

The Present And The Future Of Regional Medical Care In Virumaa

Geographical And Social Position Of Virumaa

Geographically speaking, the Virumaa region really consists really of two counties – East and West Virumaa. It lies in the north-east of Estonia, bordering Russia. There are approximately 250,000 inhabitants in the region, with the highest median age in Estonia. Historically during the soviet regime, the region was of great importance as a mining and chemical plants region; the economic importance of the mining industry has now diminished. During the past few years, investments have been made in the region in the chemical industry and logistics. Unemployment in the region is still high, and as the result of previous migration policies it is difficult for investors to find local qualified personnel. So a remarkable proportion of executives are imported from other parts of the country, and they work as guest-workers.

The region's infrastructure is poor. Schools and hospitals lack qualified staff. Most of the inhabitants are not Estonian speaking and not really willing to learn. The region has the highest rates of HIV and AIDS in Estonia. East-Virumaa has over 30,000 inhabitants over the age of 65 years, and this group is expected to grow at a rate of 2,5 % per year. It is well known that an ageing society has great implications for the medical system.

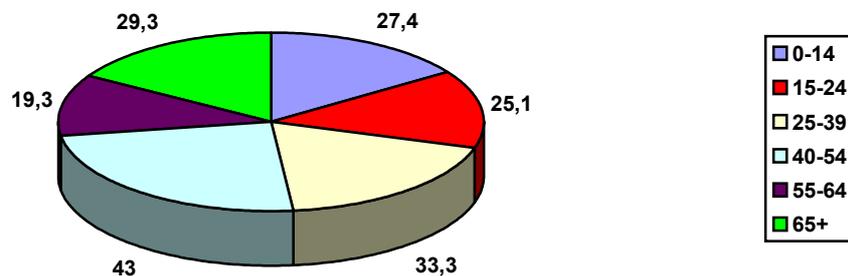


Figure 1: Distribution of inhabitants of East-Viru in age groups (in thousands)

The most important cities of the region are the town complex of Kohtla-Järve and Jõhvi, the border city Narva, rapidly growing Sillamäe and the towns of West-Virumaa: Rakvere and Kunda. The administrative, cultural and commercial center in the region is the complex of Jõhvi and Kohtla-Järve, as it is regarded as one of the four pillars of Estonian political structure. All major state structures (military, police, rescue etc) are based on these four centers. Therefore, without even considering the economic situation, the importance of Kohtla-Järve will significantly increase during the next couple of years.

Present Healthcare Network

The leading role in the healthcare of this region is theoretically played by East-Viru Central Hospital, which was formed in 2003 in Kohtla-Järve on the basis of Kohtla-Järve Hospital (Kohtla-Järve Haigla), Puru Hospital (Puru Haigla), Kohtla-Järve TBC Hospital (Kohtla-Järve Kopsuhaigla) and Jõhvi Children Hospital (Jõhvi Lastehaigla). The new hospital's leading role is not yet very clearly seen at the moment, as the freshly founded institution has not achieved complete synergy of all of its components yet. There are also working community hospitals in Narva and Rakvere, as well as Ahtme Psychiatric Hospital and the former Sillamäe Hospital

which is currently providing daycare and nursing care. The former Kiviõli Hospital provides only nursing care.

There are several primary care facilities and separate family physicians all over the county. The problem with the family physicians is that they are mostly concentrated in big family care centers and therefore in the countryside it may be a considerable distance to reach the family doctor. One possible idea for future development would be to open additional family practices in the countryside. At present both Narva and Rakvere Hospital compete strongly with East-Viru Central Hospital in the specialized medicine market. Just political decisions and naming of one hospital as 'central' does not suddenly change anything. East-Viru Central Hospital is making great efforts to change from a specialized medical care provider to a knowledge and information centre in the region. For this reason, an agreement was made with Tartu University Clinic to allow exchange of information and specialists, and training of local doctors by the real authorities in their field.

