REPORT

Proposals for improving cross-border cooperation between Valka (Latvia) and Valga (Estonia) regions in order to ensure better access to health care services for the residents of the Valka region

Research is carried out by the researchers of Riga Stradins university (Latvia) within the project supported by the Association of European Border Regions B-Solutions initiative. B-Solutions is a project financed by the European Commission DG REGIO

Riga – Valka - Valga
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Content

Introduction, scope of the research, materials and methods

Valka is a city in Northern Vidzeme, the administrative center of Valka county in Latvia. In the north, Valka borders the Republic of Estonia and its twin city Valga. In 2020, Valka had 4,527 inhabitants.

The county consists of the city of Valka and the territories of the parishes of Ergėme, Kārķu, Valka, Vijciema and Zvārtava. The administrative center of the county is the city of Valka. Valka county is located 170 km from Riga, the capital of the Republic of Latvia and 50 km from Valmiera, a development center of national importance, where the nearest multi-profile emergency treatment facility "Vidzeme Hospital" is located on the territory of Latvia.

Latvian citizens according to the law are universally covered for a broad range of state paid health care services. Health expenditure per capita in Latvia has been increasing over the last decade, but remains far below the EU average, consisting EUR 2 114 in 2021. On average 27% of total health expenditure is paid out of pocket by households. The public share of funding rose to 69.5 % in 2021, mainly due to additional spending during the COVID-19 pandemic[1]. Geographical access to services, especially in remote and close to borders areas has been highlighted as one of the obstacles for timely accessibility of services. Relative poverty rate in Latvia, which is significantly higher than the average level in the EU countries (22.5% vs 16.5%), highlights the need to pay special attention to the opportunity for the residents of the most vulnerable social groups to receive the health care they need without unnecessary administrative barriers.

Although every European citizen, according to Cross-border Directive (2011/24/EU) "On the application of patients' rights in cross-border healthcare" has right to receive necessary health care service also in the neighbouring country, lack of information and problems surrounding the benefits that are available, the conditions required in order to obtain services (for example, pre-authorization), cost sharing, contracting and accreditation (available providers), quality of care, as well as reimbursement under these frameworks can all pose barriers to cross-border access that may not be easy to overcome[2].

Cities of Valka and Valga have developed cross-border cooperation between neighboring regions on both sides of the border in all areas of life between municipalities, non-governmental organizations, and residents. Cooperation is oriented towards permanent long-term activity, therefore formal and informal institutions are formed that coordinate, organize and ensure this activity.

The content of the traditional problems of the border regions of the countries named in the Charter of European Borders and Cross-Border Regions also corresponds to the specific situation of Valka and Valga. What has been established so far shows that the residents of the Valka region receive health care services in the Valka hospital in a very small amount and there are several obstacles to receiving these services on a regular basis.

[1] OECD and WHO, 2023. The State of Health in the EU: Latvia, Country Health Profile, https://www.oecd-ilibrary.org/docserver/bf2b15d6-en.pdf?expires=1706620723&id=id&accname=guest&checksum=9A8CAC724A4C4E71345959BCA0059A62

[2] WHO, 2011. Cross-border health care in the European Union. Mapping and analysing practices and policies. Edited by Matthias Wismar, Willy Palm, Josep Figueras, Kelly Ernst, Ewout van Ginneken.

Scope of the research, materials and methods

The study is carried out within the framework of the European Commission initiative *b-solutions 2.0* : *Solving Cross-Border obstacle:* an initiative to tackle legal and administrative obstacles to cross-border cooperation along EU internal borders, addressing two main objectives:

1) To identify and promote sustainable methods of re-solving cross-border obstacles of a legal and/or administrative nature;
2) To trigger the implementation of already identified solutions to cross-border obstacles.

The aim of the study is to prepare proposals for improving cross-border cooperation between the Valka (Latvia) and Valga (Estonia) regions in order to ensure better access to health care services for the residents of the Valka region, to be used as basis for the development of the cross-border health care *Initiative document*, including:

1) Analysis of health care utilization in the Valka region (Latvia) in general and in the Valga Hospital (Estonia);
2) Assessment of access to health care for residents of the Valka region in general and stratified by different social groups;
3) Assessment of indirect costs associated with suboptimal accessibility of health care services in Valka region.

The research is based on quantitative and qualitative approach, including analysis of the data obtained from the National Health Service and the Centre for Disease Prevention and Control of Latvia on the scope and structure of healthcare services utilized by the Valka region inhabitants, a survey of residents of the Valka region to find out their opinion about obstacles for receiving health care services at the Valga hospital (N=212), two focus group discussions represented by the Valka region residents and family doctors aiming to assess the factors promoting and inhibiting access to health care services in the Valka region in general and particularly at the Valga hospital and expert interviews conducted in the Valga hospital and Valka district municipality.

The methods and data sources of each research task are reflected in table 1.

Table 1. Methods and data sources of the study

No.	Research task	Method	Data sources
1.	Analysis of health care utilization in Valka region	1.1. Description of the structure and health status of the population of Valka region	Official Statistical portal, Latvia
		1.2. Estimation of utilization of health care services by Valka region inhabitants in comparison to the utilization by Latvian population in general (selected health care services for chronic diseases for the period 2018-2022)	Centre for Disease Prevention and Control, Latvia
		1.3. Analysis of utilization of health care services by the Valka region inhabitants at the Valga hospital	National Health Service, Latvia

2.	Assessment of access to health care for residents of the Valka region in general and stratified by different social groups	2.1. A survey of residents of the Valka region (N=212) 2.2. Focus group discussions with the residents and general practitioners of the Valka region 2.3. Experts' interviews with health care service providers at Valka region, Vidzeme hospital and Valga hospital	Population survey Focus groups Experts' interviews
3.	Assessment of indirect costs associated with suboptimal accessibility of health care services in Valka region	1.3. Calculation of additional cost burden for transportation from Valka to Valmiera or Riga, 1.4. Calculation of the cost of time lost due to necessity to travel to Valmiera or Riga 1.5. Calculation of additional CO2 emission, associated with travel	

The study is conducted by researchers of Riga Stradins university in November 2023 - March 2024.

1.Health care utilization in Valka region

The study provides estimation of utilization of health care services by the Valka region inhabitants in comparison to the utilization by Latvian population in general, as well as the amount of service utilization in the Valga hospital. It is important to note that in 2022 *The National Health Service of Latvia* has concluded agreement with the Valga Hospital on ensuring state paid basic health care services (x-ray and ultrasound examinations) for the Valka region inhabitants, which was taken into account for the analysis of service receipt. The impact of the existing agreement on the residents' ability to receive the cross-border health care services was also evaluated in a survey of residents, focus group discussions and expert interviews.

1.1. Description of the structure and health status of the population of the Valka region

The study initially examines the structure and health status of the population of the Valka region, which has an impact on the need and habituation of the spectrum and scope of health care services.

Structure of the population

Population of the Valka region is decreasing, which accounts for 4% from 2018 to 2023. The rate of decrease is higher than the average rate in Latvia - 2,7% during the same period of time. Prevalence of inhabitants at age over 55 years is higher and prevalence of working population is lower than in Latvia as a whole.

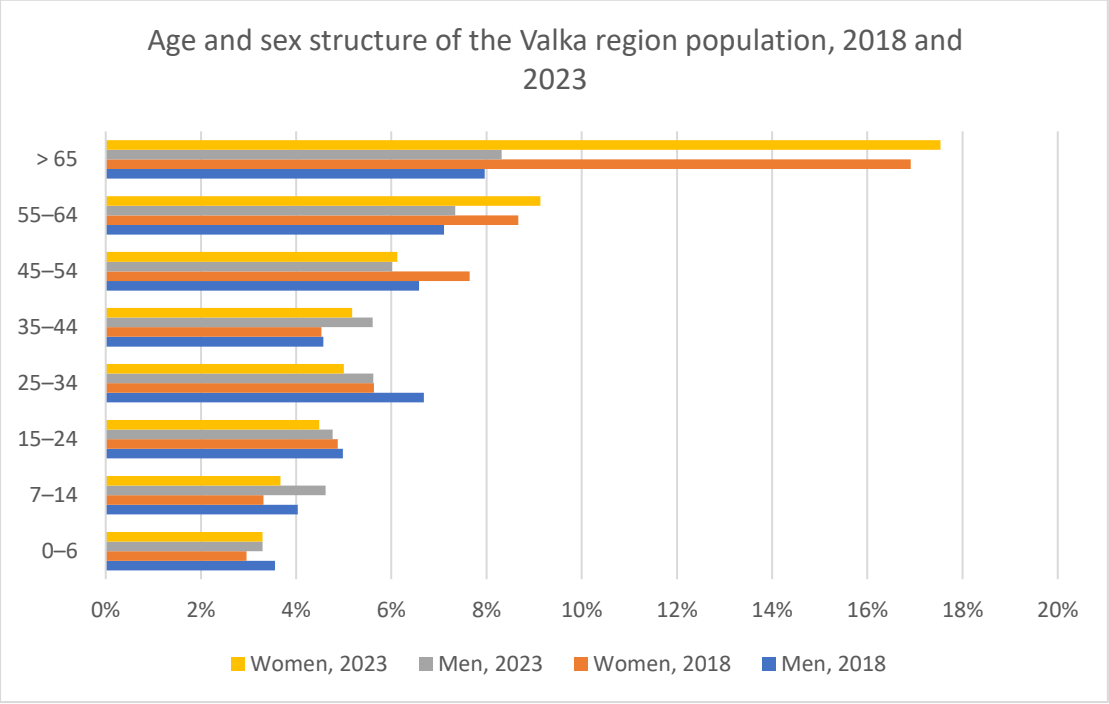

Figure 1. Age and sex structure of the population of Valka region
Source: Official Statistical portal of Latvia.

Health status of the residents of the Valka region

Life expectancy, being valuable on its own, is also an indicator for availability of economic resources for the regional development. **Premature mortality** serves as an integral indicator characterizing the health status of the population and health system performance as it. Indicators of **avoidable mortality** offer a general "starting point" to assess the effectiveness of public health and healthcare systems by the capability to reduce deaths from various diseases and injuries. Avoidable mortality includes both preventable deaths that can be avoided through effective public health and prevention interventions, and treatable deaths that can be avoided through timely and effective healthcare interventions.
The premature mortality is defined as mortality before age 65 expressed per 100 000 population[3].

Premature mortality at age 65 in the Valka region quite significantly exceeds the relevant indicator in the country and amounts to 657 cases in 2022 compared to 449 cases per 100 000 inhabitants in Latvia as a whole (Table 2).

Table 2. Premature mortality in the Valka region and in Latvia (2018-2022)

Region/indicator/year	2018	2019	2020	2021	2022
Valka region					
Deaths at age 0-64	47	27	35	24	37
Premature mortality per 100 000 inhabitants	808	470	615	426	657
Latvia, premature mortality per 100 000 inhabitants	427	402	406	507	449

Source: CDPC, Latvia, 2023

Although premature mortality has decreased since 2018, the indicator can still be considered as high.

