A Map of Healthcare Needs for Poland – Cardiology

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[1] The Ministry of Health directs special acknowledgements to the Polish Chamber of Physicians and Dentists (NIL) for sharing data on the medical staff, which were used to prepare the analyses contained in this chapter.

Background information

1. In this report, in accordance with the decision of the Team for the development of Maps of Healthcare Needs in the field of cardiology and cardiac surgery appointed by the Minister of Health, cardiac diseases are defined as diseases belonging to the following groups of diagnoses according to the ICD-10 classification: ischaemic heart disease (I20, I21, I24, I25), heart failure (I50), atrial fibrillation and flutter (I48), other rhythm and conduction disturbances (I44-I47, I49), cardiomyopathies (I42, I43), congenital heart defects (Q20-Q26), acquired heart defects (I05-I09, I34-I37), pulmonary embolism (I26).
2. To determine the incidence of cardiac diseases and the provision of healthcare services in the field of cardiology, the National Health Fund (NFZ) database was used for the years 2009-2014, while the number of new cases was determined for 2010-2013 (2009 and 2014 were used to verify if the patient is a first-time patient). However, it is important to bear in mind that the NFZ data is used to settle accounts with the healthcare provider and may contain errors, e.g. in terms of ICD–10 diagnoses. Therefore, for the purpose of, for example, determining the date of diagnosing the disease in a patient it was necessary to apply decision rules. Patients who appeared in the hospital or ER were automatically included in the determination of incidence as first-time patients. If the patient appeared for the first time in Outpatient Specialist Services (AOS) and did not reappear in the system within the next 365 days, the products reported under this visit were analysed. Based on this, the probability that the patient is a first-time patient was assigned. For example, if the product was a post-hospital visit and the patient was not recorded in the hospital, the patient was included in the "New patient" category, assuming that the hospitalization may have been due to a different (dominant) cardiological cause, but in the course of the disease he was also diagnosed with the analysed disease, while in the case of a W11 visit (outpatient counselling without indicating tests from the list qualifying for a higher payment - the simplest outpatient counselling) the patient was classified with 100% probability as a patient in the follow-up process. In addition, patients with the first appearance in AOS with a diagnosis of myocardial infarction and pulmonary embolism were excluded from the incidence analysis[3].
3. Information on cardiac surgery services for adults and children was prepared on the basis of data from the KROK registry due to the fact that not all procedures (e.g. highly specialized) were reported in the NFZ database.
4. Primary Health Care is local in nature, and the aim of the Map of Healthcare Needs in the field of cardiology for Poland is the analysis of supra-regional phenomena. Therefore, no detailed analysis of Primary Health Care was performed in this document.

[2] In the case of cardiac diseases, 3 medical registries are kept in Poland: Polish Registry of Acute Coronary Syndromes (PL–ACS), National Registry of Cardiac Surgery (KROK) and Polish Registry of Invasive Cardiology Procedures (ORPKI). None of these registries is sufficient to prepare information on the incidence of cardiac diseases and to forecast this value. The PL-ACS differs, in quantitative terms, from the values observed in the NFZ reporting data. A preliminary comparative analysis shows that not all facilities report their cases to the registry. In addition, the submission to PL–ACS is carried out as soon as possible, while reporting to the NFZ is being prepared at the end of the hospitalization, when the doctors have a more complete clinical picture of the patient. Moreover, acute coronary syndromes belong to only one of the groups of disease entities under cardiac diseases, so even with a full registry, the necessary prognostic information could not be obtained. KROK is, in turn, a registry of cardiac surgery and covers only one of the methods of treatment of cardiac patients. The third of these registries, ORPKI, does not have patient IDs that would allow to combine information with the NFZ reporting data. What is more, ORPKI also applies only to some cardiac diseases, which makes it unusable while designing a standardized method of analysis

[3] These disease entities, due to their acute course, cannot be treated in the outpatient care (hospitalized patients, life-threatening state). It was considered that an AOS visit with this diagnosis is a continuation of the hospital treatment process