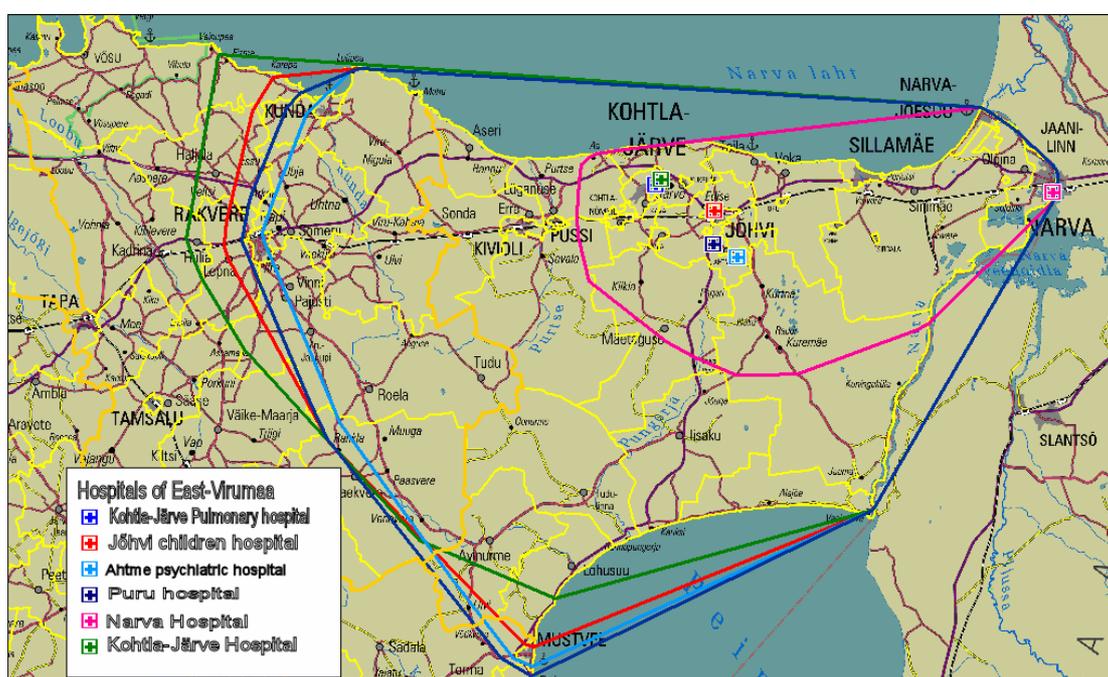


Figure 2: Hospitals in East-Virumaa and their catchment area

East-Viru Central Hospital is a base for postgraduate training of doctors and residents, and also graduate training base for nurses as a base from Kohtla-Järve Medical School. Since Estonian medicine is 100% financed by public insurance, the insurance company has a significant opportunity to influence the development of medicine.

One of the biggest problems at the moment is the presence of several hospitals, which all are willing to give specialist aid, but in the conditions of limited funding, find that resources are spread and not concentrated as they should be. A political decision has been taken that Narva Hospital and Rakvere Hospital should be turned into community hospitals with limited specialist care. So in the very near future we should see a concentration of funding into the central hospital, which should result in concentration of better equipment, technology and knowledge. It means we are on our way from smaller units to one administrative organization for about 250,000 people.

At the moment East-Viru Central Hospital is giving inpatient specialized treatment in three separate buildings with the longest distance between two buildings of 15 km. This makes it complicated to ensure collaboration between different specialties, to concentrate sophisticated and expensive equipment in one place, and to move to a firm, universal technology platform.

The present hospital buildings are in bad shape, built in the Soviet period and unsuitable for the use as a modern hospital. Poor collaboration between the central hospital and family physicians is standing in a way of integration of primary care and special care in outpatient services, which should result in creating planned care pathways instead of patient episodes. The common task of the healthcare network development plan is to guarantee the availability of modern medical services to all people, and to maintain and improve the level of medical services in the region.

Developing The Healthcare Network

We are aware that the present situation of the East-Virumaa healthcare network is not satisfactory. Our first task is not to let the gap with the development of the two bigger centers grow.

