in addressing a large number of elements of medical education policy than depth on a small number of topics. This was done to create an overarching picture of medical education policy in a single point of contact, as a major criticism of existing literature was that previous policy analysis was too disparate in the sense that policies were examined separately without considering how they fit together. If the project solely focused on only present-day Russian medical education policy, there would be little context for where the system came from and it would not matter to anyone outside Russia. Documentary analysis formed the foundations of the data analysis, interviews reinforced the documents, and in turn paved the way towards identifying new primary documentary sources.

### Documentary Analysis

The majority of research conducted for this study was done through consulting library books, studies, news articles, web sites, academic journals, meta-analyses, and similar primary and secondary sources. Statements from officials, laws and orders, and curricula were the most useful primary sources in showing what the official policy was. Curricula were examined because they directly affect students’ education.

The main methodological issue for documentary analysis was determining which sources to use and how to synthesize them into a novel analysis; the primary criterion for determining which sources to use was how directly they applied to medical education policy. As the Literature Review implies, there were lots of sources on medical policy, but few on education. In terms of documentary data collection, the researcher first searched for anything pertinent to the topic across Google and the University of Chicago library system. Second, the researcher was pointed to a number of Russian-language sources by academics active in Russian and Eastern European studies. Sources include medical databases such as the NIH’s National Center for Biotechnology Information, various books written by experts, policy journals like JSTOR, government reports, official laws, and Soviet or Russian academic writing and studies. The overriding focus for tracking down the relevant sources was identifying those which centered on discussing medical education policy more than overall health outcomes.

Across those aforementioned sources, the researcher considered analyzing the number of times that certain words and phrases appeared in digitally accessible sources to gauge if certain terms and language were more or less prevalent in policies. A digital wordscraper may have been useful, but many documents were not available electronically, or if they were, they appeared in formats that were difficult to search. The policy language wordscraper would not work in practice. Fortunately, the researcher was able to track policy without such a tool.

Documentary analysis posed challenges in the research process. Many of the primary sources were not easily accessible, at least in their original formats. In the case of older Soviet sources, this was sometimes because they no longer exist. In other cases, Soviet policy was conveyed through unique mechanisms, such as *Pravda. Pravda* was a Soviet newspaper that functioned as the government’s official broadcasting organ. It is just an ordinary newspaper today, but it used to be the primary mechanism through which policy changes and efforts were announced to the public. Statements by government personnel, state-operated publications like *Pravda,* and the few official policy documents are the only real primary sources on the USSR’s medical education policy. In the case of more modern sources, obtaining particular documents from Russian government archives was not practical while the researcher was in the U.S.

Documentary analysis offered a great body of information, though each type of source had strengths and weaknesses. The cost of biases in non-policy documents was outweighed by the benefits of objective information from policy documents. The final sample of sources for documentary analysis was chosen for direct relevance to medical education policy.

### Interviews

Interviews were initially conceived for examining *de facto* differences in policy implementation compared to the *de jure* official policy, but their purpose shifted toward revealing the existence of certain policies and providing context for them. This in turn helped the researcher identify the original policy documents that lead to the specific policies reported by interviewees.

The main impetus for the use of interviews as primary research comes from when the researcher conducted a project regarding the American Affordable Care Act. Interviewing doctors enriched the analysis. As such, interviews were conducted in a similar vein for the current project. The interviews were supposed to provide a broader baseline understanding in addition to whatever specifics they add; they succeeded in doing so. They also reinforced data from the documents and revealed new information that would have otherwise gone unnoticed.

The interviews were conducted using the following guidelines. A full University of Chicago Social Sciences IRB application was completed and approved before interviews began. Interviewees were contacted by email and by telephone. Each interview was conducted using a pre-written and pre-approved guide that was identical for all subjects except for follow-up or clarifying questions. All interviews but one were conducted in Russian. See Appendix III for the interview template. The interviews were translated in real time into digital English transcripts for analysis. The interview guide (including consent information) averaged approximately 40 minutes to complete. Consent was acquired verbally. Two individuals contacted in Russia and one in the U.S. initially answered but refused the interview; two other doctors interviewed later surmised that this negative response might be due to fear of offending the government. Interview data was stored in secure physical and digital locations, and then destroyed at the conclusion of the study. For the purposes of this analysis, each interviewee will be described as “Doctor” (Dr.) followed by a common gender-specific name — e.g. “Dr. Aleksei.” This project involved a total of thirteen interviewees out of an ideal objective of fifteen persons. The target population could broadly be described as any physician with medical education in the Soviet or post-Soviet health care systems. The sample of interviewees was mostly a sample of convenience. Snowball sampling was also used based on referrals from initial interviewees. Challenges included attempting to reach individuals who were from another country, in another time zone, from a particular industry, and willing to talk. Non-random sampling manifestly carries shortcomings of non-representativeness and sampling bias. As noted elsewhere, individuals tended to be highly opinionated on their educations due to different backgrounds and access to information, much in the way that academic sources were. However, this was the point of the interviews: understanding individual actors’ perspectives. Below is a summary of key information about interviewees, though a full table can be found in Appendix IV.

Table 1: Interviewee information summary

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Profession or position | Workplace | Location of school | Period of education |
| Dr. Aleksei | Physician, psychiatrist | Solo private practice in US | Leningrad, USSR | Soviet period |
| Dr. Ludmila | Retired researcher | Public health research center | Leningrad, USSR | Soviet period |
| Dr. Vera | Pediatric sports medicine | Public polyclinic | Frunze, USSR (Kyrgyzstan) | Soviet period |
| Dr. Peter | Pediatric neurologist, assistant professor | University | Moscow, USSR | Soviet period |
| Dr. Stella | Ophthalmologist | Solo private practice in US | Moscow, USSR | Soviet period |
| Dr. Tatyana | Pediatric ophthalmologist | Public polyclinic | Yekaterinburg, Russia | Post-Soviet period |
| Dr. Zhanna | Pediatric pulmonologist | Regional polyclinic | Yekaterinburg, Russia | Post-Soviet period |
| Dr. Anna | Pediatric ophthalmologist | Pediatric clinic | St. Petersburg | Post-Soviet period |
| Dr. Vladislav | Neurophysiologist, assistant professor | Pediatric research center | St. Petersburg | Post-Soviet period |
| Dr. Natalia | Neurologist | Outpatient center | St. Petersburg, Russia | Post-Soviet period |
| Dr. Elina | Ophthalmologist | City diagnostic center | Ryazan, Russia | Post-Soviet period |
| Dr. Daria | General practitioner | City polyclinic | St. Petersburg, Russia | Recent period |
| Dr. Yulia | Pediatric gynecologist | City polyclinic | St. Petersburg, Russia | Recent period |

A brief demographic breakdown is in order. Five doctors were educated during the Soviet period, five were educated during the early post-Soviet period, and three were educated during the past decade. Seven were educated in Leningrad/St. Petersburg, two in Moscow, two in Yekaterinburg in the Urals, one in Ryazan, and only one in a non-Russian republic — Kyrgyzstan. Three were male and ten were female; this reflects the heavily skewed gender ratio in Soviet and Russian medicine. Leningrad/St. Petersburg and Moscow can be considered representative of Russian medical institutes, though it was good to have other locations to make sure the nationwide experience was similar. The fact that these individuals are all from major urban centers reflects the fact that all medical schools were and still are in major urban centers. The use of documentary analysis was necessary because the non-random, small sample of interviewees would not be able to independently support any significant claims. Moreover, some interviewees had limited understanding of the official policies.

The memories of interviewees’ personal experiences were occasionally fuzzy, which is understandable given that the Soviet Union fell in 1991, so the youngest possible Soviet students would have finished schooling over twenty-eight years ago. Most Soviet-trained individuals who were interviewed completed medical school before that minimum. However, it was rare that interviewee testimony directly contradicted official policy (when applicable) in major ways. This vindicates the dual usage of documentary analysis alongside personal interviews.

The final use of the primary interviews was information gathering and providing richer context for the analysis. There were lots of facts that might be obvious to people working in the field in Russia, but otherwise difficult to find as an American researcher working from abroad. Interviewees’ comments about certain policies allowed the researcher to first learn about the policy’s existence and then use the knowledge gleaned from the interviews to hunt down the details of specific policy on the Russian internet.

# Research Data and Findings

The researcher identified ten sets of key themes of medical education that often tied into the theoretical frameworks of Musick and Dornan et al. Each theme shall be subdivided chronologically, with interview data and documentary analysis interwoven to avoid excessive subdivisions.

The overall development of Soviet and Russian medical education policy can be divided into three rough stages in recent history. The first matches U.P. Lisitsen’s “introduction to the stage of developed socialism” starting in 1962 and ending with the end of the Soviet Union in 1991. After the rapid development of the Soviet health system and medical education system after the Russian Civil War and Second World War, Lisitsen’s stage can be characterized by stability. There were still minor tweaks, so the mid-late Soviet period was not static. The second stage is the early post-Soviet period from 1992 until 2010 or so. This stage marked a gradual shift away from the Soviet model and can be characterized by a number of notable changes even though the Soviet framework was present. However, much like the rest of the systems undergoing upheaval in the 1990s, there was a sense that the institutes had a “Wild West” of their own until being reined in during the start of the 2010s. The last period extends up into the present. Major changes from the previous model began to be proposed and instituted across the board — the success of the actual implementation ranges from complete to limited at the time of writing.

### Metrics - Was There Actually a Problem?

One important question must be answered before conducting the actual policy analysis: was there actually a measurable problem within Soviet and Russian medical education? As a corollary, if there was a problem, what was its extent? The understanding and perception of the problem informs the policies proposed or implemented to address it. Determining the actual level of competency of Soviet-trained doctors is out of scope for this study (this warrants future research via a survey-based or interview-based study evaluating Soviet-trained doctors), but a rough picture can be drawn from other sources.

**Soviet Period.** Dr. Yevgeniy Chazov was Minister of Health for the Gorbachev administration, a controversial Nobel Prize winner, and one of the main sources in the Soviet government that claimed there was a problem not just in Soviet healthcare as a whole, but specifically in Soviet medical education. He wrote a letter to the rest of the Politburo in September 1987 where he determined a statistic that would be cited for years: 40 percent of all recent medical graduates were “completely devoid of medical skills.”[[68]](#footnote-68) He also cited the “attestation” program of post-graduate medical testing, which stemmed from the need to examine doctors in the post-war period (the following Attestation section details the actual attestation process). 30,000 out of approximately 350,000 practicing doctors tested passed on a conditional basis (9 percent); they would have to be retested and sacked if they failed the retest. Another 1,000 failed and were summarily sacked. Moreover, Chazov claimed in a 1990 interview after he resigned his position that it “was the first time [the Politburo] recognized just how bad the situation in the field was.”[[69]](#footnote-69) Chairman Novak of the Central Committee of the Medical Workers’ Union stated that from 1982 to 1985, 25,500 doctors passed conditionally, 16,200 had their qualifications reduced, and 762 were sacked.[[70]](#footnote-70) The difference between Chazov’s and Novak’s figures is likely due to rounding (30 versus 25.5 and 1000 versus 762), so Novak corroborates Chazov. Chazov’s two main statements about medical graduates and attestation are difficult to reconcile with one another. Assume that someone medically incompetent cannot pass such post-diploma exams. 31,000 out of 350,000 doctors failing or conditionally passing indicates that at most 9 percent of doctors were actually devoid of medical skills, not 40 percent. However, that is not the whole story. Given that there were approximately 1.17 million practicing physicians in the USSR at the time, that means that around two-thirds of physicians were not examined by attestation.[[71]](#footnote-71) The Post-graduate Education section reveals that if they were not attested, they were not examined at all.

Since attestation was usually voluntary and could offer a pay raise, it is probable that the physicians who opted to test were those more likely to be competent; truly unqualified doctors would not even attempt attestation.[[72]](#footnote-72) As the upcoming Attestation section states, good doctors were incentivized to be attested, while bad doctors were disincentivized. In this light, Chazov’s alarm is more understandable if 10 percent of the USSR’s self-identified best doctors who selected to undergo attestation were incompetent. Another possibility is that the examination apparatus was flawed; the test was too easy and people passed who should not have.