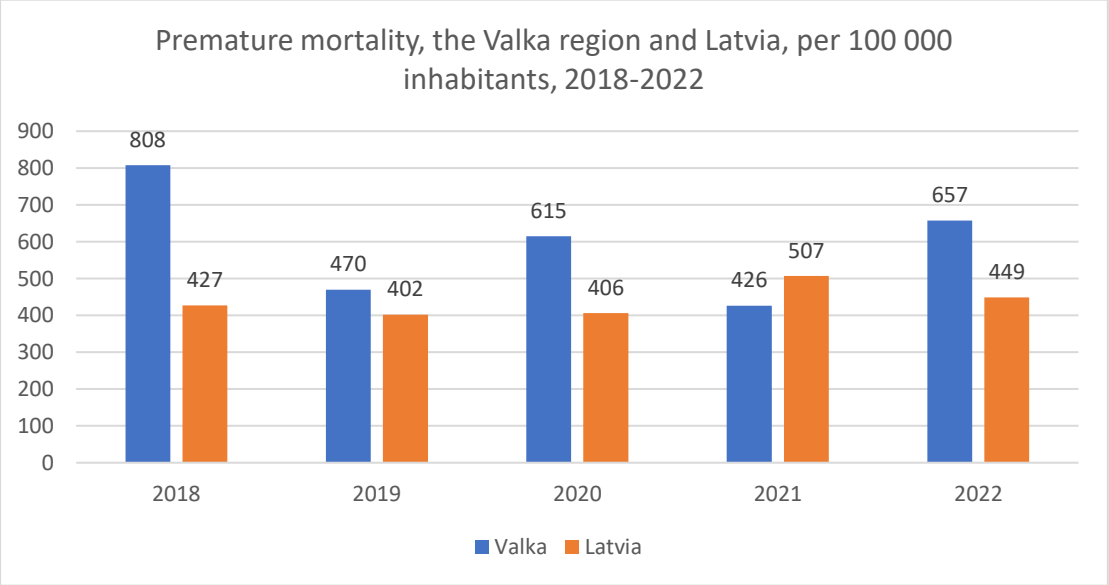

Figure 2. Premature mortality, Valka region and Latvia, per 100000 inh., 2018-2022

[3] OECD, 2023. Health at glance.

Source: CDPC, Latvia, 2023

The five-year (2018-2022) average premature mortality relative risk index of the Valka region is 1.38 compared to Latvia as a whole. At the same time, it should be noted that changes in the small absolute numbers of mortality in the Valka region (from 47 in 2018 to 21 in 2015) lead to significant differences in relative indicator and should be taken with caution.

Table 3. Relative risk of premature mortality, the Valka region and Latvia, 2018-2022

Year	2018	2019	2020	2021	2022
Relative risk of premature mortality in Valka region compared to Latvia	1,9	1,2	1,5	0,8	1,5

Source: CDPC, Latvia, 2023

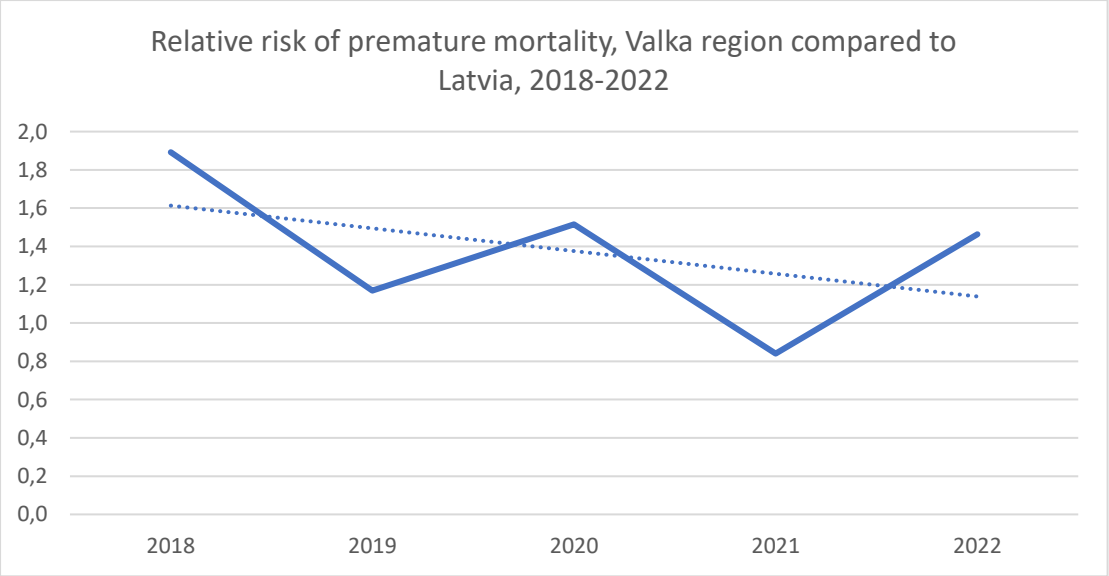

Figure 3. Relative risk of premature mortality, Valka region and Latvia, 2018-2022

Source: CDPC, Latvia, 2023

However, it is evident that the relative risk of premature mortality in the Valka region compared to Latvia as a whole is slightly decreasing: varying from 1,9 in 2018, 0,8 in 2031 and 1,5 in 2022.

1.2. Analysis of health care utilization in Valka region

As health care accessibility is an important factor connected with premature mortality, analysis of primary and secondary health care service utilization was performed. Relative difference in the utilization of state paid health care services in Valka region comparing to Latvia as a whole for selected chronic diseases was calculated.

Some of the most typical chronic diseases were selected for analysis of health care utilization, which is related to the aging population of the region and the prevalence of related chronic diseases. Selected diagnoses include: C50 - Malignant neoplasm of breast, C61 - Malignant neoplasm of prostate, E11 - Type 2 diabetes mellitus, and J45 – Asthma.

The services for analysis were divided into 2 groups: 1) outpatient and 2) inpatient services.

The following indicators were analysed for each of the diseases for the period from 2018 to 2022:

1) Outpatient services
   - Number of visits to general practitioners (GPs)
   - Number of visits to specialists (secondary health care episodes)
   - Number of outpatient health care episodes;
2) Inpatient services
   - Number of inpatient health care episodes;

To compare results, number of health care episodes were calculated per one inhabitant of Valka region and Latvia respectively.

Utilisation of outpatient services in Valka region

Table 4. Number of state paid visits to health care specialists, selected diagnoses, per one inhabitant, Valka region and Latvia, 2018-2022

Diagnose / Indicator	2018	2019	2020	2021	2022
Diagnose C50					
Valka region					
Number of visits to GP per inhabitant	0,41	0,34	0,30	0,24	0,66
Number of visits to specialists per inhabitant	1,41	1,26	1,26	1,71	1,86
In total	1,83	1,65	1,56	1,95	2,60
Latvia					
Number of visits to GP per inhabitant	0,70	0,74	0,67	0,61	0,72
Number of visits to specialists per inhabitant	1,53	1,60	1,44	1,48	1,62
In total	2,27	2,38	2,14	2,12	2,37
Ratio: number of visits per person in Valka region/number of visits per person in Latvia					
GP	0,58	0,46	0,45	0,39	0,92
Specialists	0,92	0,79	0,88	1,16	1,14
In total	**0,81**	**0,69**	**0,73**	**0,92**	**1,10**
Diagnose C61	2018	2019	2020	2021	2022
Valka region					
Number of visits to GP per inhabitant	1,04	0,47	0,82	0,82	1,47
Number of visits to specialists per inhabitant	1,09	1,00	1,08	1,34	1,79
In total	2,21	1,48	1,91	2,16	3,38

Latvia					
Number of visits to GP per inhabitant	0,62	0,65	0,60	0,52	0,58
Number of visits to specialists per inhabitant	0,94	1,02	1,00	0,98	1,04
In total	1,61	1,72	1,65	1,54	1,67
Ratio: number of visits per inhabitant in Valka region/number of visits per inhabitant in Latvia					
GP	1,68	0,72	1,37	1,57	2,52
Specialists	1,16	0,98	1,08	1,38	1,71
In total	**1,38**	**0,86**	**1,16**	**1,40**	**2,02**
Diagnose E11	2018	2019	2020	2021	2022
Valka region					
Number of visits to GP per inhabitant	11,51	10,45	7,13	5,77	6,94
Number of visits to specialists per inhabitant	1,98	1,72	1,77	1,84	2,28
In total	13,80	12,58	9,25	7,85	9,34
Latvia					
Number of visits to GP per inhabitant	5,12	5,00	3,95	3,46	3,83
Number of visits to specialists per inhabitant	4,43	4,44	3,81	3,75	3,93
In total	10,15	10,07	8,36	7,80	8,15
Ratio: Number of visits per person in Valka region/number of visits per person in Latvia					
GP	2,25	2,09	1,80	1,67	1,81
Specialists	0,45	0,39	0,46	0,49	0,58
In total	**1,36**	**1,25**	**1,11**	**1,01**	**1,15**
Diagnose J45	2018	2019	2020	2021	2022
Valka region					
Number of visits to GP per inhabitant	4,04	3,81	3,46	2,57	3,00
Number of visits to specialists per inhabitant	1,20	1,70	0,95	0,67	0,73
In total	5,45	5,68	4,52	3,42	3,94
Latvia					
Number of visits to GP per inhabitant	3,38	3,11	2,53	1,99	2,15
Number of visits to specialists per inhabitant	2,07	1,98	1,49	1,43	1,56
In total	5,82	5,43	4,26	3,65	3,84
Ratio: Number of visits per inhabitant **in Valka region/number of visits per** inhabitant **in Latvia**					
GP	1,20	1,23	1,37	1,29	1,40
Specialists	0,58	0,86	0,64	0,47	0,47
In total	**0,94**	**1,05**	**1,06**	**0,94**	**1,02**

Source: CDPC, Latvia, 2023

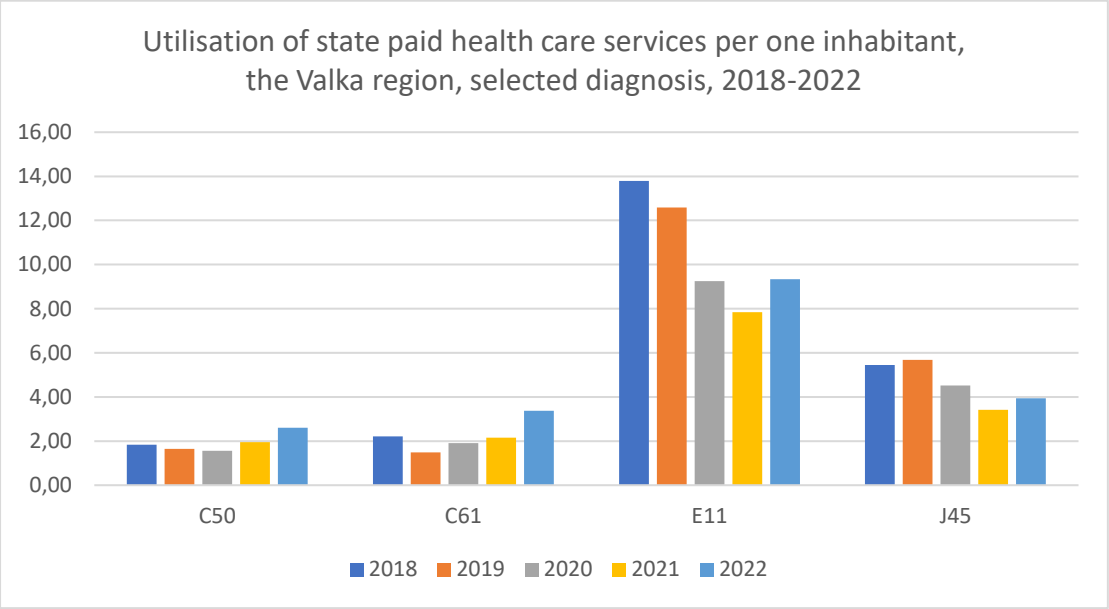

Figure 4. Utilisation of state paid health care services per one inhabitant, the Valka region, 2018-2022
Source: CDPC, Latvia, 2023

Utilization of state paid health care services for selected diagnoses in Valka region has been slightly increasing for diagnoses C50 and C61, but decreasing for diagnoses E11 and J45 in the period from 2018 to 2022.
Utilisation of state paid outpatient health care services in Valka region compared to Latvia in 2022 is close to or higher for all selected diagnoses (rate is above 1).
Trend of utilisation shows increase in utilisation for diagnoses C50 and C61, but decrease for diagnose E11, and no changes for the diagnose J45.
At the same time, it is evident the ratio of services provided by GPs is much higher than services provided by specialists. For diagnose E11 the GP service ratio is 1,81, but specialist care episodes – 0,58 compared to Latvia as a whole. For diagnose J45 GP service ratio is 1,40, but specialist care episodes – 0,47 compared to Latvia as a whole.
Annual changes in the rate of utilization of total amount of state paid services for selected diagnoses (visits to GPs and outpatient specialists) in the Valka region comparing to Latvia are reflected in the graph below.