Part I

Demographic and Epidemiological Aspects

Population Structure

1. In 2013, Poland was inhabited by 38.5 million people. Most of them lived in the Mazowieckie Voivodeship (13.8% of the population of the country) and Śląskie Voivodeship (11.9%). Least lived in the Opolskie Voivodeship (2.6%) and Lubuskie Voivodeship (2.7%). Most of the population relative to the area was in the Śląskie Voivodeship (373 people/1 km^2).
2. The Polish population was heterogeneous in terms of age. In 2013, the number of youngest people (up to 19 years old) was 7.9 million. They constituted the largest percentage of the total population in the Podkarpackie, Śląskie, Wielkopolskie and Warmińsko-Mazurskie Voivodeships. The number of middle-aged people (between 20 and 64 years old) was 24.9 million. The number of people over 65 years old was 6.2 million. Seniors constituted the largest percentage of the total population in the Lubuskie, Świętokrzyskie, Podlaskie and Mazowieckie Voivodeships.

Incidence of Cardiac Diseases

1. In 2013, 745.8 thousand new cases of cardiac diseases were diagnosed in 367.1 thousand patients in Poland, which gives an average of more than 2 cardiac diseases per patient.
2. Most of the patients with cardiac diseases were living in the Voivodeships: Mazowieckie (52.1 thousand), Śląskie (46.8 thousand), Wielkopolskie (31 thousand) and Małopolskie (30.4 thousand). The lowest number of new cases characterized the Voivodeships: Lubuskie (9.5 thousand), Opolskie (9.7 thousand), Podlaskie (11.6 thousand) and Świętokrzyskie (12.3 thousand).
3. In the number of cases per 100 thousand people, the Voivodeships: Łódzkie (1024), Śląskie (1018), Dolnośląskie (994) and Mazowieckie (981) prevailed. In contrast, the lowest incidence rates per 100 thousand inhabitants were observed in the Voivodeships: Podkarpackie (878), Wielkopolskie (893), Warmińsko-Mazurskie (897) and Małopolskie (905).
4. The most common diagnoses were ischaemic heart disease (219.1 thousand) and other rhythm and conduction disturbances (153.1 thousand). In total, they accounted for approximately 50% of cardiac diseases diagnosed in 2013.
5. The highest number of new cases of ischaemic heart disease in Poland in 2013 occurred in the Voivodeships: Śląskie (31.5 thousand) and Mazowieckie (28.1 thousand), while the lowest in the Voivodeships: Opolskie (5.3 thousand) and Lubuskie (5.7 thousand). The incidence rate in Poland was 569.2 new cases per 100,000 inhabitants. The worst situation was in the Voivodeships: Śląskie (684 cases per 100,000 inhabitants), Łódzkie (648), Świętokrzyskie (636) and Lubelskie (625). The lowest values of the incidence rates were recorded in the Voivodeships: Warmińsko-Mazurskie (464), Podlaskie (502), Dolnośląskie (516) and Podkarpackie (524).
6. The highest incidence of other rhythm and conduction disturbances in Poland in 2013 occurred in the Voivodeships: Mazowieckie (23.2 thousand) and Śląskie (19.8 thousand), while the lowest in the Voivodeships: Lubuskie (3.5 thousand) and Opolskie (4.1 thousand). The incidence rate in Poland was 397.7 new cases per 100,000 inhabitants. The worst situation was in the Voivodeships: Podlaskie (548 new cases per 100,000 inhabitants), Pomorskie (451), Mazowieckie (436) and Śląskie (430). The lowest values of the incidence rates were recorded in the Voivodeships: Warmińsko-Mazurskie (326), Kujawsko-Pomorskie (341), Dolnośląskie (343) and Lubuskie (351).
7. The highest incidence of heart failure in Poland in 2013 occurred in the Voivodeships: Mazowieckie (17.9 thousand) and Śląskie (13.4 thousand), while the lowest in the Voivodeships: Lubuskie (2.8 thousand) and Opolskie (3.2 thousand). The incidence rate in Poland was 310.4 cases per 100,000 inhabitants. The worst situation was in the Voivodeships: Łódzkie (407 cases per 100,000 inhabitants), Lubelskie (384), and Podkarpackie (364). The lowest values of the incidence rates were recorded in the Voivodeships: Pomorskie (223), Zachodniopomorskie (246), Wielkopolskie (251) and Lubuskie (278).