Even when doctors were grossly incompetent, Soviet health authorities were reluctant to strip them of their right to practice medicine. For example, in Voroshilov Oblast in 1951, 80 percent of surgeons and 70 percent of gynecologists allegedly could not perform basic surgeries, but the government would not or could not pull over half of a region’s practicing surgeons out of operating rooms.[[73]](#footnote-73) Order 524 estimated that 40 percent of all surgeons required retraining in 1951, 36 years before Chazov made a similar claim.[[74]](#footnote-74) Such a refusal to remove incompetent doctors can be attributed to Soviet medical philosophy: in the same way that doctors were not permitted tell terminally ill patients of their woes because of the belief that such knowledge would be more detrimental to all of society, the government would not be motivated to prove that so many doctors were dangerously bad lest the fearful knowledge hurt the populace more than malpractice did. Alternatively, even if the government was unconcerned with scaring the populace, removing a large number of doctors would leave such regions dangerously understaffed. Herein lies the problem of post-graduate testing through attestation. Incompetent doctors were not effectively deemed incompetent and those deemed incompetent were regularly not removed or retrained. Chazov’s shocking statement is not directly corroborated by other evidence; one reason that Chazov’s claim cannot be confirmed is that there were no other assessments of physicians’ competency other than attestation. That said, given the similar figures from statistical reports and Ministry orders from the 1950s, and avoidance of attestation, there does seem to have been a significant problem in producing competent medical graduates even if the exact 40 percent incompetency figure cannot be confirmed.

Chazov authored the 1987 bill “Basic Guidelines for Developing Protection of the Population’s Health and for the Restructuring of the USSR’s Health Service in the 12th Five-Year Plan Period and for the Period up to the Year 2000,” which included elements relevant to education. It included a new reduced quota for secondary school graduates entering medical school (which was immediately reverted because it was too low), an attempted extension of medical training to seven years, and the added requirement of a new practical skills examination.[[75]](#footnote-75) [[76]](#footnote-76) Despite his best efforts, he complained in a speech to the Nineteenth Party Conference that resources were not directed to healthcare and lambasted the construction of a state-of-the-art train station next to an ageing hospital where “you should see the conditions in which patients . . . are treated.”[[77]](#footnote-77)

After his resignation, Chazov wrote in his memoirs that the situation had been hopeless: reforms had failed due to underfunding, under-equipment, and undertrained physicians.[[78]](#footnote-78) The State Committee on Statistics (*Goskomstat*)published a 1989 report that stated, “there have been no substantial changes” in quantity and quality of healthcare services.[[79]](#footnote-79) The researcher is inclined to agree with Chazov and *Goskomstat’*s assessment due to the stability of the Soviet health system as a whole and as reflected in medical education policy. The specific policies that he designed for improving the medical education problems that he identified were unsuccessful in solving them.

### Attestation

Even though there was no system of continuing medical education in the Soviet Union, the aforementioned attestation program merits discussion as it was vital to determining the competency of practicing physicians. While thousands of physicians underwent attestation in the USSR, the program was extremely sparsely documented.

**Soviet Period.** There were a number of different attestation programs set up for different professional fields in the post-war years; the medical attestation program was envisioned in 1945 as a means to reward the qualifications of medical specialists. It was part of the fourth Five-Year Plan and was not originally designed as a means of continuing medical education (CME) or quality control, but this changed somewhat by the time the first attestations entered implementation. The attestations were rolled out by specialization via individual Ministry of Health orders, such as Order No. 759 for surgeons in 1949.[[80]](#footnote-80) Depending on performance, doctors could be placed into ranks I through V. Rank I doctors could get bonuses, II-III got nothing, IV-V required retraining, and unranked doctors could be decertified.[[81]](#footnote-81) This meant that the best doctors were incentivized to participate and bad doctors were disincentivized. Medical attestation was initially conceived as voluntary and limited in scope, then broadened, but as the number of practicing physicians ballooned in the USSR, it became no longer practical for the resource-strapped Ministry of Health to test every physician.

Not a single Soviet-trained doctor or Soviet-practicing doctor interviewed underwent attestation. In fact, Dr. Peter commented, “I’ve never even heard of [attestation]!” Though more than two-thirds of Soviet doctors did not undergo the process by the late Soviet period, one would expect that someone would have at least heard of it even in a small sample. It is unclear why this dissonance occurred, especially considering that pediatrician and neuropathologist interviewees explicitly should have undergone attestation in its original design. The most obvious reason for the lack of awareness is that the sample size was too small and the sample was unrepresentative.

**Post-Soviet Period and Recent Period.** Even though nobody had ever heard of it, medical attestation apparently still exists as a pay-scale acceleration process in many post-Soviet countries.[[82]](#footnote-82) The addition of continuing medical education and new methods of specialization, like certification and accreditation, have supplanted attestation, at least in Russia.

### Curricula and General Policies

What students actually study is arguably the most important policy of any educational institution. Some of the most straightforward aspects of education policy are the curricula and other activities assigned by institutes as part of the educational process.

**Soviet period.** In the USSR, all teaching material was state-approved and state-mandated, so curricula were direct government policies. In Lisitsen’s fourth Soviet period, from 1953 to 1961, there were five primary medical tracks: the faculties of therapeutics (general/internal medicine, obstetrics, gynecology, and surgery), pediatrics, sanitation and hygiene (public health, often abbreviated as *San-Hyg*), stomatology, and pharmacology.[[83]](#footnote-83) Most medical schools had multiple faculties available to students, while some had only one.[[84]](#footnote-84) Students in each track were divided into cohorts for lecture and subdivided into smaller groups for “practical” studies, such as laboratory and clinical studies. All interviewees used the Russian term for “practical” instead of “clinical,” so “practical” will henceforth be used instead of “clinical.” The curricula specify the number of hours of lecture, laboratory, and practical work if applicable. Medical institutes in 1955 did not require any internships because such a policy had not been developed yet and asked for sixteen weeks of practical clinical work over six years; 1955 was the first year with six-year curricula.[[85]](#footnote-85) Fifteen to sixteen weeks remained the norm for practical work in the mid-late Soviet period. A research faculty-track was also gradually rolled out across several institutes in the late 1960s. The curriculum was subject to review and revision every five years in the framework of the broader Soviet Five-Year Plans for the Development of the National Economy.[[86]](#footnote-86)

The 1955 curricula reference practical work in the summer after the fourth year, but it took several more years for the final model of practical work to be implemented. M.G. Sirotkina, the director of Moscow Medical Institute #2 (now known as Pirogov Russian National Medical Research University), published an article in 1960 regarding recent changes in curriculum.[[87]](#footnote-87) The changes that she commented on include increasing pediatric and therapeutic student on-site activity in hospitals and out-patient departments. In the first and second year, students spent eighteen hours as assistant nurses over six days. In each subsequent year students were given more responsibilities, serving as full nurses in the third year, physician’s assistants in the fourth year, and out-patient medical staff in the fifth year. According to her, the only other practical medical work occurred during nine days in the fourth year. All medical students had to go through nursing rotations. Even after the changes, Sirotkina pointed toward the continued need to bridge the theoretical with the practical. In order to do so, students were often sent to out-patient services, but they did so unwillingly because of the lack of local resources and the lack of educator interest in out-patient facilities. Clinical courses only began in the third year and this pattern continues to the present day. The aforementioned model for practical work was never altered.

Institutes also sponsored *studencheskie nauchnie kruzhki* or *obshchestvo* (*SNK* or *SNO*), which means student scientific circles or societies. Dr. Aleksei recounted, “After the [school] program, you’d go to meetings and gain some integral knowledge of the discipline.” These groups included discussion of the particular medical subject and sometimes research. The point of these groups was to offer additional subject-specific learning and help students determine how to specialize, though less than 25 percent of the student body participated on average.[[88]](#footnote-88)

Upon finishing school, students were assigned by the government to work in a particular place for three years (*raspredelenie)*.[[89]](#footnote-89) Sending doctors to the countryside was necessary to support rural communities. Dr. Aleksei agreed: “The quality of medicine, availability of drugs, availability of different procedures, varied dramatically if you were on the periphery. If you go to the provinces, it doesn’t exist [sic].” *Raspredelenie* done by quota. However, young doctors disliked being shipped away and tried to avoid *raspredelenie*. Dr. Ludmila explained, “I got this [better] job because mother had a connection. Marriage would protect you from being sent.”

One of the most important parts of education is what students are taught, or the curricula, so examination of curricula is important to the analysis. Below is a short summary over time of two of the most popular curricular tracks, Sanitation-Hygiene and Therapeutics. A full table detailing the exact classes and number of hours per class can be found in Appendix V. The figures come from official curricula, reproductions of curricula, and students’ transcripts. Approximately 6600 hours was the standard for six-year programs from 1945 to 1985.[[90]](#footnote-90) Determining the exact number of hours was not always possible due to inconsistencies in the original sources (the *Report of the Delegation on Medical Education* also remarked on this), so the researcher occasionally had to make educated estimates based on the available data.[[91]](#footnote-91)

Table 2: Summary of medical curricula over time[[92]](#footnote-92)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Faculty of Sanitation-Hygiene | | | Faculty of Therapeutics | | |  |  |  |
| Year | 1955 | 1960 | 1979 | 1945 | 1955 | 1960 | | 1985 | 2017 |
| Total hours | 6636 | 6804 | 6666 | 6627 | 6783 | 6764 | | 6581 | 7309 |
| Number of classes | 39 | 39 | 46 | 35 | 41 | 41 | | 48 | 72 |
| Average hours per class | 170 | 174 | 145 | 189 | 165 | 165 | | 137 | 102 |

**Post-Soviet Period.** Medical school courses did not change much in Soviet times in any faculty other than changing the number of hours allotted for various classes, but there were significant changes afterward. Changes included replacing certain courses and adding faculties.

Perhaps the most notable changes in courses can be found in the removal of the various ideology-focused courses. Courses that focused on communism, such as History of the Communist Party of the Soviet Union (CPSU), Political Economy, and Dialectic and Historical Materialism, disappeared when the CPSU disappeared.[[93]](#footnote-93) They were replaced by History of Russia and/or Philosophy. The curriculum remained heavily standardized, which was a natural outgrowth of previous education policy in the USSR. As was the case during the Semashko era, the Ministry did not allow elective courses.

In addition to the expansion of courses, the number of faculties and tracks available expanded on a university-by-university basis. This can be seen by the additions of “economics, ecology, psychology, philology, law” to the previous core tracks of therapeutics, pediatrics, sanitation and hygiene, stomatology, and pharmacology as recounted by Dr. Elina. These tracks were not necessarily full six-year MD programs and pertained to the medical aspects of each topic, such as medical law or the economics of medicine.

Soviet medical students had to undergo military training, sometimes called military “cadre” or “military business.” People pursuing higher education could avoid mandatory conscription, but the USSR wanted its medical personnel somewhat trained in case of a war. Military training was not always technically part of the curriculum, but mandatory nonetheless. It was sometimes combined with History of Medicine or Medical Gymnastics on transcripts.[[94]](#footnote-94) Medical students graduated with the rank of junior lieutenant. Immediately after the fall of the Soviet Union, this training became optional. Dr. Tatyana stated that it was already “entered by volunteering” in 1992; she meant that it was no longer a requirement and only people who requested the class received military training. None of the interviewees opted to take it once it became optional.

Another minor difference is the number of days of class. Classes were usually six days a week during the Soviet period and immediately thereafter. Drs. Anna, Vladislav, and Natalia reported 5 days of class a week either always or after their first year between 1993 and 2003. Dr. Elina studied from 2003 to 2009; she and doctors interviewed after her reported a return to 6 days a week. This particular policy change does not seem to be written in federal law, so it may be an example of Dr. Vladislav’s lament that “due to everything falling apart in the 90s, different universities could kind of do whatever.”

**Recent Period.** Drs. Anna and Daria confirmed that the practical model of orderly/assistant nurse to nurse and so on remained unchanged as the framework for required practical work up through the present day. Dr. Anna listed, “Second year nurse assistant, third year full nurse. Fourth year in polyclinic, fifth year in the hospital” as the norm in the 1990s, while Dr. Daria recounted, “First orderlies . . . junior med-personnel, medium med-personnel (nursing assistant), nurse by third year, fourth year we were working with full doctors” in the 2010s. According to Dr. Daria, nursing duties were so important that “after third year, you could take an exam for certification to become a working nurse.”