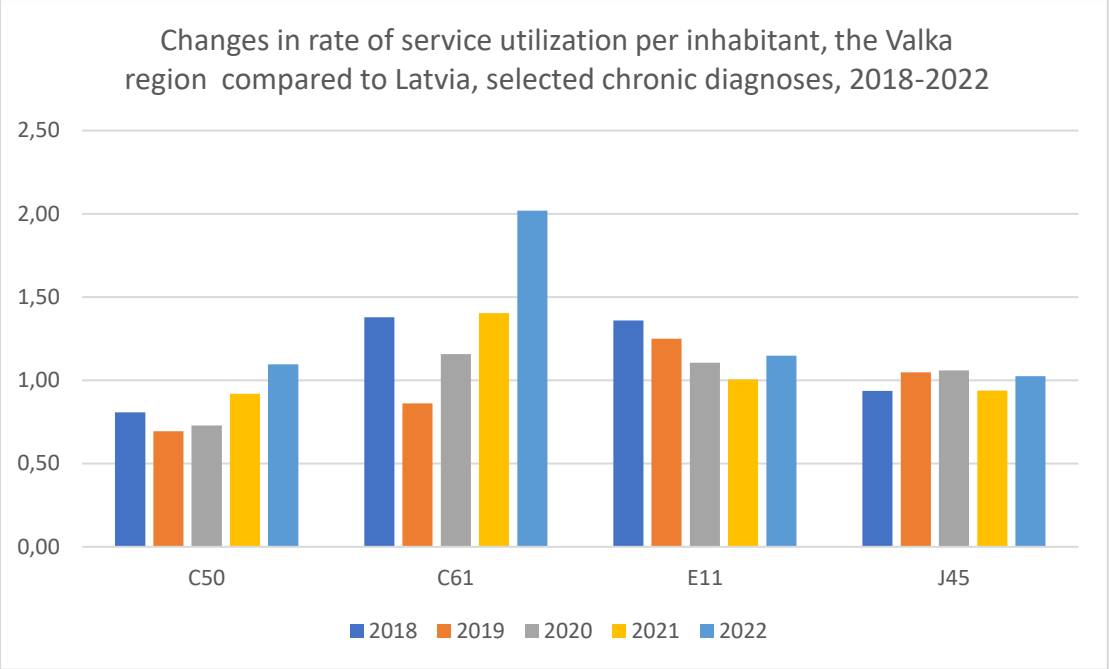

Figure 5. Ratio of service utilization per one inhabitant, the Valka region and Latvia, selected chronic diseases, 2018-2022
Source: CDPC, Latvia, 2023

As can be seen, the use of health care services for oncological diseases has increased, which can indicate the incidence of these diseases.

Utilisation of inpatient services in Valka region

Utilisation of state paid inpatient services in Valka region compared to Latvia in 2022 is higher for diagnoses C50, C61 and J45 and lower for diagnose E11. Trend of utilisation shows increase in utilisation for diagnoses C50 and C61, but decrease for diagnose E11, and no changes for the diagnose J45.

Table 4. Number of inpatient episodes, per 100 inhabitant, selected diagnoses, Valka region and Latvia, 2018-2022

Indicator	2018	2019	2020	2021	2022
Valka region					
C50	0,17	0,14	0,13	0,13	0,29
C61	0,10	0,03	0,17	0,13	0,16
E11	0,17	0,12	0,08	0,05	0,05
J45	0,09	0,08	0,05	0,09	0,07
Latvia					
C50	0,12	0,15	0,13	0,12	0,14
C61	0,08	0,09	0,08	0,08	0,09
E11	0,08	0,08	0,07	0,06	0,08
J45	0,12	0,11	0,07	0,04	0,06

Ratio: number of inpatient episodes in Valka region/number of inpatient episodes in Latvia					
C50	1,36	0,99	1,02	1,08	2,13
C61	1,24	0,28	2,02	1,74	1,80
E11	2,12	1,40	1,11	0,84	0,68
J45	0,77	0,70	0,77	2,44	1,04

Source: CDPC, Latvia, 2023

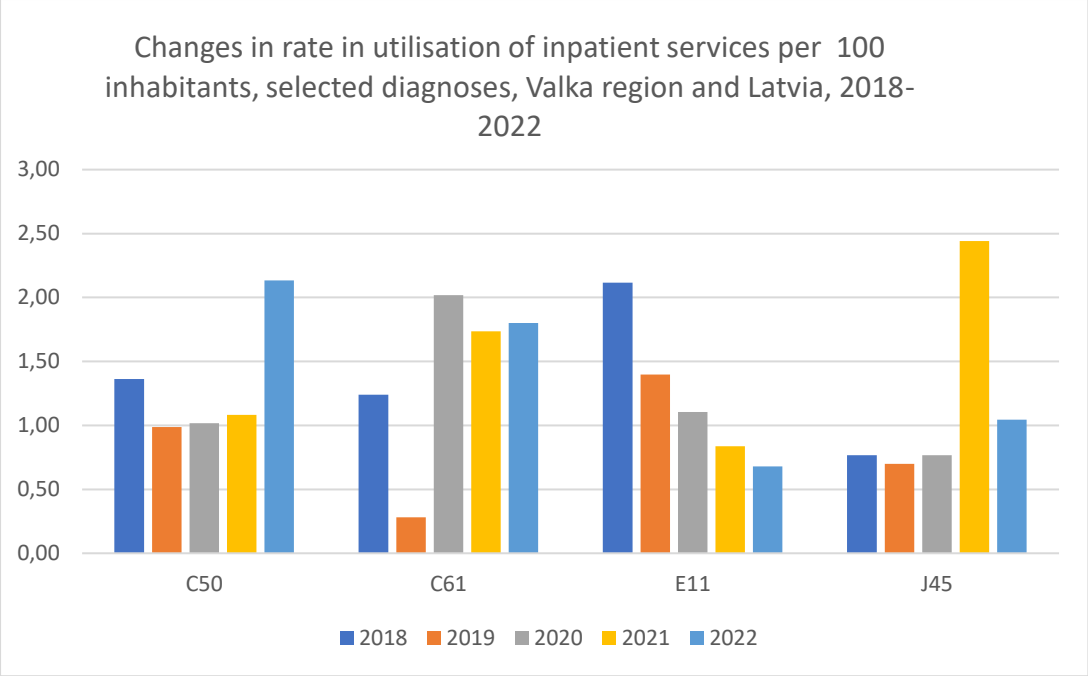

Figure 6. Changes in the rate of utilization of inpatient services.
Source: CDPC, Latvia, 2023

As can be seen, the use of health care for oncological diseases has increased, which may indicate an increase in the incidence of these diseases.
In the group of studied diseases, the total volumes of health care services are not particularly different from Latvia as a whole, however, the situation indicates negative structural trend: access to the ambulatory specialist care tends to be limited and inpatient services in certain disease groups are unnecessarily high (C50, J45).

1.3. Analysis of utilization of health care services at Valga hospital by Valka region inhabitants

The analysis of the Valga hospital services received by residents of Valka region includes information about x-ray examinations and USG examinations under the scope of concluded agreement by the National Health Service, Latvia (NHS) and the Valga City Hospital in March 2022 being in force until 30th June 2026.

The agreement states that the Valga hospital undertakes to ensure x-ray and ultrasound examinations for the residents of Valka region, afterwards placing the image of the examination on a data carrier (USB stick) issued to the patient. In turn, the NHS transfers funding for the x-ray and ultrasound (USG) examinations to the Valga hospital according to the healthcare service rates effective in Estonia

Data for analysis were obtained from the NHS for the period of years 2022 and 2023.

In general, the analysis shows that in 2023 there is a significant increase (255%) in the number of examinations received by residents of the Valka region in the Valka hospital justifying the necessity of the cross- border services.

In total there were 143 X-ray examinations provided by the Valga hospital for the Valka region inhabitants in 2022, which increased to 365 in 2023. Majority of the examinations relate to the Chest X-ray examination.

Table 5. Number of X-ray examinations provided by the Valga hospital to the Valka region inhabitants, 2022, 2023 and January-February 2024.

No.	**Examination**	**Examinations conducted in 2022**	**Examinations conducted in 2023**	**Examinations conducted in 2024 (Jan-Feb)**	**In total**
1	Skull X-ray (one projection)	8	16	3	**27**
2	Head X-ray (two projections)	0	3	0	**3**
3	Chest X-ray (one projection)	53	121	24	**198**
4	Chest X-ray (two projections)	7	18	6	**31**
5	Spine X-ray (one projection)	1	2	1	**4**
6	Spine X-ray (two projections)	12	62	11	**85**
7	Spine X-ray (each consecutive projection)	12	22	4	**38**
8	X-ray of the small pelcis (one projection)	3	0	0	**3**
9	X-ray of the upper extremities or joints (one projection)	0	8	0	**8**
10	X-ray of the upper extremities (two projections)	13	61	6	**80**
11	X-ray of the upper extremities (each consecutive projection)	0	9	2	**11**
12	X-ray of the lower extremities (one projection)	4	10	1	**15**
13	X-ray of the lower extremities (two projections)	19	72	12	**103**
14	X-ray of the lower extremities (each consecutive projection)	11	47	4	**62**
	In total	**143**	**452**	**74**	**669**

A similar situation applies to the USG examinations: for almost all USG examination types the number of examinations provided has increased, amounting to a 367% increase in services in 2023. There were 132 USG examinations provided in 2022, the number has more than tripled resulting in 485 examinations in 2023. Almost 40% of examinations relate to the USG of the abdominal cavity and the small pelvis.

Table 6. Number of USG services provided by the Valga hospital to the Valka region inhabitants, 2022, 2023 and January-February 2024.

No.	**Examination**	**Examinations conducted in 2022**	**Examinations conducted in 2023**	**Examinations conducted in 2024 (Jan-Feb)**	**In total**
1	USG of the arteries in one part of the body	4	27	0	**31**
2	USG of the veins in one part of the body	0	13	1	**14**
3	USG of the arteries and veins in one part of the body	0	87	10	**97**
4	USG of the joints in one part of the body	13	51	11	**75**
5	USG of the soft tissue in one part of the body	22	46	2	**70**
6	USG of the thyroid gland	15	59	5	**79**
7	USG of one breast	22	22	0	**44**
8	USG of the abdominal cavity and the small pelvis	55	189	31	**275**
9	USG of the abdominal cavity	1	1	0	**2**
10	USG of the small pelvis	1	0	0	**1**
11	USG of the bladder	4	10	2	**16**
	In total	**137**	**505**	**62**	**704**

The data clearly shows that there is an increasing demand by the Valka region inhabitants to use the X-ray and USG services in Valga hospital, thus indicating the need to extend the existing contract between NHS and the Valga hospital, which ensures the accessibility of these specific services to the Valka region inhabitants in the Valga hospital.