8. The highest incidence of atrial fibrillation and flutter in Poland in 2013 occurred in the Voivodeships: Mazowieckie (12.6 thousand) and Śląskie (9.1 thousand), while the lowest in the Voivodeships: Opolskie (2 thousand) and Lubuskie (2.1 thousand). The incidence rate in Poland was 213.5 cases per 100,000 inhabitants. The worst situation was in the Voivodeships: Podlaskie (270 cases per 100,000 inhabitants), Pomorskie (244), Mazowieckie (238). The lowest values of the incidence rates were recorded in the Voivodeships: Wielkopolskie (174), Świętokrzyskie (189), Małopolskie (191) and Śląskie (199).
9. The highest incidence of acquired heart defects in Poland in 2013 occurred in the Voivodeships: Śląskie (9.4 thousand) and Mazowieckie (7.1 thousand), while the lowest in the Voivodeships: Warmińsko-Mazurskie (1 thousand) and Świętokrzyskie (1.3 thousand). The incidence rate in Poland was 149.8 cases per 100,000 inhabitants. The highest value of the incidence rate were recorded in the Łódzkie Voivodeship (117). The lowest values of the incidence rates were recorded in the Voivodeships: Warmińsko-Mazurskie (70), Pomorskie (96).
10. The highest incidence of congenital heart defects in Poland in 2013 occurred in the Voivodeships: Śląskie (4.2 thousand) and Mazowieckie (3.7 thousand), while the lowest in the Voivodeships: Opolskie (0.4 thousand) and Świętokrzyskie (0.5 thousand). The incidence rate in Poland was 75.4 cases per 100,000 inhabitants. The highest values of the incidence rates were recorded in the Voivodeships: Podlaskie (164) and Kujawsko-Pomorskie (105). The lowest values of the incidence rates were recorded in the Voivodeships: Świętokrzyskie (40) and Opolskie (43).
11. The highest incidence of cardiomyopathy in Poland in 2013 occurred in the Voivodeships: Łódzkie (2.96 thousand) and Śląskie (2.59 thousand), while the lowest in the Voivodeships: Lubuskie (0.36 thousand) and Warmińsko-Mazurskie (0.42 thousand). The incidence rate in Poland was 47.9 cases per 100,000 inhabitants. The highest value of the incidence rate was recorded in the Łódzkie Voivodeship (117). The lowest values of the incidence rates were recorded in the Voivodeships: Lubelskie (27), Warmińsko-Mazurskie (29).

Death Rate due to Cardiac Diseases

1. Cardiac diseases were the most frequent cause of death of the inhabitants of Poland. In 2011-2013, they were responsible for 28% of all deaths of the country's inhabitants (27% in the case of men and 29.1% in the case of women). The real mortality rate due to cardiac diseases in Poland amounted to 278, wherein the highest value was recorded in the Mazowieckie Voivodeship and the lowest value in Małopolskie Voivodeship.
2. In Poland, the most frequent cause of death among cardiac diseases was ischaemic heart disease (41%). The real mortality rate for Poland was equal to 114.1. The value of the SMR index for lung diseases was highest in the Małopolskie Voivodeship (1.467) and lowest in the Lubelskie Voivodeship (0.62).
3. Pulmonary embolism was responsible for 2.2% of deaths caused by cardiac diseases in the years 2011-2013. The real mortality rate in Poland was equal to 6.2, and the highest value of the SMR index was recorded in the Małopolskie Voivodeship and Świętokrzyskie Voivodeship. In contrast, the lowest values were recorded in the Wielkopolskie Voivodeship and Lubuskie Voivodeship.
4. Heart failure and cardiomyopathies were responsible for 36.9% deaths due to cardiac diseases. The highest values of the SMR index were observed in the following Voivodeships: Łódzkie and Mazowieckie. In contrast, the lowest values were recorded in the Małopolskie Voivodeship and Podlaskie Voivodeship.
5. Atrial fibrillation and flutter caused 1.5% of all deaths due to cardiac diseases in Poland in the years 2011-2013. The highest values of the SMR index were recorded in the Voivodeships: Warmińsko-Mazurskie and Lubelskie, and the lowest in the Voivodeships: Małopolskie and Pomorskie.