*Raspredelenie* so reviled that even decades later, Dr. Daria recalled a similar fear: “*Pervichnoe zveno* — the government very much wants to get free students to go to specific locations. We were so scared of this that we wanted to switch to paying [tuition] in the fifth year.” Free tuition was the norm before the turn of the millennium and was still common after, yet some medical students were so concerned about being assigned to rural areas that they considered paying expensive tuition to avoid such an undesirable posting. Even though no *raspredelenie-*esque policy was ever passed, rumors of its existence persisted.

The number of hours spent in class increased to over 7300 by 2017; this was done by having longer classes according to interviewees. Courses were still paired as one or two lectures and one or two practicals per day. The 2010s can best be characterized by a reduction of the number of hours per class and the addition of many specialized courses germane to the twenty-first century medical zeitgeist, such as bioethics and medical informatics. In the social sciences courses, History of the Motherland sometimes replaced History of Russia.[[95]](#footnote-95) In Soviet times, medical students had forty to fifty courses, but this figure rose to seventy by 2017.[[96]](#footnote-96)

### Agriculture-related Policies

The history of the Soviet Union and Russia in particular is the history of an agricultural nation. This agricultural history would play a role in medical education policy.

**Soviet Period.** The early Soviet regime rapidly forced industrialization to the point that the rural population dropped steadily until slowing in the 1980s and only plateaued at the regime’s fall.[[97]](#footnote-97) The USSR always maintained a large percent of its population in agricultural areas even if workers and students flocked to the cities. As noted in the Background section, an early Bolshevik policy was to give proletarian students higher admissions priority to institutes. Dr. Ludmila stated that such agricultural and proletarian quotas were still operational in the late 1970s. The quotas on an institution-by-institution basis were so precise as to specify what towns their proletarian recruits had to come from: “They wanted people (men) from Torzhok, from Tver, from parents who were workers.” While the Soviets ultimately stepped away from the most aggressive recruiting plans of early Bolshevism, the administrative trends they set proved hard to turn away from and set the stage for years to come.

There were two elements of rural practices that most directly affected the lives of medical school students. First, younger students were forced to return to the farms to assist in harvesting. Second, some students were allowed to and even encouraged to join construction brigades. Both of these practices could consume one to two months of the school year even with advances in agricultural and construction technology by the 1980s.[[98]](#footnote-98) There was no easy way for schools to make up the lost time and almost all young people in the nation had to take part. The exact type of agricultural harvest and duration depended on the region; Moscow students reported attending potato harvests (*kartoshka)* for the first one or two years, while the Kyrgyz Dr. Vera grumbled about “apple harvest first year.” The different types of harvests meant that no matter where in the USSR a student attended medical school, he or she was guaranteed mandatory harvest work. Construction brigades ran for at least three years for the one male interviewee who did them, though Dr. Peter called them “construction work.” Older students could be called to additional years of harvest, but this was rare and invariably earned the ire of the senior students: “We had potato harvest on the last year which was unheard of. There was a big hubbub about that,” groused Dr. Peter. These interfering agricultural activities were not instituted by medical schools. The decision came from above: *Gosplan* valued food and infrastructure for the Union more than it valued a month or two of medical school. However, institutes did indeed have purview in that they allowed participation in construction brigades as a substitute for nursing practice or other educational activities that students would otherwise do over the summer. A sort of double jeopardy ensued in that students’ non-academic summer activities ate into the school year and the only possible time to make that up would be during the summer which is when those activities occurred in the first place.

Even though many schools were not near agricultural areas, these agricultural policies affected all medical students. As described in greater detail in the later section on Quotas and Entrance Policies, rural students made up a significant portion of the collective student body. Most if not all of those students would be summoned back home for some portion of the harvest. Non-rural students had to participate as well. Agricultural practices required by the central government of the USSR therefore likely had a significant effect on students’ learning.

**Post-Soviet Period and Recent Period.** The fall of the Soviet Union and ensuing death of *Gosplan* signalled the immediate end of *kartoshka*, construction brigades, and similar such school-interfering activities. No analogous activity replaced it.

### Quotas and Entrance Policies

Good entrance policies are important in medical education, as they should ensure that medical schools get the best qualified aspirants; Musick and Dornan et al. mention entrance policies for this very reason. The analysis raises Occam’s Razor-like questions: “were medical schools selecting the right students to become doctors?” Could Soviet medicine have failed to recruit well-qualified candidates? The questions are especially germane due to the previously mentioned longstanding practice of recruiting members of the less-educated proletariat. Even without considering examination practices, which were and still are the quintessential method for assessing competency during students’ *séjours* at school, there were issues in policies selecting students. The first piece of Soviet entrance policy was a strict set of state quotas.

**Soviet Period.** *Gosplan*, the State Planning Committee that governed the planning of the USSR’s command economy, cared more about quantity than quality in all industries including healthcare; to this end, it instituted a system of quotas. Just as a factory needed to churn out a certain number of tanks or machine parts, medical schools operated under government policy to accept a certain number of students and correspondingly graduate a certain number of students. These quotas increased over time in order to pursue Soviet expansion goals. For example, the nationwide class of 1957-1958 was supposed to graduate 15,000 physicians and the class of 1985-1986 was supposed to graduate 52,000.[[99]](#footnote-99) Intake, assessment of institutional quality, assessment of professor quality, and graduation rates were all measured based on quantity not quality. This created a perverse incentive structure in that institutions had to fill classes and professors were discouraged from failing students lest it call their teaching ability into question. The effects of the reliance on quotas (and other quantitative metrics for success) can also be seen in the Examinations section.

One issue is that medical students did not like medicine. Filippov and Mitev’s 1984 study found that 72 percent of Russian medical students wished they were not medical students, while only 61 percent of Baltic students answered the same.[[100]](#footnote-100) Several years before, Shchepin et al. foreshadowed Filippov’s work, as 30 percent of Leningrad medical students stated similar negative opinions.[[101]](#footnote-101) For 72 percent of Russian medical students to dislike medicine, common sense dictates three possibilities: young people entering school did not care about medicine to begin with, school made them hate it, or some combination of both shaped their views.

One reason that institutes may have earned the ire of their students was that young students may not have been ready to correctly choose their career paths. The Rector of the Moscow Institute of Stomatology co-wrote a *Komsomolskaya Pravda* article in 1984 that asserted that high schoolers could not be expected to choose the best career for them at age seventeen.[[102]](#footnote-102) While it might be true that teens are not able to make the best decisions for their future careers, the argument that choosing a career at a young age makes students dislike school is not convincing given that many nations in Asia and Europe encourage students to go straight from high school into professional school without such negative attitudes towards schooling. The article also notes that the August medical exams were later than most exams, resulting in the rhetorical question, “What sort of vocational selection can one speak of when medical institutes are beset by serried ranks of young men and women who only a month before had dreamed of becoming what they wanted to be — physicist, biologist . . . anything but a doctor.” This implies that many medical applicants were people who simply had not been able to enter their preferred institution.

However, the government appeared aware of the issue of medical students who were not interested in medicine. In 1985, it declared orderlies of two years and certain medical personnel of three years to be eligible for special “out-of-competition admission” to increase recruitment of those already interested in medicine. Nurses and other paramedical personnel such as *feldshers* had their own specialized paths to enter medical schools such that around 20 percent of medical students in 1963 had gone through some paramedical training.[[103]](#footnote-103) It is unclear whether that 1985 reform was substantive or just a rubber-stamping of existing *de facto* entrance trends. In 1987, the government doubled down and reduced the number of spots available to secondary school graduates to 20 percent of all slots as part of early 1987’s omnibus changes to higher education.[[104]](#footnote-104) This admission policy backfired because when failure rates increased slightly, institute populations fell below quota and the Ministry of Health was forced to ask the Ministry of Education to raise that number up to 30 percent in the next year. Quotas were one of the few elements of medical education that the Ministry of Health did not fully control. The highest levels of the government appeared aware of the problems associated with disinterested medical students and attempted to solve them but without considering all the consequences.

As noted before, another policy of preferential enrollment was extended to rural applicants as the spiritual progeny of older Bolshevik policy. In conjunction with the specialization reforms of 1968, the Central Committee decreed the creation of new preparatory divisions in 1969.[[105]](#footnote-105) The government intended to increase access of rural or less-educated persons to higher education and address rural physician shortages. Potential students sponsored by collective or other state farms could obtain preferential enrollment provided that they returned home after graduation.[[106]](#footnote-106) The Minister of Health reported that around 30 percent of all preparatory division students and 40 percent of first-years were from rural areas in 1976.[[107]](#footnote-107) These preparatory students were supposed to make up at least 20 percent of medical students by 1980, reaffirming the earlier impact of agricultural policy on the constitution of the student body.[[108]](#footnote-108)

Soviet entrance exams were similar to in-school exams. Students were permitted to apply to only a single medical institute at a time and each institute had its own exams. Each field of higher education had its entrance exams at a certain time; medical school entrance exams were among the very last at the end of the summer. The only criteria for admission were the entrance exams and high school transcripts.[[109]](#footnote-109) The exams were scheduled at the target institute across multiple days by subject: chemistry, biology, physics, philosophy, and Russian. Philosophy was cut by the time the earliest interviewees applied in the 1960s. If a student had a gold or silver medal from high school (an average grade of five or four, respectively), they needed to take only one of the scientific subject exams. High school transcripts were used to gain admission to the exams in the first place, as not everyone could take them. Drs. Ludmila, Vera, and Peter confirmed that high school grades did indeed count. Each exam counted as a maximum of five points and so did the high school final grade. Applicants might undergo a short interview. In contrast to Western practice, there were no written personal statements, supplements, or extracurricular resumes to support the exam.

Some interviewees mentioned the role that discriminatory policy and *blat*, the Soviet form of corruption through favors, played in undermining the credibility of entrance examinations*.* Dr. Ludmila remarked, “You may get into [a school] because of your family connection. Also, if your relatives are famous. Also if you know somebody who may take a bribe.” She stated that men officially required lower scores than women; the different passing scores for men and women were posted publicly. This was presumably a result of the need to deal with the mass feminization of the Soviet medical profession; the gender ratio was very skewed, as women made up 68 percent of doctors in the USSR and 72 percent in Russia in 1983, though the gap was slightly smaller than the 1961 Union-wide ratio of 74 percent.[[110]](#footnote-110) [[111]](#footnote-111) Dr. Ludmila reported that “there was some discrimination against Jews.” Unlike the publicly-available test scores, anti-Semitism was unofficial and limited. It likely reflects the remnants of Stalinist anti-Semitic propaganda from the 1950s.

Dr. Aleksei best summarized the shortcomings of the entrance policies: “People who went to medicine in Russia were often times those who did not get into complexities of technical knowledge.... To be a doctor is a prestigious thing in US; not in [Soviet] Russia.” Like Dr. Ludmila, his firsthand perspective was that the best and brightest Soviet students were not the ones going into medicine. Part of the reason for this was because medical entrance exams came last. As asserted by the Moscow Rector, this meant that some students ended up in medical school not because they really wanted to, but because they were unsuccessful in getting into their first choice institutes. Another broader issue that he cited was exemption from military service: “When you enter the higher educational institution, you are exempt to going to the army [sic].” He implied that many men went to medicine and other higher institutions not because they were cut out for post-secondary education, but because they did not want to be conscripted. These issues help explain why many medical students were so dissatisfied.

**Post-Soviet Period and Recent Period.** The dissolution of the Soviet state resulted in the dissolution of *Gosplan* and similar state planning organs. Medical schools may have their own quotas for how many students come from where and how many students to enroll, but that is no longer state policy. While many medical institutes are state-run, they have greater autonomy than they did in the USSR.