We have to find our own ways of developing the local healthcare network, with limited human resources and without the prospect that the situation with specialists will improve in the near future. It is essential that the two big Estonian centers succeed in collaborating, in sharing the same technology platform, and in communicating and sharing experiences. Furthermore, it is vital to ensure the building of a new hospital in the very near future. To remain technologically competitive, we have sometimes to make investments for the future beyond the resources of today.

From Smaller Hospitals To A Central Hospital, From A Central Hospital To A Local Knowledge Center

We have been giving a try to determine the area of influence of East-Viru Central hospital in the cases of the best and worst scenarios. We have tried to estimate the need for hospital space and medical personnel, to provide the basis for planning a new hospital complex.

Before beginning the real planning of a new complex, the following questions have to be answered:

- What is the projected need for inpatient, outpatient, daycare and nursing care during the coming years?
- What floor area in East-Viru Central Hospital will be needed according to this projection?
- What will be the requirements for doctors, nurses and other staff?
- Prior to starting construction, how should we plan the optimal placement of personnel according to the siting of different services in different locations?

The functional development plan of East-Viru Central Hospital has the a clear aim of building a hospital complex without the present problems with logistics and communications. There have been three different versions:

- Building a new hospital complex, connected to the former Kohtla-Järve Hospital
- Building a new hospital complex, connected to the former Puru Hospital
- Building a totally new hospital complex (so called "green field" development).

After a long consultation process, a decision has been made to build an additional complex, connected with the former Puru Hospital. This is because the Puru Hospital buildings, as well as the municipality's infrastructure, are in much better shape than Kohtla-Järve. The planning process foresees that the new elements of the hospital should be built in steps, with each step allowing the previous ones to function undisturbed. The architectural solution should provide flexibility, so that wards as currently planned wards can easily be converted into intensive care, daycare and operating rooms. At present the social situation of the region demands a greater amount of ward space than would be normal, as average local social and housing

conditions are quite poor, so patients sometimes need to stay in a ward some days longer than would otherwise be the case. This explains the slightly longer average hospital stay of East Virumaa in comparison with the other regions of Estonia. However, the region is at present rapidly developing and as a result we are going to need much less ward space in the very near future.

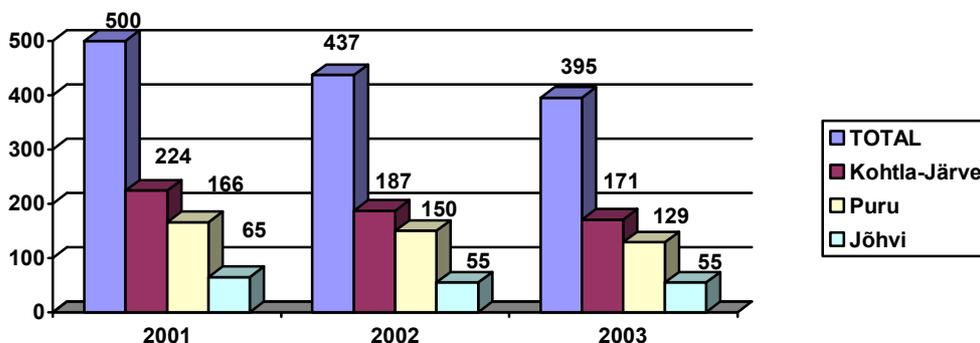


Diagram 1: The number of hospital beds prior to formation of a central hospital

In planning of the need for hospital beds we have taken into consideration the following aspects:

- Concentration of treatment beds creates a synergy between disciplines and results in a reduced need for hospital beds.
- Early start of rehabilitation, immediately following active treatment
- Fewer days needed for successful treatment, thanks to more intensive treatment and investigation and also usage of modern technologies. Healthcare is more specialized and skill and resource intensive
- Increase in outpatient treatment including day treatment and day surgery. Inpatient care is replaced by day patient and outpatient care
- Better collaboration with family physicians, so that care episodes become care processes with multiple care providers
- Development of a geriatric and nursing home system
- Self-improvement of the local infrastructure, which allows the patient to return home early and safely.

Considering the above, we have planned to reduce the number of active treatment beds from 395 to 269 until 2015.