Part II

Status and Use of Resources: the Analysis

Inpatient Healthcare

1 Hospitals Providing Cardiological Treatment

1. In 2013 in Poland, 575 hospitals provided cardiological treatment. The largest number of providers is located in large cities, primarily in Warsaw (28), Katowice (12), Łódź (13), Cracow (11), Wrocław (11) and Poznań (11). A large density of hospitals can be noticed in the Śląskie Voivodeship, in which there are many city counties, and in most of them there are more than two service providers.
2. Out of all hospitals accounting for cardiological healthcare services, 263 healthcare providers treated 80% of patients with cardiological diagnoses.
3. The most patients were admitted to the Cardinal Wyszyński Institute of Cardiology (over 12.4 thousand). In total, this represents 2.1% of hospitalized patients with a cardiac diagnosis on a national scale. The next three largest entities in terms of the number of patients for whom cardiological services were provided are the Clinical Hospital No. 7 of the Silesian Medical University in Katowice Prof. Leszek Giec Upper-Silesian Medical Centre, the Silesian Center for Heart Diseases in Zabrze and the John Paul II Specialist Hospital in Cracow. The first of them admitted almost 10.4 thousand cardiac patients (1.7% of cardiac patients in the country), the second almost 8 thousand patients (1.3%) and the third almost 7.7 thousand. patients (1.3%). The share of patients of not less than 1% in the national scale was observed in one more institution. It was the Military Memorial Medical Academy – Central Veterans' Hospital in Łódź.
4. There were no significant migrations of patients. The percentage of patients from outside of the voivodeship treated in the voivodeship ranged in most cases within 5-10%. Also, the percentage of patients leaving the voivodeships in most cases ranged within 5-10%.
5. There are 7811 hospital beds in all cardiological wards in Poland (20.29 / 100,000 inhabitants). In addition, 1195 beds are located in cardiology intensive care wards (3,1 / 100,000 inhabitants), 2,642 in the cardiological rehabilitation wards (6,86 / 100,000 inhabitants) and 1,003 in the cardiac surgery wards (2,61 / 100,000 inhabitants).
6. Further analysis was carried out for 14 healthcare service providers who treated over 4,000 patients.
7. In the analysed 14 hospitals, in internal medicine wards 3,590 patients with a cardiological diagnosis were treated (3.9% of all cardiac patients in these hospitals), in cardiological wards - 70,148 patients (76.8%), and in cardiac surgery wards - 13,646 patients (14.9% of all cardiac patients). In hospitals with cardiological and internal medicine wards, 59.9% to 85.6% of patients with cardiological diagnoses are treated in cardiological wards.
8. In the analysed 14 hospitals most patients (36.65 thousand) were hospitalised with the diagnosis "Other forms of heart disease", which accounts for 33.9% of all cardiological hospitalisations in the analysed hospitals. Then successively, ACS - 21.62 thousand hospitalisations (20%), other rhythm and conduction disturbances (12.4 thousand hospitalisations - 11.5%), acquired heart defects (12.33 thousand - 11.4% of hospitalisations), heart failure (11.27 thousand - 10.4%), atrial fibrillation and flutter (10.57 thousand hospitalizations - 9.8%).
9. The most frequently performed procedure among the 14 analysed healthcare service providers was coronography (44.03 thousand in total). Coronary angioplasty (24.48 thousand) and implantation of pacemakers (7,772 in total) followed.