There were a number of other notable changes in entrance policies during the post-Soviet era. Students were still originally supposed to be able to apply to only one institute for many years (underhanded methods notwithstanding, according to Dr. Natalia), though this changed with the passage of the omnibus Law No. 273.[[112]](#footnote-112) Students can now apply to five institutes and up to three faculties within each. By 2009, the gradual rollout of the 300-point “EG” Unified State Exam had completely replaced the institute-specific exams through Federal Law No. 17 and Ministry of Education Order No. 2451.[[113]](#footnote-113) The standardized EG is taken in high school rather than in each institute. High school grades no longer count as part of the exam score since there are no more separate exams for each institute in post-Soviet years, though medalists maintain their benefits from Soviet times. Having one unified exam rather than a series of entrance exams for different institutes and fields of study taken at different times (with Soviet medical exams being among the last exams) was a good step in reducing medical schools’ reputation for being a second choice. There have been no notable entrance policy changes in recent years.

### Post-graduate Education and Continuing Medical Education

Medical education did not stop with graduation from the *vuzy*. There were and still are additional programs of study for young physicians to specialize and gain additional practical experience.

**Soviet Period.** There were three main options for further education in Soviet times — *internatura* (internship)*, ordinatura* (residency)*,* and *aspirantura* (academia). *Internatura* was a one-year internship first introduced May 6th, 1968, by Order No. 517 as a means of “primary specialization.”[[114]](#footnote-114) Primary specialization could also be acquired through specialization programs that lasted two to six months followed by two and a half years of working as a junior specialist. In the words of Dr. Ludmila, “There were courses of higher qualification at the institute[s] of advanced training of physicians. But it wasn’t needed unless you wanted to really specialize.” There were thirteen such advanced institutes in the 1960s, but *internatura* and *ordinatura* were much more popular methods of specialization as evidenced by how all Soviet-trained interviewees referred to *internatura* or *ordinatura* as the main means of specialization. Certain Soviet Socialist Republics (SSR) such as the Estonian SSR made *internatura* technically required by law in later years, but this was not rigorously enforced.[[115]](#footnote-115) Medical graduates were able to work without *internatura* outside of highly specialized or surgical tasks. *Ordinatura* was residency, with the caveat that it was usually only two years and typically necessitated three years of prior work experience. *Ordinatura* was designed for learning even more specialized tasks than *internatura.* Dr. Peter explained that even at higher levels of specialization, the philosophy of learning on the job had risks: “They would sometimes leave *ordinatura* people alone at the hospital without support. It was hard. We did a lot. We had to do full procedures even though we technically weren’t qualified. There were more opportunities for error than in the U.S.” Young graduates were sometimes not quite trained for the work required of them even after additional schooling. No one interviewed went through *aspirantura* and it was generally considered rare; *aspirantura* taught students medical-biological research methods and involved no clinical training.

There was no real systematic continuing medical education (CME) system other than the limited attestation and a handful of refresher courses. Refresher courses could be taken by rural doctors every three years and urban doctors every five years.[[116]](#footnote-116) According to one British observer, demand allegedly outstripped supply, but the real issue seems like the courses were rarely taken and not taken seriously when they were.[[117]](#footnote-117) [[118]](#footnote-118) No interviewees recalled ever taking a refresher course. Dr. Ludmila pithily encapsulated the risks of little to no CME in her time: “You could have a doctor practicing who had not learned anything new in forty years.”

**Post-Soviet Period.** “Primary specialization” was reestablished on December 19, 1994, by Order No. 286 of the Ministry of Health as another way to refer to the system of specialist’s certificates.[[119]](#footnote-119) [[120]](#footnote-120) The certificate program was the primary mechanism of continuing medical education up until very recently. The certificate needed to be reconfirmed every 5 years. This was typically done by taking a month off of medical work to take courses and a certification exam. “If you do well, work pays for recertification. Work pays while you are off,” described Dr. Elina. In addition to getting a certificate from *internatura* or *ordinatura*, doctors could also go through “4 months of specialist education… [where] you had to pay,” as summarized by Dr. Tatyana. Dr. Zhanna’s experience differed: “I did not pay for primary specialization because I was sent by the hospital.” Dr. Vladislav reported “half a year of retraining courses” instead of 4. Specialization courses seemed more popular than in the Soviet era, even if they started costing money. The exact duration appeared to differ by medical specialty. Primary specialization courses involved free opportunities for the fortunate and paid opportunities for the less fortunate. For most of the post-Soviet era, *ordinatura, internatura,* and a few months of specialist training were all considered equivalent in rewarding a specialist’s certificates.[[121]](#footnote-121)

Cost became an issue in post-graduate education. While Dr. Vladislav surmised that he paid “not a lot (but free ones were rare).” Dr. Anna explained that there was a cost barrier that had not existed in Soviet times, as “free [*ordinatura*] was rare and my family could not afford to pay.” In terms of payment, Dr. Zhanna observed, “People could get *internatura* and *ordinatura* at the [hospital or university] department — if some people wanted this specialty, but were not really invited by the department, they could pay extra or buy their way in.” Everyone who mentioned *ordinatura* mentioned that it was rare. For example, Dr. Zhanna said, “It was hard to find a job or an *ordinatura*.” The rareness of *ordinatura* may help explain the rise of specialization courses.

**Recent Period.** Certification was not legally standardized until Federal Law No. 323 "On the Basics of Protecting Citizens' Health in the Russian Federation" was enacted November 21, 2011, and Ministry of Health Order No. 982 “On Approval of the Conditions and Procedure for Issuing a Specialist Certificate to Medical and Pharmaceutical Workers, the Form and Technical Requirements of a Specialist Certificate” was enacted November 29, 2012.[[122]](#footnote-122) [[123]](#footnote-123) Dr. Zhanna commented, “Earlier, there was no paper certificate. . . . eventually an official document appeared called the ‘Specialist’s Certificate’” though the certification exams were *de facto* running beforehand. The certification exams were apparently not immune to academic dishonesty (more on this in the Academic Dishonesty section) and effectively 100 percent of people passed them on their first try.[[124]](#footnote-124)

Federal Law No. 273 overhauled education as a whole with a few particular revisions for the medical field. It backtracked on previous plans to increase postgraduate education by removing the few post-graduate requirements. *Ordinatura* was made available only to those who had completed *internatura* and it was no longer federally funded.[[125]](#footnote-125) *Aspirantura* was reduced to three years. The legislation reaffirmed the continuing medical education and specialist training programs established in the Soviet era.

After forty-seven years as the main method of specialization, *internatura* was abolished by an amendment of Law No. 323 on January 1, 2016, effective the following school year, leaving *ordinatura* as the primary mechanism of post-graduate education. Before *internatura’*s extinction, “*internatura* was okay for polyclinic work, butwas not enough for surgery. *Ordinatura* was more serious for hospital work,” reported Dr. Vladislav. As in the Soviet years, Dr. Daria explained, “unless you work three years, you cannot enter *ordinatura.”*

Accreditation is the name of the new standard of continuing medical education in Russia. It was confusing to many interviewees. The creation and implementation of the policy has faced several issues. The earliest concrete plans for the accreditation system come from the beginning of 2016 via Law No. 389 (which amended Law No. 323) for full implementation in 2019. The accreditation was supposed to have early stages active as early as 2016 and 2017, but a stream of attempted changes that fell through and actual formal amendments have turned accreditation into something incomprehensible. The initial law has been amended at least 6 times as of 2019, not counting the failed amendments.[[126]](#footnote-126) There were originally supposed to be four stages of accrediting different groups of medical personnel, but delays and amendments led to a six-stage plan instead. First to be accredited were graduating pharmacists and dentists in 2016. Second and third would be other new medical graduates in 2017 and 2018, respectively. The original fourth stage was supposed to apply to everyone else. The actual fourth stage, ideally one year after the third stage, would be accrediting medical professionals who graduate from other training programs, like *ordinatura*. The fifth stage scheduled for 2020 would be accrediting foreign-trained physicians. The sixth stage would then take the role of the original fourth stage and result in accreditation of anyone left over. Both the four and six stage plans eventually were designed for final execution by 2021. By 2025, all practicing physicians and new graduates will be accredited, not certified. The journey of the legislation has been hard to track. For example, the third stage in Order No. 127 was supposed to be revised, but it stalled in administrative debate.[[127]](#footnote-127) Dr. Zhanna proclaimed, “We do not understand it.” The younger Dr. Yulia summarized the new supposed order of education for a new graduate as “GOS [state] exam, accreditation, *ordinatura,* specialist’s certificate.”

The incomprehensible legislation and rollout schedule are reinforced by the fact that significant elements of the official accreditation website, “Methodical Center for Accreditation of Specialists,” are contradictory, incomplete, or missing. The sections “Required Forms,” “Instructions for Examiners,” and “Studying Programs” were empty as of January 2020. As a result of the constant turmoil of attempted amendment and re-amendment, the full accreditation program has now been delayed to 2021. More important than the delay is interviewees’ testimony that they do not understand it; doctors should not be confused on how to remain doctors.

Accreditation has been partially implemented — newly graduating pharmacists and dentists had to be accredited in 2016 and all new graduates had to be accredited starting in 2017. Drs. Yulia and Daria both underwent the process in 2017. Dr. Daria explained, “I couldn’t work anywhere upon graduation. I needed to get a specialist’s accreditation.” Doctors who complete the accreditation receive that certificate. Newly-graduating doctors already have to go through accreditation and therefore have a better understanding of it than older doctors.

Perhaps the strangest thing about all the confusion over accreditation is that it will not differ drastically from the existing certificate process. According to the original law, the accreditation exam must be retaken every five years, similar to recertification. Dr. Yulia commented that the only differences are that “every year you have to go to conferences, watch seminars, write scientific articles. To maintain a specialist’s certificate, one must accrue a certain number of points every 5 years.” Doctors will therefore not have a month-long paid vacation to recertify. Certificates earned before January 1, 2021 will still be active until their expiration five years later. Dr. Yulia noted that “everything is recorded” at the accreditation exam to avoid the accusations of academic dishonesty in certification exams. As noted previously, reports of cheating and an easy exam undermined the effectiveness and credibility of the certification process. The attempt to further standardize CME and add countermeasures to cheating would be admirable if not for the hassle of execution where constant amendments and disorganization have confused doctors, as well as for the lack of serious practical changes compared to the previous certification system.

### Examinations

Determining how a medical school measures competency is important to understanding the quality of medical skill (or lack thereof) in its students. The primary mechanism of assessment in any school environment is the examination. Examinations can be any sort of formal test of someone’s proficiency. The following will be a discussion of Soviet and Russian medical testing policy.

**Soviet Period.** In Soviet medical schools, the majority of examinations were conducted in an oral-theoretical format twice a year, once at the end of each semester. In practice, students would arrive at the exam room and select a “ticket” from the professor’s desk. The student would then receive a short amount of time to digest the question written on the ticket and prepare a response. The student would then describe their answer to the question orally to the professor. Based on the oral presentation, the professor could instantly assign and show a score when the student finished. Practical subjects included practical examinations (such as looking at microscope slides) and sometimes writing. Dr. Ludmila posited that oral-theoretical exams always counted for more: “You could bomb all your written tests and get a good score on your exams. Practical tests did not place any practical weight on your final grade.” As noted previously, if a professor did not pass enough students, then he or she would at best face criticism from students and from superiors, and at worst lose his or her job. While no Soviet-era medical professors were interviewed, *exposés* publishedduring *glasnost* offer firsthand accounts of the pressure to not grade examinations strictly.[[128]](#footnote-128) As noted in the Quotas section, the quota-based system created a perverse incentive system in which professors were discouraged from properly assessing students.

**Post-Soviet Period.** The oral-theoretical system of examination continued unimpeded until the Ministry of Health began experimenting with multiple-choice exams in the late 1990s. Dr. Vladislav stated that his first multiple-choice exam was in 1996, while Dr. Natalia said, “When I finished university, we took one multiple-choice-styled exam, but it wasn’t counted because nobody knew what they were doing.” Exams were still largely oral-theoretical in Dr. Elina’s experience in 2009.

**Recent Period.** The government completed its movement towards multiple-choice exams in higher education by the time the last interviewees were educated in the 2010s.[[129]](#footnote-129) The current tripartite structure of exams includes a multiple-choice section, a practical section if applicable, and an oral-theoretical component. The multiple-choice section was necessary for students to advance according to Dr. Vladislav, but all later doctors insisted that the oral-theoretical section was still the most important.