As stated in the agreement between the NHS and the Valga hospital, NHS reimburses the Valga hospital for the x-ray and ultrasound (US) examinations according to the healthcare service rates effective in Estonia. Almost all service rates or tariffs for both services stated in the contract are noticeably higher in Estonia than they are in Latvia.

Table 7. Comparison of X-ray examination service rates (tariffs) in Estonia in and Latvia, 2024

No.	Examination	EE tariff (Eur)	LV tariff (Eur)	**LV tariff/**

				EE tariff (%)
1	Head X-ray (one projection)	17.34	7.41	**42.7%**
2	Head X-ray (two projections)	24.51	13.07	**53.3%**
3	Chest X-ray (one projection)	19.27	7.41	**38.5%**
4	Chest X-ray (two projections)	28.28	13.07	**46.2%**
5	Spine X-ray (one projection)	19.41	7.41	**38.2%**
6	Spine X-ray (two projections)	28.11	13.07	**46.5%**
7	Spine X-ray (three projection)	45.9	21.84	**47.6%**
9	X-ray of the small pelcis (one projection)	19.41	7.41	**38.2%**
10	X-ray of the upper extremities or joints (one projection)	19.41	7.41	**38.2%**
11	X-ray of the upper extremities (two projections)	23.74	13.07	**55.1%**
12	X-ray of the upper extremities (three projections)	41.09	21.84	**53.2%**
13	X-ray of the lower extremities (one projection)	21.13	7.41	**35.1%**
14	X-ray of the lower extremities (two projections)	23.85	13.07	**54.8%**
15	X-ray of the lower extremities (three projections)	41.64	17.27	**41.5%**

Latvian tariffs for various types of x-ray examinations compose about 1/2 of the Estonian tariffs and are lower in the range from 38% to 55%.

Table 8. Comparison of USG examination service rates (tariffs) in Estonia in and Latvia, 2024

No.	Examination	EE tariff (Eur)	LV tariff (Eur)	**LV tariff/ EE tariff (%)**
1	USG of the arteries in one part of the body	24,25	A corresponding tariff was not identified	
2	USG of the veins in one part of the body	24,25	A corresponding tariff was not identified	
3	USG of the arteries and veins in one part of the body	35,12	A corresponding tariff was not identified	
4	USG of the joints in one part of the body	22,91	17,6	**76,8%**
5	USG of the soft tissue in one part of the body	23,04	11,49	**49,9%**
6	USG of the thyroid gland	21,39	11,49	**53,7%**

7	USG of one breast	26,67	11,49	**43,1%**
8	USG of the abdominal cavity and the small pelvis	38,38	8,36	**21,8%**
9	USG of the abdominal cavity	26,44	9,48	**35,9%**
10	USG of the small pelvis	26,44	11,49	**43,5%**
11	USG of the bladder	14,49	5,7	**39,3%**

Latvian and Estonian tariffs for USG examinations differ even more. Latvian tariff for USG of the abdominal cavity and the small pelvis is significantly lower, comprising only 21,8% of the Estonian tariff.

Estonian tariffs indicated in both tables correspond to the ones in force in 2024, and in comparison, with the tariffs in 2019, Estonian tariffs has increased more significantly, than Latvian tariffs. Comparing tariffs in force in 2019 and 2024 it should be noted, that the difference between Latvian and Estonian tariffs in increasing year by year. There are significant differences in tariff setting policy between the two countries: Estonian tariffs are revised according to the real increase in costs annually, while in Latvia tariff revisions do not take place regularly.

Conclusions related to the utilization of health care services by the Valka region residents

- Premature mortality remains higher in Valka region, but positively the difference between Valka region and Latvia as a whole (2018-2022) is decreasing.
- Utilisation of state paid outpatient health care services in Valka region is comparable to Latvia as a whole, but the structure differs as residents use more GP services, but less specialist consultations.
- The situation indicates negative structural trend: access to the ambulatory specialist care tends to be limited and inpatient services in certain disease groups are unnecessarily high.
- Utilization rates justify the need for better and more timely access to outpatient specialist consultations and strengthening primary care (GP) services, which have a high load in the region.
- There is an increasing demand by the Valka region inhabitants to use the X-ray and USG services in Valga hospital, thus indicating the need to extend the existing contract between NHS and the Valga hospital.
- The expansion of the state paid cross-border health care services is currently limited by the different service tariffs, which are approximately 30% higher in Estonia than in Latvia.

2.Assessment of access to health care for residents of the Valka region in general and stratified by different social groups

The situation in the availability of health care in the Valka region, compared to Latvia as a whole, shows several negative trends, but there is also a positive trend towards broader opportunities and use of cross-border healthcare. In further research, a survey of residents of the Valka region, inhabitant and expert focus group discussions were conducted.

2.1. Opinion of the Valka region residents about receiving health care services at the Valga hospital: results of the survey

A population survey "Receiving health care services at Valga Hospital" was conducted with the aim to find out the opinion of the residents of Valka region about the possibilities of receiving health care services and hindering conditions and barriers in the context of cross-border health care.
The survey was distributed in January 2024 both on the social networks of the municipality of Valka region, and also conducted on-site at general practitioners' practices and distributed through the municipality library.

The survey questionnaire consisted of four main parts, which covered the following topics:
1) Residents' desire to receive health care services at the Valga hospital
2) Factors that affect residents' willingness to receive health care services at the Valga hospital, including *accessibility*, *cost* and *health care quality factors.*
3) Services that residents would like to receive in the Valga hospital
4) The main hindering conditions for receiving services at the Valga hospital

In total 212 responses were received, thereof 175 respondents were women and 36 men; 1 individual did not want to indicate gender. The most respondents were in the age group of 51-65 years, followed by 31-50 year old and 66-80 year old respondents.

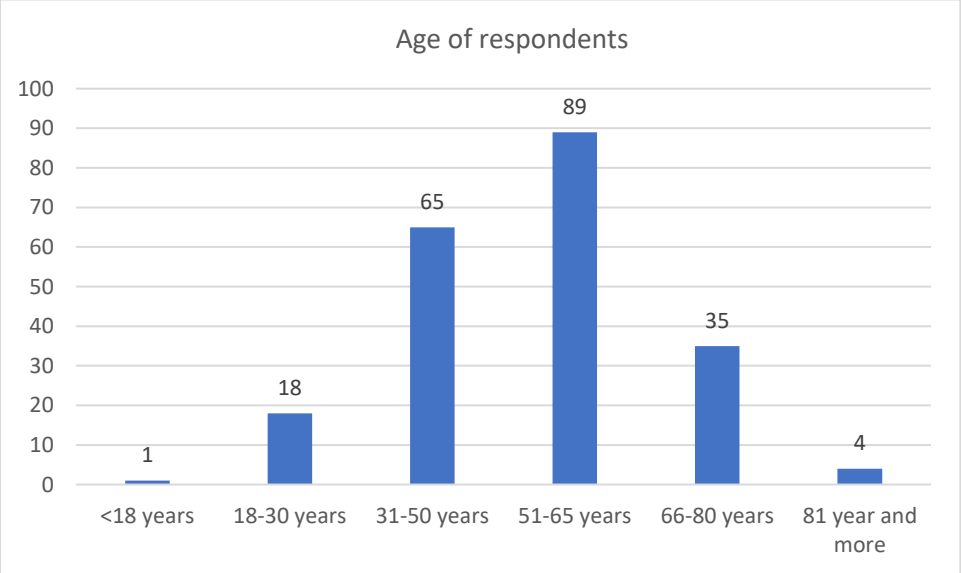

Figure 7. Age of survey respondents

About half (50.4%) of the respondents have chronic diseases that require regular health monitoring. 58% of respondents have had received health care services in Valga hospital within the last 5 years.

Residents' desire to receive health care services at the Valga hospital

Majority of respondents (88,7%) would like to receive health care services at the Valga hospital on regular basis.

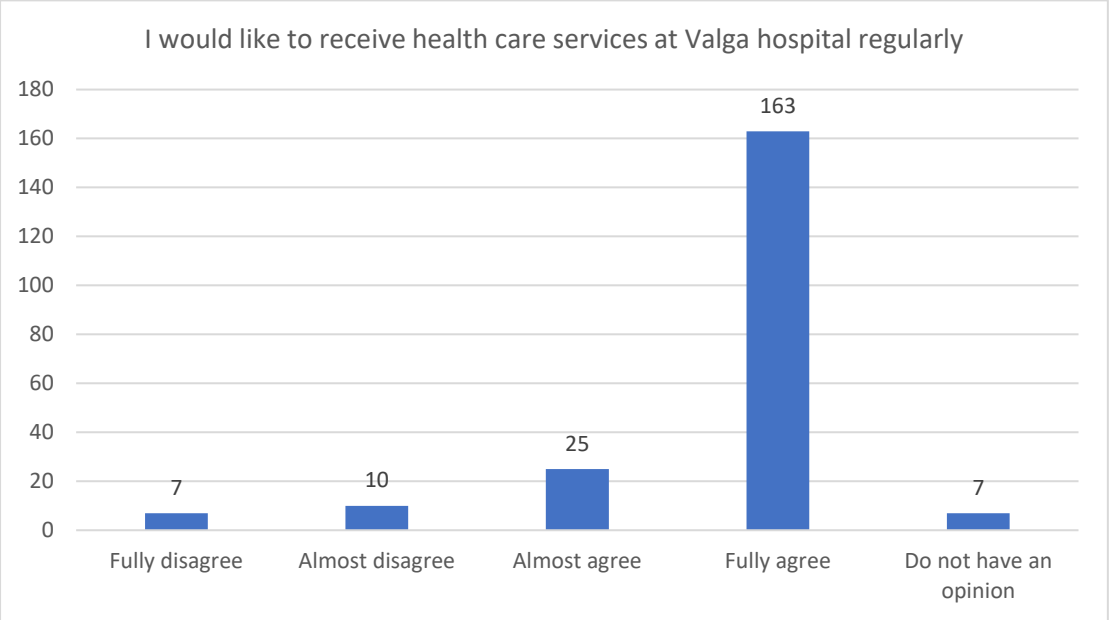

Figure 8. Respondents' willingness to receive services at the Valga hospital.

Majority of respondents (85,8%) mentioned that members of their family would like to receive health care services at the Valga hospital on regular basis.

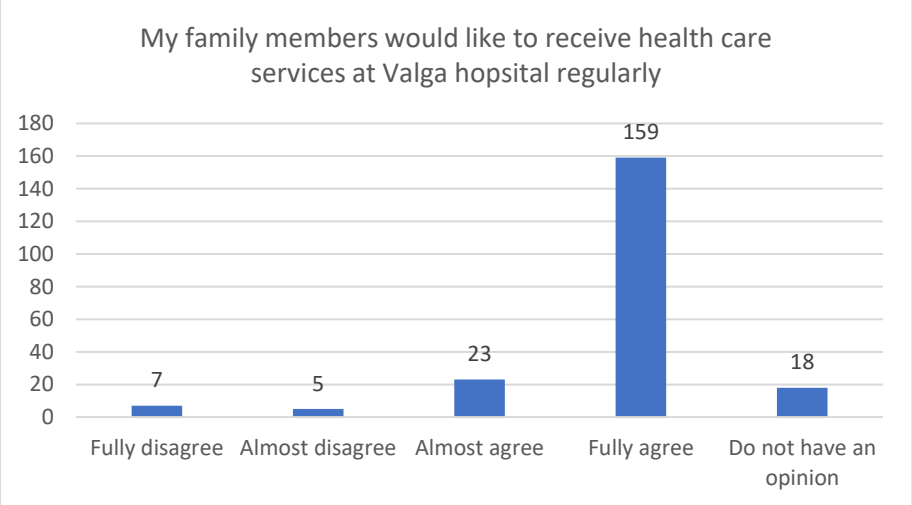

Figure 9. Willingness to receive services at the Valga hospital for family members.