10. Diagnosis-related groups (DRG) for conservative treatment reported by these providers were analysed in terms of the mean hospitalization time. The mean value for chosen providers was a little over 6 days, while the median exceeded 7.5 days. It is due to the fact, that among three providers from this group with the highest number of hospitalizations the mean hospitalization time ranged within 5 and 6.5 days.
11. The next analysed aspect is the percentage of performed angioplasties in all the ACS cases. While the mean value for the country is 63%, in the analysed group of providers it was only 59%. Also in the case of this indicator there were discrepancies - the minimum value was lower than the maximum by 24 percentage points.
12. In 2013, the top 14 healthcare service providers in Poland reported over 72 thousand surgical DRG and over 36 thousand conservative DRG (the ratio was 2:1). The median of surgical DRG in this group was 4.6 thousand and the median for conservative DRG near to 2.4 thousand.
13. The data indicates that in each diagnosis of ACS (STEMI infarction, NSTEMI infarction, UA) and in each age group the mortality among patients who weren't cardiologically rehabilitated was clearly higher than the mortality in the rehabilitated group (regardless of the number of months passing from the coronary angioplasty). The differences reach up to 123% (STEMI infarction). These results should be the basis for changes in the field of cardiological rehabilitation in Poland.

2 Paediatric Cardiology

1. Most centres hospitalizing children with cardiac diseases existed in the Voivodeships: Mazowieckie (41), Wielkopolskie (30) and Dolnośląskie (29). The lowest number of such centres was recorded in the Voivodeships: Lubuskie (8), Świętokrzyskie (9) and Opolskie (10).
2. The hospital that admitted the most newborns (1-28 days of age) was the Children's Memorial Health Institute in Warsaw (114 patients). A significant number of patients at this age were also reported in the Karol Jonscher Clinical Hospital in Poznań (102), the University Children's Hospital in Lublin (96) and the Children's Hospital in Cracow (90).
3. Infants with cardiac diseases aged 29-364 days were treated in the highest number in the Karol Jonscher Clinical Hospital in Poznań (675 patients). A significant number of patients at this age were also reported in the Independent Public Children's Clinical Hospital in Warsaw (412) and the Children's Memorial Health Institute in Warsaw (372).
4. The majority of children with cardiac diseases aged 1-17 years were treated in the Independent Public Children's Clinical Hospital in Warsaw (1,462 patients). Over a thousand patients at this age were also hospitalized at the Polish Mother's Memorial Hospital Research Institute in Łódź (1,377), the Children's Memorial Health Institute in Warsaw (1 265) and in the Karol Jonscher Clinical Hospital in Poznań (1,137 patients).

3 Adult Cardiac Surgery

1. The number of cardiosurgical operations in adults in Poland is stable, although the structure of performed procedures changes towards valvular surgery and combined surgery. In 2013, 22,290 cardiosurgical operations were performed in adults. In Poland, in 2013, there were 32 centres for adult cardiac surgery, and in 2013 - 31 (in 2015, the number decreased to 30).
2. In each voivodeship there is at least one centre, in the majority of provinces there are several[4]. The largest number of cardiac surgery centres in 2013 and 2014 were in the Mazowieckie (6) and Śląskie (4) Voivodeships. In 2013, the largest number of cardiosurgical operations was carried out by the Upper-Silesian Medical Centre Hospital in Ochojec (2 434), and in 2014 the Silesian Center for Heart Diseases in Zabrze (2,207).

[4]All public cardiac surgery centres throughout the country have the possibility of conducting extracorporeal oxygenation (ECMO).