Schools have slowly moved away from the Soviet oral-theoretical model of examinations with all the advantages and disadvantages that entails. The value of different types of student testing is hotly debated in the education field in the West and will not be addressed here. The addition of multiple choice in the style of Western standardized testing was not one that students or professors enjoyed, yet it was one they realized would have to stay — “everyone hated [multiple choice] tests, both professors and students. Then everyone realized it was how it would be and made their peace,” lamented Dr. Vladislav.

### Tuition and Stipends

Another element of medical education policy is the financial aspect, such as how students pay for their schooling and how schools in turn support students in funding their education. Tuition and stipends are two such financial aspects.

**Soviet Period.** Tuition for all Soviet students was free and was one of the selling points of communism. Students were paid stipends to support them during their time in the institute and Dr. Stella recalled that international students were paid more than domestic students; they garnered a hefty “ninety rubles a month” in 1986, or approximately $300 2020 dollars.[[130]](#footnote-130) This was double the forty-five rubles that domestic students received according to Dr. Ludmila. Everyone interviewed who was educated in the Soviet period reported receiving a stipend, stated that almost everyone received a stipend, and noted that students who scored straight fives (the top grade) received a higher stipend. An issue related to quotas and examinations practices was that the worst consequence for a struggling student would be to lose his or her tuition stipend, but this was rare.

**Post-Soviet Period and Recent Period.** Post-Soviet times led to changes, particularly regarding tuition in the 2000s. Dr. Elina attended medical school from 2003 to 2009. Using her terminology, tuition was sometimes free (“budget” slots for students) and was sometimes paid (“commercial” slots). She also mentioned that there was an option for students to pay tuition for half their schooling and attend school at no charge for the other half (“partial-commercial” slots), though she implied that this practice was uncommon. When the Soviet Union fell, the free Soviet system was maintained and paid slots were originally rare or non-existent at some institutes. According to Dr. Zhanna, paid slots rapidly multiplied around the turn of the century. Dr. Natalia confirmed that “in [the] early 2000s, we started to see budget and commercial places.” Paying students who perform well now have the chance to move to free slots; Dr. Daria recounted, “There is paid, but if you got good grades, you could send documents to get transferred to free.” This feature is important because tuition can reach exorbitant prices of 180,000 to 240,000 rubles, or around $3,000 to $4,000 per year at Northwestern State Medical University (formerly Mechnikov) according to Dr. Daria. Her figure roughly matches prices reported for *ordinatura*s as well.[[131]](#footnote-131) Future research may be warranted to explore what percentage of Russian medical students pay tuition and how much that figure varies by institution. Tuitions currently vary slightly by school and region, but Moscow seems to set the standard. Stipends also include a negative stipulation in the sense that students who receive a final grade below a four are stripped of their stipend. There have been no notable tuition or stipend policy changes in recent years.

### Learning on the Job and De Facto Policies

Certain vital policies of medical education and healthcare policies that were taught to young doctors were *de facto* rather than *de jure* — they were never formally enshrined in law. Given that notadhering to these unwritten rules had consequences, they can be considered policies nonetheless. Musick would concur that even non-legislated policies should still be included in policy analysis, as he includes medical practice in his definition of medical education policy analysis.

**Soviet Period.** One microcosmic example of a *de facto* policy was the teaching of certain bedside manners. Perhaps the most interesting instance would be that Soviet doctors stated in their memoirs and in interviews that they were proscribed from telling terminally ill patients of their conditions.[[132]](#footnote-132) No legislation or curricula set up such guidelines. This was not just a professional norm, as everyone interviewed agreed on the existence and execution of this policy. It was strictly adhered to without exception.

Many medical graduates reported that they understood that their formal education was not comprehensive — it was no secret that they were expected to learn primarily on the job. “On the job” in this case did not refer to internships or clinical rotations before graduation. It meant the fresh graduate’s actual clinical posting. Every job requires job-specific training and on-the-job learning; this issue is dramatically underscored in a field like medicine where practitioners require massive practical knowledge and where other people’s health is on the line. The focus of learning on the job was not unique to medicine. Other young specialists, particularly in the natural sciences and technical subjects, were expected to supplement their limited practical training with on-the-job experience.[[133]](#footnote-133) The multi-year residency and fellowship programs commonplace in the West did not have a similar analogue in the Soviet Union. Dr. Ludmila revealed, “My job had nothing to do with what I was studying . . . so I had to study at work on the job” in 1979. Even though the official curricula laid out fifteen to sixteen weeks of practical training, some doctors felt it was not enough. Dr. Ludmila complained, “There was very little practical [training], but we were expected to do full surgeries right away.” For a specific example, she said, “After less than 2 months of OBGYN training, I had to do three abortions. I had no [idea] of what I was doing.” Her testimony can help explain why the Ministry of Health reported high rates of incompetency; large numbers of junior doctors were still learning on the job when they treated patients. The Post-Graduate Education section already touched on Dr. Peter’s similar experiences learning on the job, which continued in *ordinatura*.

**Post-Soviet Period.** In the post-Soviet years, Dr. Tatyana revealed that training encouraged doctors to offer patients more information than before: “We earlier refused to inform people about their conditions because we often didn’t know how to treat well. Now these are different times. If people ask if there are better treatments, in Russia they now tell young doctors to tell about them.” The Russian doctor is expected to give the patient the best information possible, a marked contrast to the previous expectation of limiting information to patients. Dr. Tatyana reported, “I had *ordinatura* after I already worked” and indicated that young physicians were encouraged to do as much learning as possible on their own before applying for *ordinatura*.

**Recent Period.** Even close to the present day, Drs. Daria and Yulia reported the idea of “need[ing] to learn on the job” before *ordinatura.* This sentiment echoes the traditional Soviet idea of leaving doctors with less formal training with the hope that they would learn in the workplace.

The researcher expected significant divergence between *de facto* and *de jure* policy in medical education to reflect those in the overall healthcare sphere. Contrary to this hypothesis, the Soviet Ministry of Health kept a tight grip on all activities in institutes and beyond from start to finish; it appears that the Russian Ministry of Health also follows this legacy of control.

### Academic Honesty and Dishonesty

While cheating was noted to exist in the Soviet Union as in any other place, it did not appear to reach epidemic proportions until after the fall of the Soviet Union. The resulting societal upheaval allowed for corruption and malfeasance; it was a starting gun for a whole new level of academic shenanigans. The lack of strong policy on academic honesty was and is a serious policy problem that reduces the effectiveness of learning.

**Soviet Period.** Interviewees indicated that cheating was common in Soviet times but epidemic in post-Soviet times. All Soviet-trained doctors agreed that cheating was common, though not systematic. “Cheating?” asked Dr. Aleksei, “it was common. Systematic? I don’t know.” Dr. Stella mentioned that cheating was already “widespread” by 1991, so it is not as though Soviet or non-Soviet education was the single factor affecting academic dishonesty.

**Post-Soviet Period and Recent Period.** All Russian-trained doctors indicated that academic dishonesty was epidemic. They cited all manner of clever strategies used by students, including using rolled up cheat sheet “bombs,” sneaking in electronic devices, and acquiring answers to exams beforehand. “We all used them. We wrote cheat sheets, secret slips, we tried to use earbuds, we thought of everything,” bragged Dr. Daria. Their justification was similarly varied — Dr. Zhanna described a sentiment that “we felt like we were studying a lot more than students in polytechnic institutes,” while Dr. Vladislav thought cheating justifiably escalated in response to hated multiple-choice exams. It was a fact of student life in Dr. Vladislav’s time: “We would regularly cheat on the [multiple-choice] tests when they were introduced in every class and every topic. We would get the correct answers or at least copies of the tests shortly before the tests.” Punishments were strict, as a cheater caught red-handed would at minimum be kicked out of the exam. Strict punishment universally does not deter and does not reduce recidivism.[[134]](#footnote-134) The various orders and education reforms, such as Law No. 273, failed to do anything about the continued allegations of rampant cheating in graduate, post-graduate, and continuing medical education.[[135]](#footnote-135)

The existing literature on Soviet and Russian cheating agrees with the interviewees’ testimonials: cheating increased in the post-Soviet era. One possible reason for increased cheating outside of the general social upheaval during the dissolution of the USSR was the relative fall in teachers’ and professors’ wages that encouraged bribery and discouraged classroom engagement; professors used to be among the highest paid professions in Soviet times.[[136]](#footnote-136) There have been instances of particular uproar about cheating but no systematic policy approach to combat it.[[137]](#footnote-137) Regardless of the reasons, post-Soviet classrooms faced far more cheating and did not do much to address it.

### Synthesis and Summary

The Data and Findings examined many themes across multiple time periods; there are a number of key points to remember regarding the advantages and disadvantages of Soviet and Russian medical education policy over time. This section synthesizes the key takeaways from previous sections.

While the Soviet medical education system produced unmatched numbers of physicians, the physicians were not always well-trained. Reports from the 1950s and 1980s mentioned similar figures of 40 percent incompetency. Attestation, while increasingly ignored by doctors, proved that there were indeed shortcomings in Soviet medical education.

The curricula show clear signs of improvement over time. The early post-Soviet curricula swapped out ideological classes and made military training optional, while the more recent curricula increased total class time, reduced hours in some classes, and added shorter specialized and general classes. This means that medical students spend more time learning relevant material than ever before.

Agriculture-related policies and state quotas disappeared with the fall of the Soviet Union, as did the practice of having exams unique to every institute. The removal of interfering policies and quota-related incentive structures reduces disruption of students’ summer academic work and theoretically encourages professors’ engagement.

One of the main issues raised by the analysis was whether or not *vuzy* were selecting the right students; post-Soviet reforms have made great progress in giving students more choices. Most important is the ability to self-select into medicine by choice rather than as a last-ditch career. Allowing applicants to apply to multiple institutes through one unified exam should reduce the number of dissatisfied and disinterested students in the institutes.

Post-graduate education and continuing medical education recently underwent major changes with mixed results. Specialization without *ordinatura* and *internatura* became popular in the post-Soviet period as *ordinatura* grew rare and expensive. *Ordinatura* was further limited to only those who had completed *internatura* before *internatura* was abolished. The combination of cost barriers and policy restrictions means that the average Russian physician has less formal post-graduate education than he or she would in the USSR.

Examinations trended away from Soviet oral-theoretical methods towards Western methods like multiple choice. Oral-theoretical testing still remains the most important part of testing. However, while entrance examination policy has taken great steps forwards, the imposition of standardized testing seems to have encouraged cheating.

Paid tuition rose around the turn of the century as Russia rapidly privatized. Despite many interviewees mentioning the various forms of tuition, tuition does not appear to be a barrier to students because of generous stipends as during the Soviet era.

*De facto* policies about keeping information from patients receded after the USSR dissolved. Doctors and patients are afforded greater freedom of information. The practice of on-the-job-learning is still very important for young graduates.

The cheating already common in the Soviet era turned into epidemic cheating afterwards. This may be in part due to the addition of multiple-choice tests, but also due to the lack of meaningful anti-cheating policy. The Soviet-style lack of elective classes reduces student agency and encourages academic dishonesty.

The above summary provides a refresher of the key takeaways in the Data & Findings. It will be helpful to keep these important elements in mind for the Policy Recommendations.

# Policy Recommendations

As the topic of this paper is medical education policy in Soviet and post-Soviet Russia, policy recommendations are most directly addressed to Russia and other post-Soviet republics. Some countries cleave closer to the original Soviet education model than others so the applicability of recommendations may vary. For example, Dr. Vladislav claims that Belarus is an example of a country that has changed little in its medical education system and functions “very closely to the Soviet mode,” while Ukraine has changed dramatically.

Since the fall of the Soviet Union, policymakers have pursued a somewhat circuitous but ultimately advantageous path in improving medical education. The move towards more significant post-graduate education and continuing medical education must be commended. Similarly, the abolition of Communist Party-focused coursework and transformation of military training from being mandatory to optional have opened up more time to be spent on classroom material that is actually relevant to practicing physicians.However, there is still room for improvement.

