

Surgical Training in Russia: 2007

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This piece was written together with a senior Russian Surgeon. He provided the ideas, the data, and information and I have translated it into an English written manuscript, which was meant to be published in one of the surgical journals. Unfortunately, after the completion of the manuscript the anonymous Russian surgeon, after being advised by a few of his local “big comrades” against publishing “sensitive material”, decided not to place his name on this paper—which was thus shelved.

As I think that this may be of interest to some (and I do not like to surrender to any “political pressures”) I am placing the original draft on my web page.

Introduction

At nearly 17.1 million square kilometers Russia is the largest country in the world. Its population, although significantly reduced since the disintegration of the Soviet Union (216 millions in 1980) is still vast at 142,2 millions. Such wide spread population is served by about 690,000 doctors (48,8 / 10000 pop), working in 9500 hospitals.

Russia is an immensely complex country, undergoing constant political and socioeconomic shifts. Winston Churchill coined a famous aphorism: “Russia is a riddle wrapped in a mystery inside an enigma.” Yes, the immensely multifaceted and ever changing Russia can be an enigma even to us Russians, and so is the medical system, which, as always is the case—parallels to some degree the society, by which it is controlled, and whom it serves.

The puzzle of Russian medicine is also difficult to solve because accurate statistics are not always available. Numerous reports (mostly from the “west”) suggest that Russia's transition from a “socialist” to “market-led economy” has been accompanied by a certain decline in the health status of the population. However, the evolving change in the health providing systems could not account for the sharp decrease in life expectancy; instead changes in life style including alcohol, tobacco, crime, diet, stress levels seem to be responsible (1). Recent data, however, suggest that such negative trend has been reversed with the average life expectancy increasing: for women from 71.9 in 2002 to 72.4 in 2005; for men from 58,6 to 58,9 years, respectively. (2).

Obviously, I won't be able to comment about the precise impact that the quality of surgical care in Russia—and thus the quality surgical education—has on the well being of Russian people. In the following pages I would offer a brief outline about surgical education in Russia, not from the perspective of a “surgical leader” or a “medical politician” but from the point of view of an “average surgeon” practicing in X city.

Historical Background

The history of surgery in Russia parallels that of surgery in continental Europe by which it had been immensely influenced and cross-fertilized. The first hospital in Moscow was opened in 1682 and the first military hospital combined with a medical school in 1706. Subsequently medical-surgical schools opened in Petersburg (1798) and later in more peripheral cities such as Kharkov and Kazan (1804) and in Kiev (1841). The German language which was initially used to teach medicine was quickly replaced by Russian.

The first Russian professor of surgery is considered I.F.Bush - the author of the first Russian manual on surgery (1807). His pupil, I.V.Bujal'sky has surpassed his teacher and was known for operations of “bandaging large vessels” (aneurysms) and his anatomy atlas. In 1833 he has described access to the small pelvis through the obturator aperture. Other pupil of Bush - H.H.Salomon issued the first Russian manual on operative surgery (1840) in Russian.

But the genius of the Russian surgery was N.I.Pirogov (1810-1881). He was a great surgical writer and teacher; he was an outstanding organizer of field surgery, developing triage, use of the plaster bandage, hospital surgical clinics, and separate chairs of topographical anatomy and operative surgery, histology, pathological anatomy. In 1847, he was the first to apply Ether narcosis in the battlefield.

Growth of the industry and railways and the abolishment of serfdom (1861) demanded re-organization of the surgical system and around that time antisepsis was introduced in Russia. Also, scientific surgical societies were founded and magazines were issued. The Moscow surgical society was created in 1873; it was the second in the world after the Parisian (1853). Pirogov's surgical society was based in Saint Petersburg (1881).

The twentieth century brought with it the First World War (1914-1917), immediately followed by the October revolution and the Civil War (1917-1922), bringing havoc, death, famine and illness to many millions of Russians. The revolution, by adversely affecting the educated and affluent classes, created a marked deficit of doctors. In an effort to provide doctors to the suffering population –and perhaps in reaction to the quota system of the past—the Soviet authorities opened widely the medical schools to “all comers”, thus accepting relatively poorly educated individuals, and abolishing final examinations. The trend of “devaluing” the perceived value of medical education and thus the doctor’s status in society continued during the 1930’s when Stalin pushed for the mass production of doctors, the majority now being females. With the USSR increasingly cut off of the rest of the world it continued educating its doctors based on pre-revolutionary European models, focusing on a “practical doctor”, and thus diverging from the trends in the “west” which began emphasizing the doctor as a “scientist-healer”.