Respondents also mentioned that the Valga hospital is easier to reach than the Vidzeme hospital (91.0%) in Valmiera. In order to receive services at the Vidzeme hospital, it is necessary to be late for work or to apply for a day off from work (85.4%), in addition Valga hospital has shorter waiting lines than Vidzeme hospital (74.1%).

Factors that affect residents' willingness to receive health care services at the Valga hospital

Accessibility factors

Accessibility factors are mentioned as the main ones that affect the willingness of citizens to receive services

Most residents indicated that the Valga hospital is more convenient in terms of location, easier to reach, the problem of transportation is eliminated.

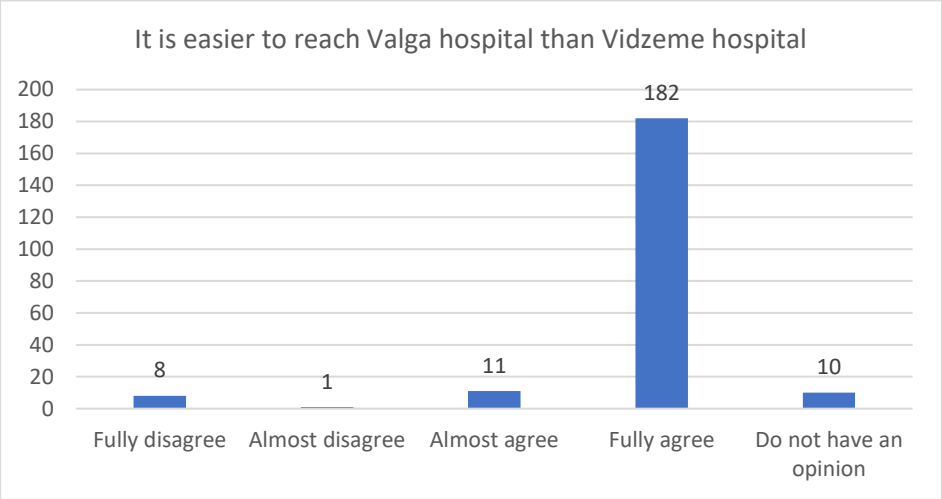

Figure 10. Convenience of reaching the Valga hospital.

61% of respondents fully agree that the Valga hospital has smaller waiting lines, which highlights on an important factor - health care organizations and accessibility problems in the Latvian health care system.

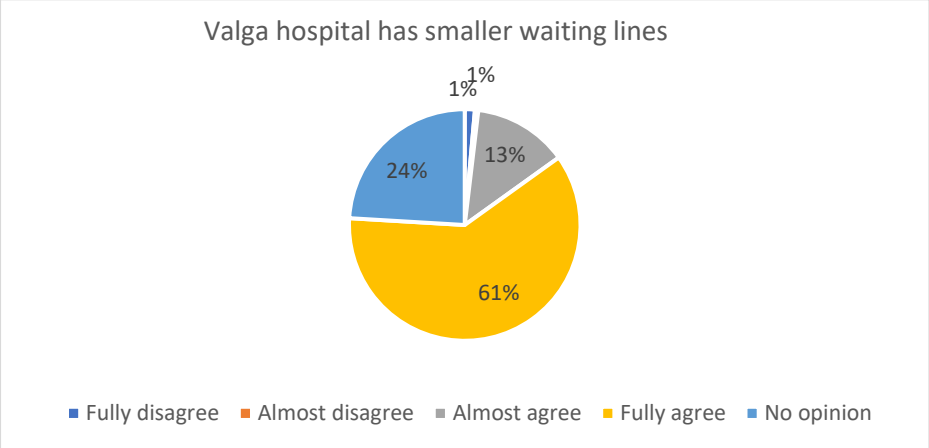

Figure 11. The Valga hospital waiting times.

80% of respondents acknowledge that due to the distance, receiving services at the Vidzeme hospital is troublesome, as a result of which they have to miss work or take a day off.

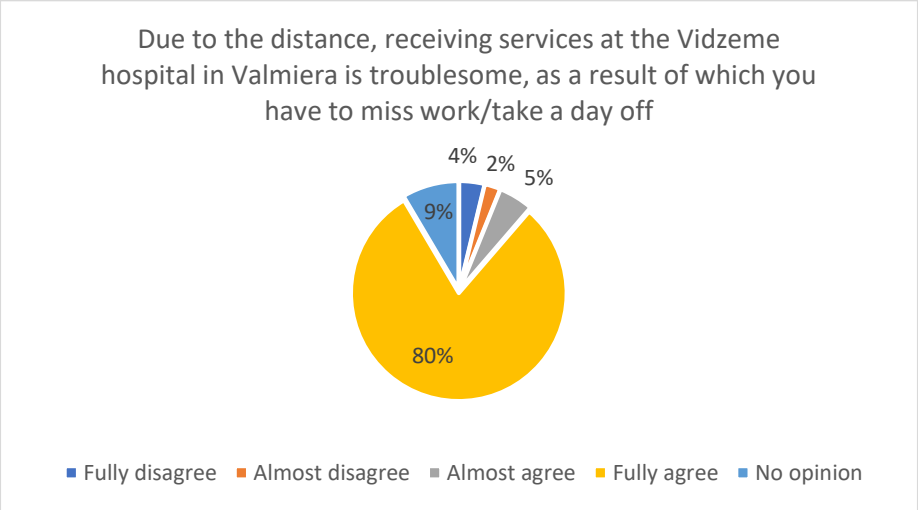

Figure 12. Distance to Valmiera as an obstacle to receive services at the Vidzeme hospital.

Cost factors

Respondents mentioned that difference in the cost of services (in the Valga hospital and in the Vidzeme hospital) affects the choice of the place of receiving health care services (64.6%). Although the cost of health care services in Estonia is higher, the cost of transportation to get to the Vidzeme hospital is also a burden (82.1%).

Health care quality factors

Majority of respondents (71.2%) acknowledge that the Valga Hospital offers a range of services that meet the respondents' needs, it employs highly professional doctors (68.4%) and it's staff treats patients with respect (74.5%). Respondents also mentioned that the service organization is very good, patients receive services at the level that meet and even exceed their expectations.

Services that residents would like to receive in the Valga hospital

Regarding the suitability of the services offered by the Valga hospital to their needs, the opinions of the respondents are divided: 33% completely agree, 32% almost agree, 9% disagree, and 26% have no opinion. This question is related to the barriers mentioned by citizens later in the survey in receiving services in the context of cross-border healthcare.

Relating to the services respondents would like to receive at the Valga hospital, the most demanded services are diagnostic examinations followed by specialist consultations and elective hospital care.

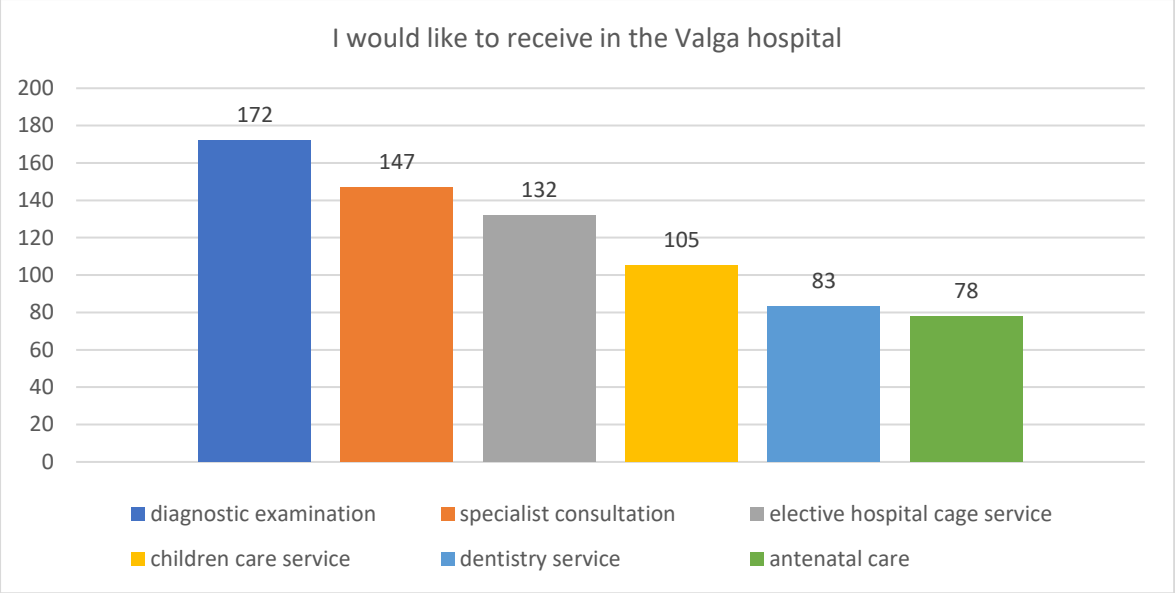

Figure 13. Valga hospital services demanded by respondents.

Majority of respondents (71.2%) mentioned, that the Valga hospital offers a range of services that meets their needs. Majority of respondents agreed that the Valga hospital employs highly professional doctors (68.4%), only 6 (2.8%) respondents disagree with the statement, 2 of whom have not visited the Valga hospital in the last 5 years. 74,5% of respondents agreed that the Valga hospital staff treats patients with respect.

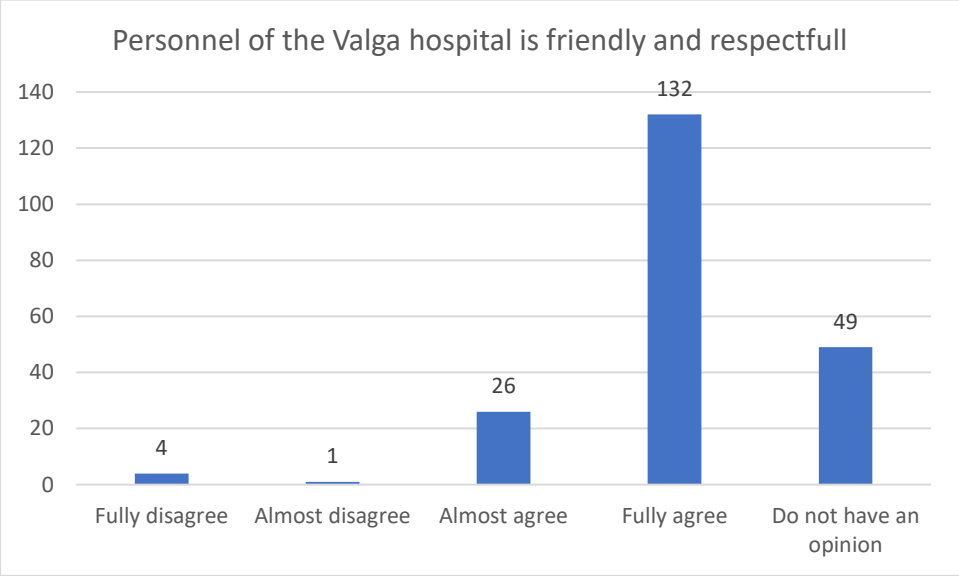

Figure 14. Respectfulness of the personnel; of the Valga hospital.