As for considerations of competition with other hospitals in the healthcare market, the easiest step has already been carried out, since a political decision has been made. As a natural conclusion, the organic takeover for the patients of smaller towns, such as Kiviõli, Kunda and Sillamäe should be made. The only logical way forward is to give as much support to the local family practitioners and healthcare centers as possible, and to make them understand the necessity of working in collaboration with the central hospital. As Sillamäe has historically been working with Narva, it will take some time to develop new habits and traditions among family practitioners.

The situation is different with the community hospitals of Narva and Rakvere. Historically all county hospitals were on one level, with Narva mainly connected with Tartu University Hospital and Rakvere with the North Estonian Regional Hospital in Tallinn. The situation with Narva can be solved quite easily, as there is no direct road connection from Narva to Tartu, and the patient pathway goes through Kohtla-Järve. It takes about 45 minutes from Narva to Kohtla-Järve and 1 hour 45 minutes from Kohtla-Järve to Tallinn or Tartu. From Rakvere the travelling time to Tallinn is about 1 hour and to Kohtla-Järve about 45 minutes, so there has to be a very good reason for the patient to travel in the opposite direction from the capital. One possible

solution is not to take as the target of service a level comparable with the major hospitals in Tallinn and Tartu.

We now come to the question of technologies in the future East-Viru Central Hospital. There is a dichotomy between the expectations of society (also the medical personnel) and real economic possibilities. A decision has been made to plan and build the new facilities such that they won't hinder progress in this area. Of course, as is well known, new possibilities in medicine increase without limits and you can never afford everything. From the side of architecture and building we are planning to be ready for a wireless, paperless and filmless hospital. Future hospitals should be technologically advanced and flexible. At the moment we are making preparations for a change to a paperless patient card and history. The present situation does not favor the change, because a large proportion of medical personnel are of not Estonian origin and therefore not fluent in the Estonian language. For legal reasons (and a simple reason, that the Russian language does not use Latin alphabet), documentation in Russian cannot be allowed.

From here, we return to another difficult question, that of personnel. The lack of qualified doctors is a big problem all over whole Europe. In Eastern Europe the problem is even sharper due to the large number of young doctors who leave their home country after graduating. Young people grow roots abroad and never return. This problem can be partially solved by raising the salaries of young doctors and making the social benefits package more attractive for them. Certainly a hospital in bad shape, under equipped and in an underdeveloped region does not make the package more attractive. Because of the lack of doctors and nurses, also the rising pressure from the side of labor market of other Estonian centers as well as other EU countries, we have to plan a significant salary raise into the budget, to at least keep the present situation stable. On its own, the hospital can't change the general status of the region very much, but it is an important part of infrastructure that will have direct influence on primary medical care as a teaching and consulting institution. And of course, a well built, well equipped hospital gives quite a lot of social prestige to the neighborhood. At the moment quite many executives come to East-Virumaa as guest workers, as the quality of the local infrastructure does not satisfy their need or expectations. The result is that they pay taxes and spend money in other counties. If the development of local infrastructure begins with a new modern and well-equipped hospital, there's hope that other common facilities will follow and we all believe, that good medical service is a fundamental part of a healthy community.

Information and communication technology

Last but not least, a modern healthcare system cannot adequately work without a good network for communication and information exchange purposes. The good condition of computer networks in Estonia provides some balance to the problem of bad logistics and big geographical distances. For example, the development of a central, all Estonia covering PACS gives the East-Viru radiologists a good chance to consult CT images with their colleagues in Tartu University almost in real time.

Having said this, good networks demand adequate technology at both ends and this is not always so. We think that changing from traditional X-ray, to digital imaging; from PACS, to a multimedia archive; from a bunch of cables, to a wireless network, will give us a good basis for moving to a universal technology platform. In this way every doctor in the region can immediately have the information he needs. It gives us a possibility to build up a real smart healthcare network in our county.

Conclusion

There is a difference in the level of healthcare services and networks between central and smaller regions everywhere. Our goal is to keep the gap to the minimum by working on the same technology platform and infrastructure level, sharing competence and becoming an irreplaceable part of the national healthcare network. The common task has to be winning and keeping of the trust of the local population. By providing modern aid, healthcare networks add value to the local environment.