No other country had ever suffered as many casualties as Russia during WW-II (1941-1945) (24 millions or 13.4% of population died) and Russian surgeons co-endured, died and heroically treated the many more millions of wounded. This is where a great generation of Russians surgeons learned their craft. For the English language reader I would recommend the book *PPG 2266 A Surgeon’s War* by Nikolai Amosoff (1975) which so authentically depicts the glorious story of Russian surgeons during that immensely cruel saga.

Following WW II the “information blockade” (termed “*iron curtain*” by Westerners) has almost confined Russian surgery within itself and the rest of the “Eastern Block”.

In 1991 Russia was re-born after the collapse of the Soviet Union, when Boris Yeltsin seized power heralding a radically new politico-socioeconomic order. Suddenly, the information blockade has been lifted: doctors could now travel freely abroad, foreign books and magazines became available and, of course, the “INTERNET revolution” brought the international medical world to the desk top of any Russian doctor who has access to computer and wants to learn.

However, all such earth shattering historical changes did not change the way Russia is training its surgeons: they are still educated mainly through prolonged apprenticeships like they had been educated throughout history.

The history of Russian medicine and surgery makes an integral part of the history and culture of the Russian Nation: surgeons and physician are often described in great details by our great literary masters like Leo Tolstoy, Alexandr Solzhenitsyn, Anton Chekhov, Mikhail Bulgakov—the last two were doctors--and many others. In their mastery fiction they had depict doctors and surgeon like in real life. I would recommend that you read them.

How Russia educates its surgeons?

Like in Europe and unlike the USA people go to Medical School (University) directly after completing eleven years of elementary and high school. University education is mainly free of charge and anyone can enter it after admission examinations (naturally, dwellers of big cities, where basic education is better, have some advantage). Currently there are 52 academic institutes teaching medicine in Russia; almost all students who manage to enter a medical school eventually would graduate after six years, as a medical doctor.

After graduation there are two pathways to become a surgeon: *Ordinatura* (2 years) or *Internatura* (1 year). *Ordinatura* takes place in an “academic hospital” within a “University Department of Surgery”. *Internatura* takes place usually in “community” non-academic hospitals. But in reality the only difference between the two options is the duration. *Ordinatura* is more desired because it seems more "high-level" but in both systems anyone who wishes to become a surgeon will reach his goal. Interestingly, the opposite is also true and not a few doctors who have graduated as surgeons (specialists) after *ordinatura* choose not to work in their specialty or even leave medicine all together.

The method of surgical training did not change much from the old days: from the first day of training the trainee walks the surgical ward full of patients he has to treat as if he were a “qualified surgeon”—of course under the supervision of the “older comrades”. Like with swimming: do whatever you can, if you don’t know how –“we will show you--but only once or twice!” Although not a “perfect”, and not a “modern” method of

teaching, to us in Russia this appears a very effective way to teach motivated and clever young doctors: they begin doing appendectomies in the first day of *ordinatura*, hernias on first week, cholecystectomies on first month and gastrectomies at the end of first year; many of them begin to operate during their university years, because those who want to become surgeons spend extra time on surgical rotations and volunteer for night shifts in emergency surgery, where they can assist qualified surgeons, This way motivated students do their first operations (as operators) during the 4th-5th years of medical study.

There are no examinations during residency but at the end of training graduates have to take examinations that are stricter after *ordinatura*. Unfortunately, in some places such examinations are so “formal” that many graduates don't hear about them. Every five years qualified surgeons have to undergo a” re-certification”: brief period of learning, a formal examination and new stamp in the certificate.

What happens to the surgical graduates?

Like during residency the system continues to be based on the principles of “natural selection” and “only the fittest survive”. The best and smartest graduates usually stay on as surgeons in their “academic” departments or other departments in their hospital. They may try to find a place in another hospital but such “lateral” movements are unusual and difficult to arrange. There are plenty surgical positions in outpatient departments but they are not popular. Some graduates decide to change course at this stage and leave the medical profession.

In brief, the system is not much different from the “old continental” one. If you have trained in a big city and do not wish to leave it then you will work under your Boss –as, we say it in Russian,—“gray hair appear on your head.” If you have trained in a rural settings you have a good chance of becoming a chief of a small surgical department Surgery in 25years—the only qualified surgeon covering a vast geographic area: no roads, no tertiary care hospitals-- you are totally independent!