U.S. medical education based on the century-old Johns Hopkins model from the Flexner Report will be considered a benchmark for training quality.[[138]](#footnote-138) *U.S. News* ranked the world’s best medical schools: fifteen out of the top twenty schools were in the U.S. and the other five were in Western Europe.[[139]](#footnote-139) Doctors agree that for all the flaws (astronomical costs, time drains, not meeting demand yet not opening enough of certain positions), the U.S. model produces very well-trained physicians, particularly through rigorous post-graduate education.[[140]](#footnote-140)

Moving forward, there are a handful of policy recommendations to offer. Previously attempted reforms were improvements in theory but have fallen short in practice. Some of the researcher’s suggested reforms hearken back to the USSR’s approaches.

The removal of *internatura* is a mixed bag. On one hand, the removal of the internship as described by Dr. Yulia indicates that the Ministry of Health understands that existing post-graduate programs were insufficient: “We are moving towards an expansion of *ordinatura* because we understand that two years is not enough.” If the minimum two-year *ordinatura* was barely sufficient, the one-year *internatura* certainly was not. However, would it not be even better to keep *internatura* to maximize time spent learning? In the United States, internships are sometimes combined with the first year of residency and sometimes they are not. The idea of emphasizing more clinical experience is laudable. Doing so by actually abolishing an extra opportunity for clinical experience is less laudable. Even though some doctors railed against the decision to make *ordinatura* available only to those who completed *internatura* before its removal, the Ministry’s decision alleges that having more well-qualified *ordinatura* residents is a better option than having a larger number of less-qualified residents.[[141]](#footnote-141) As Dr. Peter warned, residents were frequently forced to perform procedures that they were not technically qualified to undertake. Removal of *internatura* would exacerbate that problem. As such, the researcher advocates for the reinstitution of *internatura,* ideally at no charge to interns.

*Ordinatura* offers a similar conundrum. The increased emphasis on a longer residency over a short internship is well-intentioned, but even the longest *ordinaturas* in Russia are three to five years. In the U.S., residencies typically range from three to seven years. Surgical residencies are typically longer and more intense worldwide. Russian general surgical residencies are three years (and are three years in some other former Soviet republics).[[142]](#footnote-142) They are five years in the United States. It is hard to believe that the same level of surgical expertise can be conveyed in 40 percent less time. If policymakers are relying exclusively on *ordinatura*, then the *ordinatura* should be expanded in length to match its expanded priority.

Unfortunately, doctors reported that *ordinatura* was relatively rare and relatively expensive. This conflicts with the previously implied desire to expand *ordinatura* as a replacement for *internatura.* The policy recommendations here are simple yet difficult: return to the Soviet practice of making *ordinatura* free by subsidizing it with funds from extraneous government programs and creating more of them by fiat. Even in the late-stage capitalism of the U.S., residents are paid. Making *ordinatura* more accessible is vital given that it will now be the primary vessel of post-graduate education for doctors.

An ambitious recommendation in post-graduate education would be for the government to consider creating new post-graduate opportunities similar to fellowships. Yearlong fellowships in sub-specialties are common in the United States and nobody could really argue that one could “overtrain” doctors in ultra-high-stakes fields such as cardiothoracic surgery. The recent four-to-six-month programs for sub-specialties are a step in the right direction — extending their duration to a full year would be more optimal.

A difficult-to-avoid problem with the proposed policy recommendations is determining whether adding more schooling would actually improve students’ qualifications. There is no definitive conclusion in existing literature, but more medical schooling probably does improve the quality of medical students. In the U.S., Dr. Sherine Gabriel, dean of Mayo Medical School, reported, “Prior experiments with [shortened] curricula were not successful,” while Emory Medical School dean Dr. J. William Elley warned, “Medicine is more complicated than it has ever been.”[[143]](#footnote-143) While longer schooling may not explicitly be better, these experts suggest that shorter is worse. If the assumption that more schooling means better trained physicians were false, then all medical internships and residencies would be meaningless because the entire point of post-graduate education is to increase competence through hands-on experience. From the interviews, as doctors explained the lasting mentality of learning on the job and even feeling unqualified in *internatura* or *ordinatura* as Dr. Peter did, it became clear that the best way to train doctors to treat patients is to offer trainee doctors more opportunities to treat patients. Further expansion on Preker and Feachem’s studies to determine how much medical training affects patient outcomes may be an interesting point of departure for future research. While Preker and Feachem determined that 10-15 percent of negative health effects in Eastern Europe could be explained by medical intervention, there is no research that directly links medical education to clinical outcomes.[[144]](#footnote-144) One could attempt to track longitudinal trends of clinical outcomes in the U.S. versus the increasing average length of medical education for American doctors. Another option would be performing a quasi-experimental study across different countries with different training regimens and comparing clinical outcomes. However, given the many possible confounders and scale of such an undertaking, proving a causal claim would be an entirely separate study. Though no causation can be confirmed only with correlation, countries with longer medical educations do tend to be countries with more renowned health systems.[[145]](#footnote-145) Based on the aforementioned expert opinions, adding more schooling would probably improve students’ qualifications and the policy recommendations would have a positive effect.

Accreditation is a great idea in theory that has been partially fouled in the implementation. Lack of continuing medical education was a shortfall of the Soviet era that was not entirely solved by five-year certifications, as evidenced by the attempted introduction of accreditation. Unfortunately, as noted above, the roll-out is the problem. The government needs to stop issuing new orders, stop amending old ones, and finalize accreditation. The accreditation process has been delayed too much and the delays have not helped doctors understand the process any further. The appropriate websites need to be revised for clarity. Since the accreditation process has not been fully rolled out, its content cannot be fairly judged, so the best option is to cut losses and try it out. If the full program works, then accreditation may improve CME. If accreditation does not work well when finally implemented, then its failure would still be better than the present limbo because it would confuse doctors less and because the knowledge gleaned from the process could inform future policy initiatives.

All of the policy recommendations for improving medical education would be undermined if widespread cheating was not dealt with; cheating is difficult to curtail, but it must be addressed to improve the quality of medical education. Much in the way that more severe punishments do not deter crimes, the Soviet Union’s and Russia’s strict cheating policies were unable to deter rampant academic dishonesty.[[146]](#footnote-146) To this end, a different approach ought to be taken. Yulia Poltorak offers a good starting point with her ideas on how tight social control paradoxically leads to deviant behaviors like cheating.[[147]](#footnote-147) The macro policies that create an environment incentivizing cheating by limiting student agency, such as the lack of elective classes, professor choice, and group choice, offer an easier way to address cheating than by focusing on cheating itself because cheating is endemic, and strict control and punishment do not disincentivize it.

The lack of elective classes reduces student agency, which encourages academic dishonesty; adding even a few elective classes per university may have a great effect in making students feel like they have more control over their schooling. While this could be done university-by-university or on a top-down federal basis, a federal order would likely be better to ensure the programs are available in as many schools to as many students as possible. Moreover, the perceived attempt described by Dr. Daria to push students back into assigned workplaces in an echo of *raspredelenie* ought to be addressed. Even though the government does not actually appear to be reinstituting *raspredelenie* in any way, the students’ false perception is still harmful if it artificially causes them to try to change their schooling and career paths. The solution is simple: explicitly remind upperclassmen that their post-graduation paths are not set in stone by the government. Individual universities or advisors could verbally tell students, or the Ministry could say so in an official statement. Reminding students that there is no *raspredelenie* might reinforce their feelings of agency.

It might seem like a tall order to reinstate *internatura*, expand *ordinatura,* and create fellowship programs, especially for free. If Russia (or any state) spent its money on educating doctors instead of building nuclear missiles, it would have no trouble at all funding the aforementioned initiatives. Here is a quick back-of-the-envelope calculation to show the feasibility. The average *ordinatura* tuition fee is somewhere on the order of $4,000 to $5,000, or 250,000 to 300,000 rubles per year; assume the reform is to either mandate *internatura* or a third year of *ordinatura*.[[148]](#footnote-148) Five main faculties of 200 students across fifty state medical schools means 50,000 graduates per year at most.[[149]](#footnote-149) It would cost a total of roughly thirty-seven to forty-five billion rubles to completely pay for three years of post-graduate education. In contrast, Russia spent over 140 billion rubles in 2016 just developing new nuclear munitions.[[150]](#footnote-150) That does not include modernizing old weapons, repairing unsafe weapons, or even building new bombs using existing designs. Russia places medicine below defense in spending priorities and is unlikely to change them, but the level of investment for the proposed reform is low compared to many other arguably extraneous programs in the state budget. That thirty-seven to forty-five billion ruble estimate ignores the fact that some doctors can afford to pay for *ordinatura* anyway — a need-based financial aid system like the one at the University of Chicago would cut the costs of state-funded *ordinatura*. Moreover, the USSR successfully ran free *internatura* and *ordinatura* across a much larger, more geographically and ethnically diverse space than the Russian Federation, so a return and an expansion do not seem unreasonable from a common sense perspective. The GDP of Russia exceeded the GDP of the USSR in 2006 and is now almost double that of the USSR, so Russia has the resources, especially considering that the USSR had to support programs in poor Socialist Republics as well.[[151]](#footnote-151)

All in all, many of Russia’s recent departures from the Soviet system are broadly a step in the right direction for policy. The reshuffling of accreditation, *internatura,* and *ordinatura* are imperfect in execution. Policies on these matters need to be revised and redirected to reach their full potential.

# Conclusion

No king rules forever; after the Soviet Union fell, the medical education system that it had cultivated for over seventy years hung on for the early post-Soviet times, but eventually became almost unrecognizable compared to its past self in the last few years. While the Health Ministry’s attempts to wrangle reforms in the waning Soviet years were ultimately unsuccessful and abandoned during the dissolution of the Soviet Union, they were not forgotten. The same problems of a lackluster medical education system producing under-qualified medical personnel still remained.

The various responses to the decades-old problems were generally good, yet limited. The Soviet period was largely stable in terms of medical education policy. The post-Soviet times added paid tuition and removed communist classes, military cadre, and harvests, but policy otherwise remained similar to before. The removal of *internatura* and new CME policies make up the policy highlights of recent years and mark the most significant departures away from previous models of medical education. As the Policy Recommendations section argues, many reforms were well-meaning examples of two steps forward, one step back.

Ironically, the present-day situation echoes the same flaw faced by Minister Chazov thirty-three years ago: Russia’s authoritarian leadership does not give healthcare, especially medical education, the attention it deserves, so implementing new reforms will be challenging and contingent on the willingness of the highest levels of government to admit mistakes and allot more funding. The government will have to pay to deal with cost barriers, rarity, and short duration of *ordinatura*, particularly if it is unwilling to revive *internatura.* The only elements that medical schools themselves will be able to directly control is dealing with the quality of education rendered. In particular, cheating continues to undermine the value of a Russian medical degree. Schools must therefore work to address academic dishonesty or any further government reforms will be severely hampered.

Other Eastern European nations should take heed of the path of Russian medical education as both a model and a cautionary tale. The successes ought to be identified and disseminated. The drawbacks ought to be examined carefully. The present model is a hybrid that represents disparate fading Soviet and new non-Soviet policy ideals. While superior to its predecessors, new Russian policy can be improved if policymakers put their minds to the task and give the health of the Russian people the highest priority.