4 Paediatric Cardiac Surgery

1. In Poland, there are 9 centres of paediatric cardiac surgery, including one non-public, in which in 2014 a total of 2,730 congenital heart defect operations were performed, including 1860 operations in extracorporeal circulation and 870 without it. These facilities have 12 operating rooms and 66 intensive postoperative therapy stations. In paediatric centres there are 43 specialists employed in the field of cardiac surgery, including 11 independent science workers, as well as 34 cardio-anaesthesiologists and 30 perfusionists.
2. Most newborns (1-30 days of age) were treated at the University Children's Hospital in Cracow and the Children's Memorial Health Institute in Warsaw, the largest number of infants (30-365 days of age) at the Polish Mother's Memorial Hospital Research Institute in Łódź and children (1-18 years of age) at the Children's Memorial Health Institute.
3. The number of performed congenital heart defects operations has not changed significantly since 2008 (2 215). In Year 2014, the largest number of congenital heart defects operations was performed in Poland, i.e. 2,730 (in 2013, 2,445 were performed).
4. Taking into account the prevalence of congenital heart defects, i.e. about 8 per 1000 live births, as well as the number of births in Poland in 2014 (about 350 thousand), approximately we can assume that there are around 2800 children born in Poland with congenital heart defects, a number close to the number of operations performed. At the same time, we have a situation in which 20 - 25% of congenital defects occur in newborns with so-called duct dependent congenital heart disease, which require surgery in the first days after birth (life indications). For many years, the number of these operations has been fairly constant and ranges between 550 and 650.
5. Performing the most complex heart surgery in newborns is distributed very unevenly. They are mainly carried out in 4 centres, i.e .: the Children's Memorial Health Institute (IPCZD) in Warsaw, the University Children's Hospital in Cracow, Polish Mother's Memorial Hospital Research Institute (ICZMP) in Łódź, the Upper Silesian Child Health Centre in Katowice. Also, the most difficult and the most risky Norwood operations in the hypoplastic left heart syndrome are performed mainly in 3 centres, i.e. IPCZD, ICZMP and the University Children's Hospital in Kraków. These 3 centres and the COPERNICUS Podmiot Leczniczy Sp. z o.o. in Gdańsk belong to the so-called group of High Volume Centers, in which over 350 congenital heart defects operations are performed annually.
6. The specificity of Polish cardiac surgery is the fact that children with all, even the most complex types of congenital heart defects, including the ones with an univentricular heart, are born and treated surgically. The percentage of operations in neonates with an univentricular heart compared to all operated neonates is 30%. The most frequently performed heart surgery on a newborn in Poland in 2014 was the Norwood operation.

Outpatient Specialist Services

1. In 2013, in Poland there were 2,424 Specialised Outpatient Care Facilities (SOCFs) where cardiological treatment was provided[5]. In 367 counties in Poland there was at least one SOCF providing cardiological healthcare services. Most providers were located in large cities: Warsaw (106), Łódź (62), Poznań (61), Cracow (59) and Wrocław (55).
2. Migration of patients between voivodeships in the case of SOCFs was not large. Migrants constituted from 1% (Śląskie Voivodeship) to 7% (Świętokrzyskie and Warmińsko-Mazurskie Voivodeships) of patients with cardiac diseases treated in the voivodeship.

[5] Number of healthcare providers who admitted patients with cardiological diagnoses. This is different from the number of SOCFs having a contract in the field of cardiology and cardiac surgery.

Medical Staff [6]

Cardiologists

1. In 2013, in the database of the Polish Chamber of Physicians and Dentists (NIL), 3,636 cardiologists were registered. Most of them in the Mazowieckie Voivodeship (638), and the least in the Voivodeships: Lubuskie and Podlaskie (65).
2. In 2013, the highest number of cardiologists per 100 thousand of the adult population (over 18 years of age) was in the Łódzkie Voivodeship, and least in the Wielkopolskie Voivodeship.
3. The smallest number of contracts per cardiologist was recorded in the Lubuskie Voivodeship (1.06 contracts per physician), while the highest in the Śląskie Voivodeship (2.7 contracts per physician).
4. In 2013 most practising cardiologists were in the 40-45 age range.

Cardiac Surgeons

1. In 2013, in the NIL database, 366 cardiac surgeons were registered. Most of them in the Mazowieckie Voivodeship (69), and the least in the Podlaskie Voivodeship (5).
2. In 2013, the highest number of cardiac surgeons per 100 thousand of the adult population (over 18 years of age) was in the Śląskie Voivodeship, and least in the Podlaskie Voivodeship.
3. The smallest number of contracts per cardiac surgeon was recorded in the Voivodeships: Lubuskie, Podlaskie and Warmińsko-Mazurskie (1 contract per physician), while the highest in the Zachodniopomorskie Voivodeship (2.56 contracts per physician).
4. In 2013 most practising cardiac surgeons were in the 40-45 age range.