The income of surgical trainees is ridiculously low—around 50 to 100 US \$ per month; many are forced to take extra emergency calls for about 50 \$ per shift. The monthly salary of qualified surgeons depends on “scientific level”, experience and type of hospital (higher in town than in rural) –averaging 400-600 US \$ for ordinary surgeon

and 800-900 \$ for “chiefs”. This is what the first Soviet Minister of Health (1918-1930) N.Semashko said about miserable salary of Soviet doctors: “If the doctor is good – people will feed him, if the doctor is bad – we don’t need him”. To some extent this is true even today!

Such income which surely appears very low to the ‘western eyes’ places the Russian surgeon within the “middle class” allowing for more than an adequate quality of life to him and his family. I should note that private practice is growing fast in big cities with large private clinics prevailing on smaller group surgical practices. Private departments are being established also on the base of big municipal or federal hospitals. many surgeons divide their time between the public and private sectors.

Sub specialization

Additional training in surgical sub-specializations is taken after completion of the *Internatura* or *Ordinatura* (the latter is advantageous). In Russia the “general surgeon” is 70% abdominal surgeon (90% emergency, 10% elective), the rest of his attention is dedicated to surgical infections, hernias, thyroid, breast, varicose veins and oncology –the spectrum depending on the special interest of the “Boss”, type of hospital and location.

Some sub-specialists (e.g. cardiothoracic surgeons, neurosurgeons, vascular surgeons, coloproctologists, plastic surgeons) tend to work in better hospitals and earn more money than the “usual emergent abdominal surgeon”. Some surgeon obtains more than one sub-specialization.

There exist also some anomalies which seem to be specific to our system. For example: in Russia an “oncologist” is not merely a physician who just administers chemotherapy, but an “oncologist” does also oncological surgery. So an oncologist, after a residency in oncology (but none in general surgery), without any knowledge of emergency surgery, can perform major abdominal cancer operations all his life.

To be registered as a pediatric surgeon one has graduate as a pediatrician and then finish residency (*ordinatura* or *internatura*) in Pediatric Surgery. According to the law a pediatric surgeon cannot operate on adults and a conventional surgeon cannot operate on children. But in rural practice all such “rules” are overruled by practical necessities. Clearly, there are too many surgeons and sub-specialists concentrating in big towns and

large centers and a relatively underserved vast rural areas—but isn't this the situation in other large countries like the USA or Australia? Table 1 shows the structure of surgical specialties in Russia.

Major challenges

The Minister of Health M.Zurabov said in 2007: “Russia is on the threshold of health care system reform and we must begin it with fundamental improvement of education quality”. And the list of items needing improvement would have to include:

- Reduce the number of medical schools and introduce stricter admission criteria
- Introduce stricter selection of candidates to surgical residencies
- Prolong duration of general surgical residency to 4-5 years
- Introduce uniform-standards for residency program including accreditation
- Introduce “real” uniform system of “board examination”
- Establish uniform-standards and accreditation for post residency fellowships in sub-specializations
- Motivate post residency continuous medical education
- Motivate talented surgeons to become educators and teach them how to educate
- Create an independent surgical association or “college” or “board” to steer and supervise all above to

In addition:

- Teach “international surgery”—not only “local surgery”
- Make English language obligatory for certification
- “Refresh” the style, format and contents of text books
- Encourage access and usage of international surgical journals and texts
- Provide grants for talented young residents and surgeons to allow periods of international education
- Establish “national surgical standards or guidelines of treatment
- Increase the salary of residents and surgeons

Obviously, all such changes would need some change of mentality, of the pupils and their teachers.

References

1. Adult mortality in Russia. <http://www.lshtm.ac.uk/ecohost/projects/mortality-russia.htm#healthcare>
2. Russian Service of State Statistics. http://www.gks.ru/free_doc/2007/b07_11/05-08.htm

Table 1: Surgical Specialties in Russia

University	Main specialty	Specialty, that need additional education
<i>lechebnoe delo</i> (general medical practice)	(General) Surgery	Coloproctology Neurosurgery Cardiovascular Surgery Thoracic Surgery Transfusiology Craniofacial Surgery Endoscopy
	Urology	
Pediatrics	Pediatric Surgery	Pediatric Oncology