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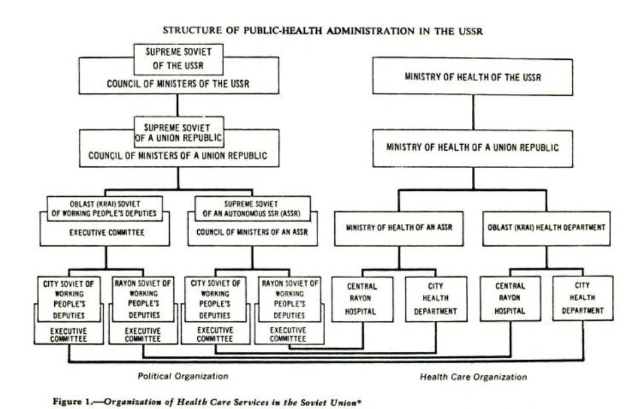
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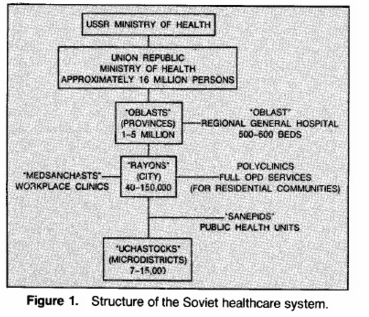
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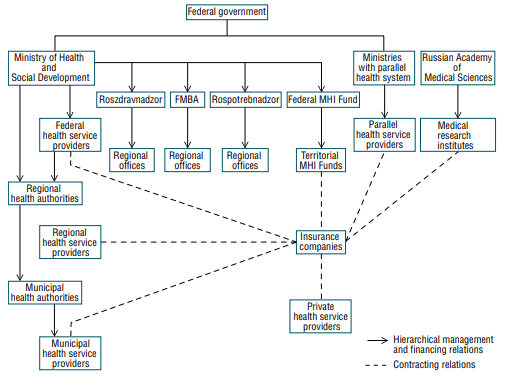
# Appendices

### Appendix I - Semashko Model

[[152]](#footnote-152)

[[153]](#footnote-153)

### Appendix II - Russian Modern Model

[[154]](#footnote-154)

### Appendix III - Interview Template

Study Number: IRB19-1621

Study Title: [Russian Healthcare Policy](https://aurairb6-prd.uchicago.edu/irb/sd/Rooms/DisplayPages/LayoutInitial?Container=com.webridge.entity.Entity%5BOID%5BD39B473422F67043882A11DB08B59825%5D%5D)

Researcher(s): Sorcha Brophy (PI), Nicholas Eklund

Interview Template:

Introduction:

My name is Nicholas Eklund. I am currently working on my B.A. thesis in Public Policy Studies at the University of Chicago regarding medical education policy in Russia and other former Soviet Republics. To this end, I am conducting a small number of interviews with people who have some experience in that subject. You will be asked to answer a number of questions in the interview. You should have received a document detailing the project and verbal consent information.

Feel free to ask any other questions that you would like. When you have thought it through, you can decide if you would like to be in the study. For this project, your informed consent may be verbal. Would you like to proceed? Do you agree for your responses to be recorded?

Questions:

Q1: Can you please describe your current position?

Q2: Please walk me through your history in relation to healthcare in Russia and other former Soviet Republics, listing your location of medical education, institution of education, your track, your degree, length of education, date of graduation, additional specialization or post-graduate education received, etc.

Q3: Please tell me about your training - for example, what did it consist of, what subjects did it include, and when? Generally, how would you explain your medical training to a layperson and to an expert?

Q4: Can you describe the examination proceedings?

Q5: What did an average day look like (classes, homework, etc.)?

Q6: How would you describe your learning environment and the student body?

Q7: Did you witness academic dishonesty during your education? Which of the following would you consider academic dishonesty? Copying someone’s homework. Copying someone’s answers on a test. Not citing a source. Can you tell me your perceptions on academic dishonesty in your education?

Q8: Please comment on the quality and general characteristics of your professors.

Q9: When you finished your education, did you feel prepared for your job? Why or why not?

Q10: Please tell me about your experiences with post-graduate education (*ordinatura*, *internatura*) and continuing medical education (attestation).

Q11: Were you ever aware of any changes or reforms in medical education policy over time? If so, please describe them.

Q12: What were some *de facto* policies you were exposed to? Where and how were they taught? (Give examples if necessary)

Q13: Is there anything else that I did not explicitly ask about that you think may be germane to the purposes of this project?

N.B. For Russian speakers, the exact same interview template will be used, translated word-for-word into Russian by the researcher. If other non-interview research requires that the content of the interview template be changed, that will be recorded in an amendment on the University of Chicago IRB portal.

### Appendix IV - Interview Summary

Table 3: Larger interview summary

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Name | Dr. Aleksei | Dr. Ludmila | Dr. Vera | Dr. Peter | Dr. Stella | Dr. Tatyana | Dr. Zhanna | Dr. Anna | Dr. Vladislav | Dr. Natalia | Dr. Elina | Dr. Daria | Dr. Yulia |
| Profession or position | Physician, psychiatrist | Unemployed. | Pediatric sports medicine. | Pediatric neurologist, assistant professor. | Ophthalmologist. | Pediatric ophthalmologist. | Pediatric pulmonologist. | Pediatric ophthalmologist. | Neurophysiologist, assistant professor. | Neurologist. | Ophthalmologist. | General practitioner. | Pediatric gynecologist. |
| Workplace | Solo private practice in US | Public health research center. | Public polyclinic. | University. | Solo private practice in US. | Public polyclinic. | Regional polyclinic. | Pediatric clinic. | Pediatric research center. | Outpatient center. | City diagnostic center. | City polyclinic. | City polyclinic. |
| Location of school | Leningrad, USSR | Leningrad, USSR. | Frunze, USSR (Kyrgyzstan). | Moscow, USSR. | Moscow, USSR. | Yekaterinburg, Russia. | Yekaterinburg, Russia. | St. Petersburg. | St. Petersburg. | St. Petersburg, Russia. | Ryazan, Russia. | St. Petersburg, Russia. | St. Petersburg, Russia. |
| Name of school | First Leningrad Pavlov Institute | Mechnikov Medical Institute of Hygiene and Sanitation. | Kyrgyz State Medical Institute. | Second Moscow Medical Institute (Pirogov). | Second Moscow Medical Institute (Pirogov). | Uralskiy State Medical Institute. | Permskaya Medical Academy. | St. Petersburg Pediatric Institute. | North West State Medical University (formerly Mechnikov). | First Pavlov Medical University of St. Petersburg. | Ryazanski State Medical University. | North West State Medical University (formerly Mechnikov). | North West State Medical University (formerly Mechnikov). |
| Years of study | 1963-1969 | 1973-1979 | 1975-1981 | 1981-1987 | 1985-1991 | 1992-1998 | 1992-1998 | 1993-1999 | 1996-2002 | 1997-2003 | 2003-2009 | 2011-2017 | 2011-2017 |
| Faculties | Therapeutic, stomatology. | Therapeutic, San-Hyg. | Therapeutic, pediatric, stomatology, San-Hyg. | Therapeutic, pediatric, research. | Therapeutic, pediatric, research. | Experimental: pediatric, therapeutic, San-Hyg, stomatology. | Therapeutic, pediatric, San-Hyg, pharmacology later. | Pediatric. | Therapeutic, San-Hyg, nursing studies. | Therapeutic, sports medicine, stomatology. | Therapeutic, San-Hyg, stomatology, pharmacology, psychology, philology, economics, law. | Therapeutic, San-Hyg, stomatology. | Therapeutic, San-Hyg, stomatology. |
| Entrance | Institute exam: chemistry, biology, Russian. Medalist: 1 exam (biology). Only score matters. Apply to 1 school. | Institute exam: chemistry, biology, Russian. Medalist: 1 exam (biology). Only score matters. Apply to 1 school. | Institute exam: chemistry, biology, physics, and Russian (4!). | Institute exam: chemistry, biology, and Russian. | International: N/A. | Only apply to 1 school. | Institute exam: chemistry, biology, Russian. School grades did not except for medalists who could take 1. | Institute exam: chemistry, biology, Russian. School grades not included. | Institute exam: physics (for therapeutics), biology, Russian. | Institute exam: chemistry, biology, Russian. Physics for other institute. School grades not included. | Quotas ejected. | EG (Unified State Exam), Russian, math, pick hem/bio. | EG Russian, chemistry, biology. Apply to 5 schools and 3 faculties each. |
| Free/paid | Free. Stipends. Higher stipend for 5s. | Free. Stipends. Higher stipend for 5s. | Free. Stipends. Higher stipend for 5s. | Free. Stipends. Higher stipend for 5s. | Free. International stipend higher than domestic. | Free depending on the entrance scores. Stipends. Higher stipend for 5s. | Free. Stipends. No stipend for 3s. Paid tuition around 2000 | Free. Stipends. Higher stipend for 5s. | Free. Stipends. Higher stipend for 5s. No stipend for 3s. | Free, but budget/commercial starting to come. Stipends. Higher stipend for 5s. | Budget (free), partial-commercial, and commercial (paid) | Free and paid. Good grades can move from paid to free. | Budget and commercial. Paid slots are last. |
| Time in school | 1 month harvest. | 1 month harvest. | 1 month harvest. | 3 yrs construction, 1 yr harvest. | Other studies. | 2 yrs 1 month harvest. | 1 month harvest. | No harvest. | No harvest. | No harvest. | No harvest. | No harvest. | No harvest. |
| Academic year | 2 semesters. 2 sets of exams. 1 month internship. 1 month vacation. | 2 semesters. 2 sets of exams. 1 month internship. 1 month vacation. | 2 semesters. 2 sets of exams. 1 month internship. 1 month vacation. | 2 semesters. 2 sets of exams. 1 month internship. 1 month vacation. | 2 semesters. 2 sets of exams. | 2 semesters. 2 sets of exams. 1 month internship. 1 month vacation. | 2 semesters. 2 sets of exams. | 2 semesters. 2 sets of exams. | 2 semesters. 2 sets of exams. | 2 semesters. 2 sets of exams. | 2 semesters. 2 sets of exams. | 2 semesters. 2 sets of exams. | 2 semesters. 2 sets of exams. |
| Days per week | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 5 | 5 | 5 after 1st year | 6 | 6 | 6 |
| Classes per day | 2 pairs. | 2 pairs. | 3 classes? | 2 pairs. | 2 pairs. | 1 practical, 1-2 lectures. | 2 pairs | 2 pairs | 2 pairs. | 2 pairs. | Some days only lectures. | 2 pairs. | 2 pairs. |
| Lectures | Strict attendance. Make-ups. | Strict attendance. Make-ups. | Strict attendance. Make-ups. | Relaxed. | Relaxed. | Relaxed. | Theoretically strict, poor in practice. |  | Theoretically strict, poor in practice. | Relaxed. |  | Extremely strict attendance. | Extremely strict attendance. |
| Practicals | Strict attendance. Make-ups. | Strict attendance. Make-ups. | Strict attendance. Make-ups. | Strict attendance. Make-ups. |  |  |  |  |  |  |  | Strict attendance. Make-ups | Strict attendance. Make-ups. |
| Subjects taught | 2 yrs general education, history of CPSU, dialectical materialism, historical materialism, mandatory military training, 2+ yrs P.E. | 2 yrs general education, history of CPSU, dialectical materialism, historical materialism, mandatory military training, 2+ yrs P.E. San-Hyg had fewer hours in medicine. | 2 yrs general education, history of CPSU, dialectical materialism, historical materialism, mandatory military training, 2+ yrs P.E. | 2 yrs general education, history of CPSU, dialectical materialism, historical materialism, mandatory military training, 2+ yrs P.E. | 2 yrs general education. Communist classes. No P.E. No military. Earlier schedule due to no harvests. | 2 yrs general education. | 2 yrs general education. 2+ yrs P.E. Philosophy. | 2 yrs general education. History of Russia and philosophy. Military training was optional. 2 yrs P.E. | 2 yrs general education. | 2 yrs general. Military only by volunteering. | 2 yrs general education. Military title removed the year before. History of Russia and philosophy. 3 yrs P.E. | 2 yrs general education. History of the Motherland, philosophy, 4 yrs P.E. | 2 yrs general education. History of the Motherland, philosophy, 4 yrs P.E. |
| Examinations | Oral + practical if applicable. | Oral + practical if applicable. | Oral + practical if applicable. | Oral + practical if applicable. | Oral + written practical. | Oral + written practical. | Oral + practical if applicable. | Oral + practical if applicable. | Oral, addition of multiple choice tests in 1996. | Oral exam. 1 multiple choice; discounted. | Oral + practical if applicable. |  |  |
| Professors | Mostly good, but not objective. Picked favorites. | 75% good, 25% awful. | Good. | Good. | Good. | All good. | Decent, but understood they'd entered wrong field in ‘90s. | Mostly good. | Not necessary. | Impressive. | Harsh teaching style. | Very pleased. | Very pleased. |
| Summer practicals | Orderly, nursing assistant, nurse, physician's assistant, | Orderly, nursing assistant, nurse, physician's assistant, health department. | Orderly, nursing assistant, nurse, physician's assistant, | Orderly, nursing assistant, nurse, physician's assistant, | Orderly, nursing assistant, nurse, physician's assistant, | Orderly, nursing assistant, nurse, physician's assistant, | Orderly, nursing assistant, nurse, physician's assistant, hospital. | Orderly, nursing assistant, nurse, physician's assistant, hospital. | Hospitals didn't need students, fewer practical internships. |  |  | Orderly, nursing assistant, nurse, physician’s assistant, 4th year working w/ doctors. | Orderly, nursing assistant, nurse, physician’s assistant, 4th year working w/ doctors. |
| Academic dishonesty | Yes. Very common. Students would get the list of the exam question before exams. | Some copying on homework. Difficult to cheat on clinical sciences. |  | 20%+ | Endemic. Cheat sheets. Tubes. | Chronic cheaters. Helped each other on hard questions. | Endemic. People felt they studied more than at technical institutes. | Most other students cheated. Telephones, earbuds, creative. | Cheating whenever there were formulas. Endemic cheating on tests due to finding answers. | People used them and tried to use them as much as possible. | Some. | Endemic. Cheat sheet "bombs", slips, earbuds, thought of everything. | Frequent. Electronics and phones. |
| Diploma | *Vrach* (therapeutic) | *Vrach (San-Hyg)* | *Vrach* (pediatric) | *Vrach (pediatric)* | *Vrach (therapeutic)* | *Vrach (therapeutic)* | *Vrach (pediatric)* | *Vrach (pediatric)* | *Vrach* (therapeutic) | *Vrach (therapeutic)* | *Vrach (therapeutic)* | *Vrach (therapeutic)* | *Vrach (therapeutic)* |
| *Raspredelenie* | Assigned. | Assigned, but due to family connection, assigned to good job. | Assigned. | Assigned. | International student. | No assignment. | No assignment. | No assignment. | No assignment. | No assignment. | No assignment. | Government wants to assign free students - *pervichnaya zvino.* | Government wants to assign free students - *pervichnaya zvino.* |
| Post-graduate education |  |  |  | Never heard of primary specialization. | N/A | 4 months of paid primary specialization. | 4 months of paid primary specialization in 2001. |  | Diploma would let you go to army, EMT, or polyclinic (with restrictions). Certificate of a specialist after *ordinatura.* | Could not work upon graduation. | Certificate of a specialist (from *ordinatura?)* | Could not work upon graduation after GOS - need specialist's accreditation. | GOS --> accreditation --> *ordinatura* --> specialist's certificate. |
| *Internatura* | Psychiatry in different institution. Could work without *internatura.* | Could work without *internatura.* | *Raspredelenie* in *internatura.* |  | N/A | Pediatrics. I was free, some paid. | Pediatrics. *Internatura* in workplace, proof exam in university. | Ophthalmology. Free, some paid. Certification exam after. | Okay for polyclinic work, not enough for surgery. | Neurology. She was paid. | Ophthalmology. Already a surgeon after *internatura.* | *Internatura closed in 2017.* | *Internatura closed in 2016.* |
| *Ordinatura* |  |  |  | Pediatric neurology. Free in city hospital, paid in medical school department. | N/A | Ophthalmology in different town*. Ordinatura* was so you can operate. You could do it in the university or workplace. | Free or paid depending on invitation. | Almost no free, few paid. 2-5 years. Too expensive. | Neurology 2 years. *Ordinatura* was paid and needed for hospital work. Specialist's certificate. | More difficult to enter than *internatura.* | Pediatric university. Paid. | Almost no free, few paid. 2-5 years. Need to work 3 years. | 2 yrs gynecology in different university. Movement towards expansion of *ordinatura.* |
| *Aspirantura* |  | PhD |  |  | N/A |  |  |  |  |  |  |  |  |
| Certification |  |  |  |  |  | Every 5 years. | Every 5 years. | Every 5 years. | Every 5 years. | Every 5 years. | Every 5 years there is 1 month of classes where work pays for your time off. | Every 5 years. |  |
| Accreditation |  |  |  |  |  |  |  | See Dr. Yulia. |  |  |  | Accreditation exam. | Yearly acquisition of points to maintain specialist's certificate in accreditation every 5 years. |
| Misc. | Education exempted conscription. Medical education second-rate, not prestigious. | Discrimination against minorities. "Undeserving" rural students. |  | *Ordinatura:* procedures even when not qualified. Opportunities for errors. |  | Very few paid universities, now more paid than free. USG in 2009-2010. |  |  | Second certificate from "retraining courses." |  |  | Unless you work three years, cannot enter *ordinatura.* |  |