Paediatric Cardiologists

1. In 2013, in the NIL database, 112 paediatric cardiologists were registered. Most of them were registered in the Mazowieckie Voivodeship (21), and in the Podkarpackie Voivodeship there were none.
2. In 2013, the highest number of paediatric cardiologists per 100 thousand of the adult population (over 18 years of age) was in the Łódzkie Voivodeship, and least in the Lubelskie Voivodeship.
3. The smallest number of contracts per paediatric cardiologist was recorded in the Voivodeships: Dolnośląskie, Lubuskie, Opolskie and Wielkopolskie (1 contract per physician), while the highest in the Łódzkie Voivodeship (3.39 contracts per physician).
4. In 2013 most practising paediatric cardiologists were in the 45-55 age range.

[6] The Ministry of Health directs special acknowledgements to the NIL for sharing data on the medical staff, which were used to prepare the analyses contained in this chapter.

[7] The number of physicians is not a unique number - if a physician works in several voivodeships, he is taken into account in each of them. The same applies in the case of specialization, if the doctor has several specializations, he is taken into account in each of them.

Cardiac Nurses

In 2015, there were 1,668[8] cardiology nurses in Poland, most of which were registered in the Mazowieckie Voivodeship (299), and the least in the Podlaskie Voivodeship (4). The dominant of the age group of nurses: 40-49 years.

[8] Nurses with the specialist title in cardiology nursing may work in a ward with a different profile than their field of specialization. In addition, in wards with a cardiological profile, apart from nurses with the specialist title in cardiology nursing, nurses also work without additional qualifications acquired as part of postgraduate education. Therefore, the numbers presented in the Figure (number of nurses with the specialist title in cardiology nursing) should not be interpreted as the actual number of nurses employed in the given field.

Part III

Healthcare Needs Forecast

Demographic Forecast

1. In the years 2014-2029, the population of Poland will decrease by 1.17 million people, which is about 3%. The gender-related structure in 2029 will be similar to 2014 (the predominance of women in the population). The population of Poland in 2029 will be on average older than in 2014.
2. It is expected that by 2029 the number of inhabitants of most voivodeships will decrease, with the exception of Mazowieckie (+ 1.69%), Pomorskie (+ 1.48%), Małopolskie (+ 1.12%) and Wielkopolskie (+ 0.12). Changes in the age structure of individual voivodeships will take place mostly in the same way as in the whole country.

Incidence Forecast

1. Cardiac diseases most often occur in the elderly, therefore, when dealing with the ageing process of the population, an increase in the number of new cases of cardiac diseases should be expected. According to estimations, the number of new patients with cardiac diseases will increase in the following years. In 2015 there will be 377 thousand patients suffering from at least one cardiological complaint and this number will increase up to 426 thousand in 2025. This means almost a 13% increase in 10 years.
2. Over the next decade, the number of cases of heart failure will increase the fastest. According to the forecast, 226 thousand people will be affected by it in 2015 and 258.1 thousand in 2025. A high incidence will also occur in the case of aortic aneurysm and atrial fibrillation and flutter. As for the growth in absolute terms, the highest will occur for the most common diseases, i.e. heart failure and ischaemic heart disease.
3. Analysing incidence in territorial aspects, the highest numbers of cardiac patients in 2025 should be expected in the following Voivodeships: Mazowieckie, Śląskie, Wielkopolskie and Małopolskie. The lowest values will be recorded recorded in the Voivodeships: Świętokrzyskie, Podlaskie, Opolskie and Lubuskie.
4. According to the forecast, the number of new cases of myocarditis and the number of patients with detected congenital heart disease will decrease. The explanation for the obtained results may be the fact that these diseases are characteristic for young patients, which results in a smaller number of predicted cases in the context of the increasing ageing process of the population.

Projected Number of Healthcare Services

1 Cardiological Services

1. In 2016-2029, a continuous increase in the demand for procedures in cardiological treatment is forecast. The projected demand for PCI in cardiological treatment will increase from 132.2 thousand in 2016 (most in the Śląskie Voivodeship - almost 18 thousand, least in the Opolskie Voivodeship - almost 4 thousand) to 159.2 thousand in 2029 (most in the Śląskie Voivodeship - over 20 thousand, least in the Opolskie Voivodeship - almost 5 thousand).
2. The projected number of pacemaker implantations/exchanges in 2016 is 32.2 thousand (most in the Mazowieckie Voivodeship – 5 thousand, least in the Opolskie Voivodeship - 0.6 thousand) and by 2029 it will increase to 43.7 thousand (most in the Mazowieckie Voivodeship and Śląskie Voivodeship – respectively 6.8 thousand and 6 thousand, least in the Opolskie Voivodeship - 0.8 thousand). In 2016, in Poland, the projected demand for CABG will be 18.7 thousand, and by 2029 it will increase to 22.2 thousand.