The main hindering conditions for receiving services at the Valga hospital

Although the results of the survey show that the residents of the Valka region generally are willing to receive health care services at the Valka hospital, there are a number of obstacles that limit their receipt.
Among them as the main ones are mentioned:

1) The **language barrier** is the most significant obstacle for receiving services in the Valga hospital (53.8%).
2) In order to continue care in Latvia, it is **necessary to translate the medical records** received in the Valga (59.4%).
3) Not all family doctors, practising in the Valka region, possess sufficient knowledge of English language, therefore **translation of all medical documents is required.**
4) Respondents mentioned also insufficient information about the services provided at the Valga hospital (44.3%).
5) Existing **administrative procedure** to receive reimbursement of expenses from National Health service is time consuming and difficult (about 50% of respondents).
6) After receiving services at the Valga hospital, it is **difficult to continue further care** process in Latvia (62.0%).
7) Medical practitioners in Valmiera are **not eligible to issue referrals for examinations at the Valga hospital.** But this contradicts with information received from the NHS, pointing to insufficient or misused information about existing referral issuing process.
8) Services that are not covered as emergency care (EHIC card) or not covered by the NHS and the Valga hospital agreement must be paid out-of-pocket. **Private insurance policies, issued in Latvia, do not provide for their payment either.**

2.2.Barriers for health service utilization for inhabitants of Valka region: focus group discussion results

In order to deeply explore the opinion of the residents of the Valka region about the provision of health care services, two focus group discussions and expert in-depth interviews were organized.
The participants of the focus groups were residents and family doctors, while the expert interviews were organized with the management representatives of the Valga and Vidzeme hospitals, medical professionals at the Valka polyclinic and the urgent care point.

Semi-structured interviews included the questions:
1) how do the participants evaluate accessibility of health care services in general and changes in the last 5 years in the Valka region?
2) what barriers do they see to the access to care in the border region?

The results of discussions and interviews quite uniformly pointed to the current situation, that the availability of care is affected by 2 types of factor groups:
(1) factors related to the organization of health care in Latvia in general and
(2) factors related to the border region specifics.

Evaluating the situation as a whole, the health care organization in Latvia can be singled out as the main inhibiting reason for accessibility, as a result of which the provision of services is hampered by insufficient medical personnel, low service tariffs make the provision of services unprofitable in the Valka polyclinic, etc.
In general, residents are positive about the development of the Vidzeme hospital in recent years and, despite the distance, they would also be ready to receive more services there. However, the long waiting lines for services prevent these services from being considered adequate for their health needs.

Obstacles connected with the organization of Latvian health care system

Theme	Description, citation
Accessibility of health care services and changes during last five years	Valka outpatient centre provides very **limited scope of services**, as a result there are very long waiting lists for essential services, for example specialist consultations, x-ray diagnostics, etc. Due to insufficient state funding for health care, **long waiting lists for essential services** are not only in Valka, but also in the Vidzeme hospital – for some specialists consultation waiting time is over six months, but some specialists (especially it is critical for specialists for children) service is available only in Riga or for private payment only.
	Due to the **limited availability of timely specialist consultation services**, patients with chronic diseases in case of worsening their health conditions are forced to call emergency ambulance services, thus creating unnecessary burden to the HC system

	"*I was calling ambulance about 8 times per year*"
Allocation of funds does not reflect changes in population's needs	The principles according to which funds are allocated to the secondary health care services **do not reflect current and predicted health care needs of the Valka region** inhabitants and are not based on current and predicted morbidity data.
The low tariffs for state services reduce the availability of specialists in the public system	The difference between the tariff for a state-paid service and the price of the same service in the private service segment increases, reducing the attractiveness of the public sector and increasing the **outflow of doctors to the private sector**. Specialists create their own private practices and patients are forced to pay for services out-of-pocket, which also applies to childcare

Obstacles connected with remoteness of the Valka city and its' location at the border

Theme	Description, citation
Remote area and low density of population does not allow to develop costs effective service provision	Since the population of Valka region is very small, **it is not possible to provide cost-effective consultations and examinations** due to the small number of patients. In addition, low public service tariffs do not cover the real costs of the service, including the need for increasingly expensive medical technologies
Low productivity of health care service organization	It is problematic to ensure financially justified specialist appointments in Valka - the specialist has to spend at least two hours on the road **traveling** from and to the Vidzeme hospital, which is **taken away from productive time**
Limited public transportation services	The regional transport system requires the use of a whole working day in the case of an appointment at the Vidzeme hospital
Additional cost burden for travel to remote areas for specialists	**High burden of transportation costs and time lost** travelling require financial incentives to attract specialists

Analysis of barriers for HC service utilization related to cross-border health care services

Receiving services at the Valga hospital is promising, but there are several obstacles to cross-border care, noted by both residents and care specialists. In general, it can be seen that cross-border health care services in Valga hospital would be better received by younger residents and those who know English better.

The contract between NHC, Latvia, and Valga Hospital is evaluated positively. Those who have used services at the Valga hospital admit that there are short waiting lines for the service, it is provided in full and high quality.

Obstacles connected to the cross-border care in general

Theme	Description, citation
Language barrier	**Difficulties for patient to describe their health status at foreign language**; difficulties for Latvian specialists to interpret medical documentation at foreign language. "*Latvians, many of them, do not speak Russian do not even mentioning English"*
Data and medical documentation exchange	Existing e-health systems in Estonia and Latvia are **not able to exchange patient medical data** due to different coding systems, different architecture of the systems, e.t.c
Difference in tariffs	Latvian and Estonian health care systems have **different coding approaches and different tariffs** even for the same services
Administrative barrier	Claim for reimbursement form NHS for services received at Valga hospital is connected with **high administrative burden**, is time consuming and reimbursement does not cover full cost of service, only the part equal to tariffs in Latvia for the service - patient still has to pay the difference
Information shortage about the Valga hospital services	There is **not enough information** about available services (specialists, diagnostic etc.) at the Valga hospital

Summarizing the barriers to access to services for the residents of the Valka region, it can be concluded that a large part of them is related to the organization and availability of health care in Latvia as a whole. Some of the necessary state paid services are not available at the Vidzeme Hospital at medically justified waiting time or are not available at all. The inhabitants of the Valka region are forced to look for the services they need all over Latvia, especially in the capital city Riga.

On the other hand, the Vidzeme hospital cannot provide profitable services in the Valka polyclinic, because the state tariffs do not cover the cost of the service, which must also include the amortization of equipment and the travel expenses of specialists. Therefore, it is important to create a regional strategy for health care in Latvia that addresses both the determination of appropriate tariffs and the challenges of these remote regions.

3.Assessment of indirect costs associated with suboptimal accessibility of health care services in Valka region

Assessment of social costs associated with suboptimal accessibility of health care (HC) services includes:

- Calculation of social costs for remote HC provision (necessity to travel to Valmiera or other city);
- Premature mortality costs;
- Green- house effect of travel to remote HC facility.

Total number of outpatient specialist consultations in the Valka region is lower than in Latvia in general. Sharp decrease in the number of consultations was evident in 2020 as a result of restrictions for provision due to COVID-19. But if in Latvia total number of consultations recovers in 2021 up to the level of 2019, in the Valka region recovery is much slower.

Table 9. Number of outpatient consultations with doctors.

Region	**2018**	**2019**	**2020**	**2021**
Total number of outpatient consultations with doctors				
Latvia	11579761	11678995	9774339	11394117
Valka region	39903	39660	33859	37375
Total number of outpatient specialist consultations per one inhabitant				
Latvia	6,01	6,10	5,14	6,05
Valka region	5,15	5,19	4,43	4,94

Source: CDPC, Latvia, 2024

At the Valka city only limited number of outpatient services is available, therefore inhabitant, willing to receive outpatient specialist consultation, diagnostic service or elective surgical manipulation has to travel to Valmiera or Riga. Necessity to travel is one of the factors limiting utilisation of necessary health care services, as it is associated with additional costs for travel as well as with costs associated with time lost for productive activities. Travel to Valmiera or Riga is also creating additional CO2 emission, increasing total carbon footprint.

Estimation of additional costs is based on the following data and assumptions:

- travel distance from Valka to Valmiera is 55 km, it is possible to get to Valmiera by public transportation, and in addition there is public transportation form Valmiera city to the Vidzeme hospital; cost of round trip is calculated based on information from publicly available sources[4];

[4] Information about public transportation costs: https://www.bezrindas.lv/lv/autobusu-biletes/choose/78/79/1/20240221/0/0/f2ba84f3a76d6c7a806f53e2fb98da7ea9868e2c

- in order to get to the Vidzeme hospital by public transport patient has to plan entire day off, to arrange for public transport schedule Valka- Valmiera and Valmiera – the Vidzeme hospital; cost of time lost for productive activates is calculated taking as a base average salary for Valka inhabitants, being 962 Eur per month[5] and estimated time lost (at least 8 hours per 1 HC appointment);
- for travel to Valmiera by own car time is estimated as direct time of travel, and costs are estimated using average consumption of fuel by private car;
- for travel by own car time lost is estimated as direct time of travel plus at least one hour for the consultation itself;
- estimation of carbon footprint cost is made using data about carbon footprint for different types of transport means[6] for estimated travel distance;
- travel distance from Valka to Riga is 157 km, it is possible to get to Riga by public transportation, and in addition there is public transportation from Riga centre to the selected service provider in Riga; cost of round trip is calculated based on information from publicly available sources;
- in order to get to the selected service provider in Riga by public transport patient has to plan entire day off, to arrange for public transport schedule Valka- Riga – service provider; cost of time lost for productive activates is calculated taking as a base average salary for Valka inhabitants, being 962 Eur per month[7] and estimated time lost (at least 10 hours);
- for travel to Riga by own car time was estimated as direct time of travel, and costs are estimated using average consumption of fuel by private car;
- for travel by own car time lost is estimated as direct time of travel plus at least one hour for the consultation itself;
- estimation of carbon footprint cost is made using data about carbon footprint for different types of transport means[8] for estimated travel distance.

Summary of calculations is provided in the Table 10.

[5] Official statistical portal of Latvia about average income of inhabitants in Valka region per time unit https://stat.gov.lv/en/statistics-themes/labour-market/labour-costs
[6] Cost of carbon footprint https://www.visualcapitalist.com/comparing-the-carbon-footprint-of-transportation-options/

[7] Official statistical portal of Latvia about average income of inhabitants in Valka region per time unit https://stat.gov.lv/en/statistics-themes/labour-market/labour-costs
[8] Cost of carbon footprint https://www.visualcapitalist.com/comparing-the-carbon-footprint-of-transportation-options/

Table 10. Estimation of additional costs associated with one travel to Valmiera or Riga.

Outpatient visit to Valmiera	cost of travel (round trip), Eur	time of travel, hour	cost of time, Eur/hour	Cost of time lost, Eur	Carbon footprint cost estimate, Eur	Total cost, Eur
by public transport	5,6	9	5,80	52,2	0,16	57,96
by own car (55 km)	18,37	2,53	5,80	14,67	0,3	33,34

Outpatient visit to Riga	cost of travel (round trip), Eur	time of travel, hour	cost of time, Eur/hour	Cost of time lost, Eur	Carbon footprint cost estimate, Eur	Total cost, Eur
by public transport	6,44	10	5,80	58	0,46	64,9
by own car (157 km)	52,44	5,33	5,80	30,91	0,86	84,21

Source: Authors' calculations.