### Appendix V - Curricula

Table 4: Full curriculum breakdown

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Faculty of Sanitation-Hygiene | |  | Therapeutics |  |  |  |  |
| Year | 1955[[155]](#footnote-155) | 1960[[156]](#footnote-156) | 1979[[157]](#footnote-157) | 1945[[158]](#footnote-158) | 1955155 | 1960156 | 1985[[159]](#footnote-159) | 2017[[160]](#footnote-160) [[161]](#footnote-161) |
| Inorganic chemistry | 140 | 227 | 202 | 162 | 140 | 182 | 105 | 87 |
| Organic chemistry | 148 | 85 | 132 | 187 | 145 | 131 | 115 | 90 |
| History of the CPSU | 160 | 150 | 120 | 125 | 160 | 150 | 120 |  |
| Biology, genetics | 190 | 176 | 176 | 216 | 190 | 172 | 164 | 135 |
| Physics | 136 | 176 | 202 | 144 | 136 | 152 | 218 | 185 |
| Latin, language | 220 | 244 | 250 | 298 | 220 | 238 | 72 | 147 |
| Histology, cytology, embryology | 182 | 153 | 176 | 250 | 182 | 182 | 182 | 135 |
| Anatomy | 392 | 295 | 254 | 397 | 392 | 376 | 294 | 276 |
| Biochemistry | 147 | 227 | 180 | 187 | 150 | 164 | 185 | 158 |
| Physiology | 247 | 255 | 228 | 278 | 247 | 246 | 258 | 228 |
| Roentgenology |  |  |  | 48 | 45 | 36 | 37 | 35 |
| Microbiology, virusology, immunology | 207 | 248 | 278 |  | 207 | 207 | 184 | 226 |
| Pathological anatomy | 170 | 154 | 142 | 264 | 192 | 192 | 166 | 180 |
| Radiology |  |  |  | 48 | 45 | 36 | 37 | 35 |
| Russian[[162]](#footnote-162) |  |  |  |  |  |  | 420 |  |
| Pathological physiology | 155 | 160 | 162 | 162 | 155 | 155 | 166 | 158 |
| Pharmacology | 151 | 141 | 162 | 219 | 170 | 170 | 166 | 158 |
| General surgery | 185 | 186 | 186 | 213 | 189 | 189 | 204 | 158 |
| Propaedeutics of internal medicine | 270 | 191 | 204 | 238 | 183 | 183 | 260 | 226 |
| Operative surgery | 79 | 111 | 122 | 127 | 117 | 117 | 126 | 113 |
| Otorhinolaryngology | 85 | 72 | 76 | 96 | 88 | 88 | 76 | 68 |
| Phtisiology |  |  |  |  |  |  | 70 | 113 |
| General hygiene | 121 | 235 | 214 | 254 | 162 | 162 | 126 | 158 |
| Dermatovenereology | 85 | 72 | 68 | 124 | 101 | 101 | 90 | 68 |
| Tuberculosis | 201 | 64 | 64 | 276 | 253 | 253 |  |  |
| Therapy |  |  |  | 304 | 486 | 486 | 352 | 384 |
| Obstetrics and gynecology | 140 | 111 | 116 | 279 | 379 | 379 | 226 | 180 |
| Ophthalmology | 64 | 57 | 80 |  | 80 | 80 | 72 | 68 |
| Surgery | 138 | 185 | 158 | 366 | 470 | 456 | 290 | 338 |
| Social hygiene | 280 | 333 | 214 |  |  |  | 122 | 135 |
| School hygiene | 155 | 244 | 140 |  |  |  |  |  |
| Endocrinology |  |  |  |  | 20 | 20 | 50 | 45 |
| Psychiatry | 68 | 48 | 84 | 96 | 90 | 90 | 94 | 113 |
| Traumatology and orthopedics | 148 | 194 | 146 | 100 | 60 | 60 | 144 | 135 |
| Neurology | 85 | 80 | 90 | 138 | 106 | 106 | 138 | 158 |
| Pediatrics | 116 | 140 | 134 | 212 | 166 | 166 | 170 | 226 |
| Pediatric surgery |  |  |  |  |  |  | 72 | 226 |
| Infectious diseases with epidemiology | 485 | 392 | 410 | 184 | 214 | 214 | 162 | 203 |
| Forensic medicine | 76 | 72 | 72 | 100 | 100 | 100 | 90 | 68 |
| Urology |  |  |  |  | 69 | 30 | 36 | 158 |
| History of medicine | 156 | 156 | 168 | 119 | 125 | 125 | 36 | 68 |
| Political economy | 90 | 90 | 100 | 180 | 90 | 90 | 100 |  |
| Philosophy |  |  |  |  |  |  | 140 | 113 |
| Medical gymnastics | 154 | 174 | 180 |  | 134 | 166 | 52 | 45 |
| Anesthesiology and reanimatology |  |  |  |  |  |  | 34 | 68 |
| Clinical pharmacology |  |  |  |  | 20 | 20 | 50 | 68 |
| Oncology |  |  |  |  |  |  | 68 | 68 |
| Stomatology |  |  |  | 111 | 165 | 154 | 36 | 45 |
| Professional diseases |  |  |  |  |  |  | 36 | 45 |
| Tropical medicine162 |  |  |  |  |  |  | 170 |  |
| Dialectic and historical materialism | 140 | 140 | 280 | 125 | 140 | 140 |  |  |
| Hygiene of nutrition | 218 | 263 | 192 |  |  |  |  |  |
| Occupational hygiene | 287 | 357 | 224 |  |  |  |  |  |
| Bioethics |  |  |  |  |  |  |  | 45 |
| Behavior |  |  |  |  |  |  |  | 68 |
| Economics |  |  |  |  |  |  |  | 45 |
| Psychology |  |  |  |  |  |  |  | 68 |
| Medical informatics |  |  |  |  |  |  |  | 68 |
| Disaster medicine |  |  |  |  |  |  |  | 180 |
| Additional classes[[163]](#footnote-163) | 165 | 146 | 280 |  |  |  |  | 745 |
| Total hours | 6636 | 6804 | 6666 | 6627 | 6783 | 6764 | 6581 | 7309 |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | 22.561 |
| Total classes | 39 | 39 | 46 | 35 | 41 | 41 | 48 | 70 |

### Appendix VI - Glossary

*Aspirantura* - graduate research degree program

*Feldsher -*  a paramedical practitioner without a full medical degree

*Glasnost* - movement for increased government transparency in 1980s, literally “openness”

*Gosplan* - State Planning Committee

*Internatura* - internship

*Kartoshka* - broadly harvest, literally “potato”

*Nomenklatura* - party elites

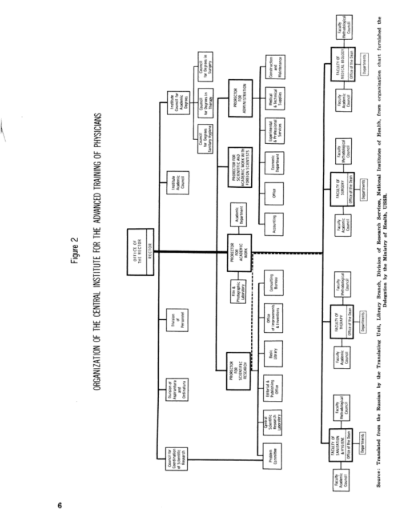
*Ordinatura* - residency, but shorter than in the West

*Raspredelenie* - government assignment to specific posts

*Studencheskie nauchnie kruzhki/obshchestvo* (*SNK/SNO*) - student scientific circles or societies

*Vuzy* - medical institutes

*Zakriti* - closed (clinics) only available to the *nomenklatura*

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