As seen from the calculations above, traveling to Valmiera or Riga to receive health care services is associated with significant additional cost, and could limit or even eliminate demand for services in general.

In order to estimate total annual cost burden associated with necessity to travel to Valmiera or Riga, following data and assumptions were used:

- according to official statistics summarized by Centre for Disease prevention and Control[9], about half of all outpatient consolations with doctors is with family doctors, and the other half is with specialists;
- there is no possibility to receive specialist consultation at Valka, and patient has opportunity to look for the consultation in Valmiera, Riga, or other city;
- for the estimation purposes we assume that 80% of all specialist consultations are provided at the Vidzeme hospital, and 20% are provided at Riga;
- according to Central Statistical bureau[10] data, 42% of inhabitants of Valka region possesses registered private car, therefore for calculation of the total costs, were assumed that 42% of travel are made by private transport, and 58% by public transport;
- total costs are calculated using number of consultations at Valmiera and Riga, transportation means, and costs associated with one travel, estimated above.

[9] https://www.spkc.gov.lv/lv/latvijas-veselibas-aprupes-statistikas-gadagramata

[10] https://data.stat.gov.lv/pxweb/lv/OSP_PUB/START__NOZ__TR__TRC/TRC011/table/tableViewLayout1/

Table 11. Estimation of additional annual costs associated with travel to Valmiera or Riga.

Indicator			Number
Total number of outpatient consultations for Valka inhabitants (CDPC, Latvia)			37375
Number of consultations with specialists (50%), assumption			18688
Location	Total number of consultations	Number of consultations, reached by public transport	Number of consultations, reached by private transport
Thereof in Valmiera (80%)	14950	8705	6245
Thereof in Riga (20%)	3738	2177	1561
Estimation of additional costs		Costs, EUR	Costs, EUR
Travel to Valmiera		504541,8	208208,3
Travel to Riga		141287,3	131451,81
Total costs, EUR			**985 489,21**

Source: Authors' calculations.

Using assumptions, described above, estimated additional annual costs burden due to the necessity to travel to Valmiera or Riga are **985 489,21 EUR.**

Table 12. Composition of additional costs associated with travel to Valmiera or Riga.

Position	Estimated cost, EUR	% of the total costs
Transportation cost	259 347,37	26,3%
Cost of the lost productive time	720 531,66	73,1%
Estimate of additional carbon footprint cost	5 610,18	0,6%
Total	**985 489,21**	

Source: Authors' calculations.

Majority of the additional cost is associated with the time lost due to the necessity to travel, transportation costs comprise a bit more than a quarter of all costs, and additional carbon footprint is less than 1% of the total costs.

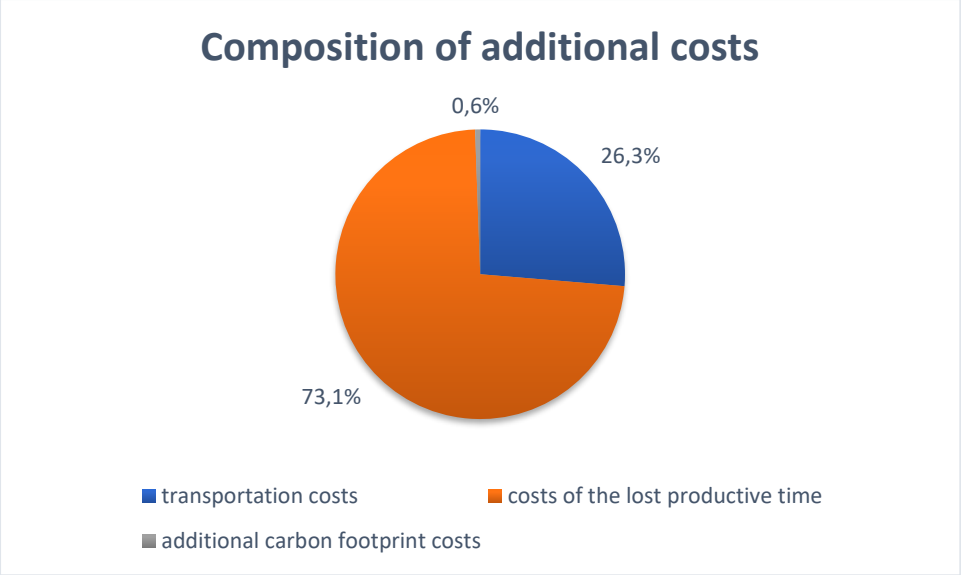

Figure 15. Composition of additional costs.

Absence of the necessary health care services in the Valka city requires to travel to other town, which is associated with high-cost burden for the person, and for entire society. Highest proportion of costs is associated with costs of the lost productive time.

To estimate total premature mortality cost we calculated excess mortality by age groups in Valka. Excess mortality by age groups was estimated comparing expected mortality (if mortality rate would be the same as in Latvia) with actual mortality.

Table 12. Estimation of excess mortality by age groups.

Age group	Expected mortality	Actual mortality (2022)	Excess mortality in Valka
0–14	0,30	1	0,70
15–24	0,36	1	0,64
25–34	1,23	2	0,77
35–44	2,56	5	2,44
45-54	6,57	8	1,43
55-64	17,84	25	7,16
65 and more	116,06	120	3,94
Total	122,55	162	39,45

Source: CDPC, Latvia, 2024, authors' calculations.

For each excess death, we estimated loss of productive time from age 18 till age 65. Cost was calculated using Valka region average wage, employment rate (40,5% in Valka[11]), and

[11] https://data.stat.gov.lv/pxweb/lv/OSP_PUB/START__EMP__NB__NBLB/NBA031/

discounting future earning with 3,5 % discount rate annually. We did not project any increase in earnings, neither difference in earning among men and women.

Therefore, our estimate provides very conservative estimation of the premature mortality costs. Total estimated premature mortality cost is **631 175 EUR.**

Conclusions and recommendations

Conclusions

1) Utilization of health care services at Valka region is lower that in Latvia, pointing to insufficient availability of the essential services;
2) Majority of specialist and diagnostic services are available only at Valga, Valmiera, Riga or other cities;
3) There is a lot of pressure on the need for family medicine services, which do not have adequate support from the side of diagnostics and specialist consultations;
4) Use of necessary services at Valmiera, Riga or other city are associated with very high burden of additional costs;
5) Suboptimal availability of necessary health care services is one of the factors, leading to excess premature mortality, which is associated with substantial productivity loses for the region;
6) Increase of service utilization at the Valga hospital could be beneficial for Valka inhabitants, as those are geographically close and have less waiting lines;
7) At the same time, utilization of healthcare services at the Valga hospital is associated with several important obstacles:
    - Language barriers;
    - Administrative barriers;
    - Financial barriers;
    - Patients' medical data exchange barriers.

Recommendations

Regarding the cross-border care provision

1) Continue provision of health care services at the Valga hospital and extend the range of services provided under the scope of the agreement between the NHS (Latvia) and the Valga hospital (Estonia);
2) Create a special coordination body lead by Valka municipality to coordinate efforts of Valka municipality, Latvian and Estonian NHS, Ministry of health, Vidzeme hospital and Valga hospital to develop sustainable cross-border health care pathway for the Valka region inhabitants, including all levels of care;
3) Exploit possible IT solutions to improve data exchange between the Latvian and Estonian health care systems;
4) Find a solution (AI supported) to overcome language barrier for consultations and exchange of medical documentation;
5) Consider care coordinator for the Valka region inhabitants at the Valga hospital dealing with care pathways, information and communication issues;

6) Explore the improvement of medical care practice and organization information exchange and communication between health care specialists in Latvia and Estonia;
7) Improve information availability about the service structure and provision for inhabitants of Valka region;
8) Continuously monitor the process and outcome of the implemented actions in cooperation with the university - the RSU research team.

Regarding the Latvian health care organization and provision

1) Create additional payment scheme for Latvian service providers to cover additional cost burden associated with service provision in remote areas with low population density;
2) Evaluate the possibilities of increasing the productivity and cost-effectiveness of the services provided by the Valka polyclinic, including support for doctors' general practices, nurses, medical assistants;
3) Facilitate creation of joint GP practices' teams with shared medical equipment to ensure availability of the essential examinations at place;
4) Foster implementation of e-health solutions to improve accessibility of health care services (online consultations, tele-medicine etc.).

Research team, Riga Stradins university (Latvia):

Daiga Behmane (Daiga.Behmane@rsu.lv)

Alina Dūdele (Alina.Dudele@rsu.lv)

Alise Curkste (Alise.Curkste@rsu.lv)

Annex 1. Summary of the interviews and focus groups discussions.

Results of the interview with Chief doctor of the Valga hospital

Theme identified during focus group discussion	Description, citation
Language barrier	Difficulties for patient to describe their health status at foreign language; difficulties for Latvian specialists to interpret medical documentation at foreign language.
Data and medical documentation exchange	Existing e-health systems in Estonia and Latvia are not able to provide full exchange of medical data due to different coding systems, different architecture of the systems
Legal aspects	Estonian system differs from Latvian system in many aspects, even in data coding and methods of payment. It makes provision of health care services difficult for both providers and patients
Cooperation possibilities	It is important to find ways for effective cooperation between two systems, not overlapping services, but providing complementary services for the benefit of patients "*So, we can have different systems, but somehow get them together and have the consulting doctor from our (Estonian) side, if needed, or their (Latvian) side, if needed, and this is a system that is, it isn't working actually in here right now, it isn't working yet but I am starting it right now"*
Barrier between health and social care in Latvia	Existing regulation about protection of private medical information restricts social workers to get diagnose of the patient, whom they provide home care services. But absence of this information could negatively impact quality of service provided. "*Because if you go and care after a diabetic patient, you have to understand his, let's say, nutritional needs and other needs. But actually, it's prohibited because the law is that this is personal information"*.

International cooperation to foster implementation of European best practices	Valga hospital implements project Bike together with Tartu university, and Tartu university has extensive cooperation with Barcelona university, thus providing possibilities to learn from each other and to foster expansion of best practices. "*So, when you talked about that, we have actually bigger, wider nets, that it is very good because we can actually make it happen all over Europe so, in the future, so this is very cool and...*"
Necessity to provide adequate resource to solve patient's medical issue	Assessment of the needs of patient and providing necessary medical advice could improve effectiveness of the use of limited resources at the same time improving patient health "*because when there is a medical issue right now, they are just actually calling 112 and the ambulance will come. And sometimes it doesn't have to be ambulance, it's just a chronic disease that is maybe worse, maybe the heart is beating too fast, and then we could only send our nurse to check it out and the nurse would call the doctor, who is providing the service to, and this is it*"
Shortage of medical personnel and population ageing requests new technological solutions to provide service	It is necessary to exploit new technological solutions to monitor health status of the patients "*we… talked about the innovation in technology and we can have home monitoring systems*"
Necessity to create new professions in health care in order to take off management and coordination functions	Health care increasingly require integrated and multiprofessional care, therefore need for new position in health care responsible for coordination of different services is emerging "*we have to take off these management functions from nurses and social workers*"
Financing of services provided cross-border	Current system foresees payment necessary emergency services at the point of delivery, and reimburse for elective care "*If it's an emergency, then maybe it could be covered by the state – it's for free and covered by the state. And if it's like a regular care, then it's, the patient will have to pay, just like when he comes here*"

Emergency care	In case of emergency patient form Valka is calling to ambulance and is brought to Valmiera hospital. There is no option that Latvian ambulance will bring patient to Valga hospital. But if emergency situation happened in Estonia (10 m from the border), patient will be transported to Valga hospital
Transportation issue	It is a problem for patient to come to Valka form Valmiera hospital by public transport. The same is for Estonians form Valga, transported to Tartu hospital
Difference in tariffs	Patient has to cover elective service costs himself, and then claim for reimbursement from NHS. NHS covers services costs according to Latvian tariffs
Administrative and financial burden for cross border services	Maybe it would be possible to create a system, when NHS covers directly to the hospital cost of services provided by Latvian tariffs, and the patient covers the difference between tariffs
Political decision to cover services for Valkas inhabitants in Valga hospital	Technical problems could be solved if there is political decision to do so
Optimization of use of the limited resources	Provision of necessary service at Valga home hospital could decrease demand for emergency ad inpatient services in Valmiera – increases system effectiveness
	Health care plans agreed with patient and specialists

Results of focus group with Valka inhabitants

Also Valka inhabitants at the survey and also focus group discussion mentioned language barrier as one of the most important obstacle to receive health care services at the Valga hospital, according to the Valga's hospital management, it is not a very important problem: Problem is... about the juridical aspects because it is a different country, a different system etc.

Theme identified during focus group discussion	Description, citation
Accessibility of health care services and changes during last five years	Valka outpatient centre provides very limited scope of services, for example x-ray diagnostic is available once a week. The same services are available at Valga hospital faster, also comparing with Valmiera hospital.
	During one of the previous project's coordinators of medical services, speaking Latvian was

	employed by Valga hospital, solving language barriers and also coordinating services.
Language problem	GP at Valka prefer cooperation with Valmiera hospital due to language problems in medical documentation (health status of the patient, diagnosis, summary of services provided, recommendations etc.). Especially limiting language barrier is for consultations, elective services. It is much easier for diagnostic services.
Language barrier	For diagnostic services results are provided in English and Latvian languages
	For other services language barrier is one of the most important – it is difficult to describe health status on foreign language and also to understand doctor's recommendation
Availability of services	Inhabitants highly appreciate timely availability of USG at Valga hospital, comparing to that in Latvia (Valmiera and others). Suggest increasing scope of services paid bay the state at Valga hospital.
	Due to the limited availability of specialist healthcare services, patients with chronic diseases are forced to call for help to emergency services in case of worsening their health conditions, thus creating unnecessary burden to the HC system "*I was calling ambulance about 8 times per year*"
Data compatibility	Medical data are coded differently in Latvia and Estonia, there is no possibility to transfer data between the systems, undermining continuity of medical treatment
Cooperation with GP	There is no problem for Latvian GP to give order to carry out diagnostic service at Valga hospital
Cooperation with Latvian doctors	Latvian doctors provide services at Valga hospital
Availability of services for children	For inhabitants from remote area, it is very problematic, time consuming and expensive to get necessary health care service for children
Transportation services	Existing public transport system require at least one full day to visit Valmiera hospital or Riga health care service provider
Problems to attract specialists to provide service in Valka	Small number of inhabitants is a major obstacle to create sufficient demand for specialist health care services, as a result specialist spend four hours traveling (Valmiera- Valka- Valmiera), and consult only two-four patients. But as demand for services is very high, specialist loses productive time, thus decreasing efficiency of the entire system

Necessary differentiate payment for services in the remote areas	High burden of transportation costs and time lost travelling require financial incentives to attract specialists
Administrative barrier	It is difficult to claim reimbursement form NHS for services received at Valga hospital, and there is difference in tariffs – patient still has to pay the difference

Interview with management of Vidzeme hospital

Theme identified during focus group discussion	Description, citation
Availability of services at Valka	There are a relatively large number of family doctors in the region, but they do not have access to extensive diagnostic options, doctors before retirement age;
Growing unmet need for HC	The demand is very high and increases every year, the additional funds allocated to the Ministry of Finance cannot meet the growing demand
Allocation of funds does not reflect changes in population's needs	The principles according to which funds are allocated to secondary VA services have not been revised and are allocated according to historically determined volumes and the fact of their execution;
	Current and future morbidity and, therefore, the predicted need for services are not performed
Increase in HC financing is covering increase in salaries of medical personnel, but is not sufficient to increase availability of services	The volume of services actually provided does not increase, one of the reasons is that the number of manipulations performed during consultations increases and, consequently, the average cost of one patient's treatment episode;
Growing private medicine decrease attractiveness for professionals to provide of state paid services	The difference between the tariff for a state-paid service and the price of the same service in the paid service segment will increase, reducing the attractiveness of the state segment and increasing the outflow of doctors to the private sector;
	It is difficult for the Vidzeme Hospital to attract specialists to provide state-paid services - specialists also choose to provide services only for a fee (e.g. children's neurologist), while the Hospital chooses to attract a specialist, albeit for a fee, to ensure

	availability in the Hospital; and parents also choose to receive a service for their child in Valmiera, compared to the option of going to Riga
Remote area and low density of population does not allow to develop costs effective service provision (with increasingly productive and expensive medical technologies)	Since the population of Valka region is very small, it is not possible to provide cost-effective examinations - there is a lack of patients!
	The equipment of the specialist's office is also becoming more and more complicated and expensive - because it is necessary to provide the necessary technologies for conducting examinations, for example in the office of an ophthalmologist, ENT or urologist. Equipping the cabinets is not economically justified - it is not possible to predict sufficient use of the cabinets to recoup the investments made
Travel time is decreasing productive time of the professionals	It is also problematic to ensure specialist appointments in Valka - the specialist has to spend at least two hours on the road, which is taken away from productive time, thus reducing the specialist's availability
	It is necessary to determine a surcharge for the tariff in the labour border area
	The hospital pays the expenses of the specialist Valmiera-Valka
	It is necessary to look for ways to compensate the travel expenses of patients in Valka-Valmiera
Cooperation with university clinics	In cooperation with university hospitals, unequal attitude is observed from the university clinics, there is a tendency only to select patients in the region to provide services in Riga
	Continuing education of specialists (Hospitals) is very expensive - this is yet another profit segment for university hospitals
Limited state financing, difficulties to increase scope of services	It is difficult to receive a state order for new services: Valka has an open podiatrist office that provides services for a fee, but NVD has not allocated a state quota for such a service for six months.
	The amount of allocated quotas is also so small that full-time work cannot be provided for a specialist, which makes it difficult to attract a specialist and plan work

	A fragmented quota system forces doctors to work in several places and thus lose a lot of time on the road
	In order to receive state-paid services, the patient looks for opportunities anywhere
Possibility to increase financing for state service – increase patient's co-payment	Maybe the patient's co-payment should be raised to equalize service prices in the state and fee segments - but this is a significant increase in state funding 9 at the expense of patient contribution compensation)
Uneven supply of different specialists	The result of the influence of professional associations is a large disproportion in the provision of specialists, e.g. there are too many cardiologists, but endoscopists, rheumatologists, etc. missing
Data transferability between Estonian and Latvian e-health systems	It is necessary to expand the possibilities of information exchange between Latvian and Estonian e-health systems, so that med. data on the course of the patient's treatment, the results would also be available to Latvian specialists.
Increasing hospitals' workload	More and more demands are placed on Hospitals (e.g. register unregistered referrals of family doctors in PANDA), which increases the administrative burden without financial coverage
Cooperation between Latvia and Estonia should be both ways	cooperation in treatment must be bilateral - Latvian specialists could also accept patients in the Valga hospital.

Focus group with family doctors at Valka city

Theme identified during focus group discussion	Description, citation
Availability of services at Valka	There are a 7 family doctors; at the Valka outpatient centre (policlinics) specialists services are available: ophthalmologist – once a week; dermatologist – once a month, gynaecologist - twice a week, traumatologist – once a week and neurologist has private practice. From available diagnostic we have x-ray once a week. GP can make cardiogram. Laboratory tests are available (Gulbja laboratory) "*We are alone, abandoned, we can not provide necessary service"*

Waiting lists	Ophthalmologist – up to four months; x-ray - 1,5 months; In Valmiera – upto 1,5 month In Valga – immediately For echocardiography – up to six months at Vidzeme hospital. Patient himself is searching Latvia for available service provider
Role of GP	GP at Valka provides majority of services to the patients, also the part usually provided by specialists, as a result of unavailability of specialists' services "*we actually do not have a choice, here is the patient, he asks for help and we provide it"*
Cooperation with Vidzeme hospital	Cooperation is very difficult; only after hard pressing and tuff requests we can get some form of cooperation Vidzeme hospital provides also possibility of phone consultations with specialists for GP
Cooperation with Valga hospital	Major barrier for cooperation with specialists is language barrier, as many of Latvian patients do not speak either Russian or English. It is also difficult to speak about health problems in foreign language. It is much easier with diagnostic "*Latvian, many of them, do not speak Russian do not even mentioning English"*
	Currently under agreement between NHS and Valga hospital, Latvian patients receive services free of charge at the point of delivery, but agreement is in force till June 2026. Valga hospital give results of examination at flesh
	Patients are very satisfied with attitude form the personnel of Valga hospital
GP age and work load	It is very difficult to carry out entire work load here at Valak, ang GP all are at age above 60 and think about retirement. It would be very difficult to find new GP, as the interest of new doctors to become a GP is very low, and even state financed studies did not get full number of residents (30 places were not filled in)

	Workload is increasing year by year, as specialists' consultations possibility is decreasing every year. Also, patient coming form the hospital has recommendations to do additional examinations (echocardiography, Holter monitoring etc.). But these examinations are not available at Valka, and patient will have to find out himself where and when it is possible to do those examinations. Availability of state paid services at Vidzeme hospital is also decreasing every year, as specialists move to private practises and reduce work load at the hospital
Information availability about Valga hospital services	There is no enough information about available services (specialists, diagnostic etc.) at Valga hospital
Payment for the services provided by Valga hospital	Possible solution could be that NHS pays to Valga hospital for the service provided Latvian tariff, but the patient covers the difference. This would decrease financial and administrative burden for patient, requesting reimbursement of costs form NHS
	Valga hospital is willing to increase service volume, and Valkas inhabitants are very necessary for this. If there will not be demand for services from Valka inhabitants, sooner or later Valga hospital will close services one by one because of insufficient demand
Latvian debtors in Valga hospital	There is a substantial number of debtors – patient received services at Valga hospital, but did not pay, and Valga hospital does not have any tools to request the payment
Unnecessary demand	One of the reasons of long waiting lists is unnecessary demand, for example for diagnostic examination university clinic does not trust regional hospital and redo examination; or persons with insurance polices requests examinations and doctors agree to write orders
Drugs' prices	Valka inhabitants can go to Valga and get receipt drag cheaper that the same drag in Latvia
Information system	Estonia has state information system x-road, where all information is stored. In Latvia awe still have different system for different purpose, and information is not exchanged between those systems. It would

	be necessary to start building united system for all inhabitants' data. But is means we have to cancel all existing systems "*You see, hundreds of millions of euro already invested into different systems during last 15 years, and now to though all those systems away…"*
Absence of clinical guidelines	There are very limited number of clinical guidelines and patient pathways. But even for the diseases, where is existing patient pathway, it does not correspond with service accessibility and payment system
Tariffs	In Latvia are health care tariffs do not cover costs, therefore service providers are regularly faced with financial difficulties while providing state paid services. In Estonia tariffs not only cover costs, but include also kind of profit, which could be invested to the development
Children health care	Children department is in Vidzeme hospital, but provides only basic treatment. For every more sophisticated case, child should be brought to Riga