The voivodeship with the highest projected demand is the Śląskie Voivodeship - 4.3 thousand in 2016 and 4.8 thousand in 2029, the one with the lowest projected demand is the Warmińsko-Mazurskie Voivodeship - 0.35 thousand in 2016 and 0.42 thousand in 2029. One of the smaller increases in demand concerns ablation - an increase from 12 thousand in 2016 to the level of 12.5 thousand in 2029. The highest demand is forecasted in the Mazowieckie Voivodeship - 2.6 thousand in 2016 and 2.8 thousand in 2029, while the smallest in the Opolskie Voivodeship - a relatively constant number of 0.3 thousand in 2016 and 2029.

3. Based on the arrangements with the National Consultant, two scenarios were prepared - the number of tables needed, based on the demand for procedures, assuming an average of 2,000 treatments per table per year (desired value), and the number of tables needed resulting from the demand for procedures, assuming an average of 3,000 treatments per table per year (a value indicating the urgent need to expand the infrastructure). In Poland, over the forecasted years (2016–2029), alone changes in the structure of the population in relation to age, sex and place of residence will increase the demand for procedures implemented in haemodynamic laboratories by 20%. Considering the above, the demand for haemodynamic tables will systematically increase. However, when comparing the current resources (216 tables in the country according to the data available in the resources of the National and Voivodeship Consultant) to the desired resources, it should be stated that in the forecast period there is no urgent need to increase the number of haemodynamic tables in the country.

2 Adult Cardiac Surgery

The prognosis of healthcare needs in the field of adult cardiac surgery is based on changes taking place in the Demographic structure of the Polish population. Considering two main factors, i.e. decreasing population numbers and simultaneous ageing of the population, one should expect an increasing demand for cardiac surgery for acquired heart defects. The prognosis for 2016 predicts over 24.4 thousand cardiosurgical operations of acquired heart defects in Poland. Most patients will come from the Voivodeships: Mazowieckie (3.4 thousand) and Śląskie (3 thousand). The smallest number of cardiosurgical operations will be required by the inhabitants of the Voivodeships: Lubuskie (0.6 thousand) and Opolskie (0.7 thousand). In 2029, the total number of acquired defects requiring cardiosurgical operations in Poland will exceed 25.6 thousand. Similar as in 2016, the majority of patients will come from the voivodeships with the largest population, i.e. Mazowieckie (3.7 thousand) and Śląskie (3 thousand), and the smallest number of cardiosurgical operations will be required by the inhabitants of the Voivodeships: Lubuskie (0.7 thousand) and Opolskie (0.6 thousand). The largest increase in the number of required cardiosurgical operations between 2016 and 2029 will be observed in the Voivodeships: Pomorskie (9%), Mazowieckie and Wielkopolskie (8% each).

3 Paediatric Cardiac Surgery

In the literature, it is usually assumed that the percentage of newborns with congenital heart defects requiring surgery in the first days after birth (duct dependent congenital heart disease and some others) is around 20%. Based on this assumption, the numbers of operations in neonates with congenital heart defects for 2016 and 2029 were predicted. Based on the adopted assumptions, it is forecasted that the largest number of operations in neonates with congenital heart defects in 2016 will be carried out in the Voivodeships: Mazowieckie (85) and Śląskie (63), while the smallest in Opolskie (12) and Lubuskie (15). The projected number of these operations in 2029 will be lower, but the most will still be carried out in the Mazowieckie (71) and Śląskie (50) Voivodeships, and the least in the Opolskie (9) and Lubuskie (12) Voivodeships. This is due to the fact that the method of predicting the number of operations in neonates with congenital heart defects, drawn from the literature, takes into account an even number of children requiring surgery, and the number of births in this period will systematically decrease.

Attachments

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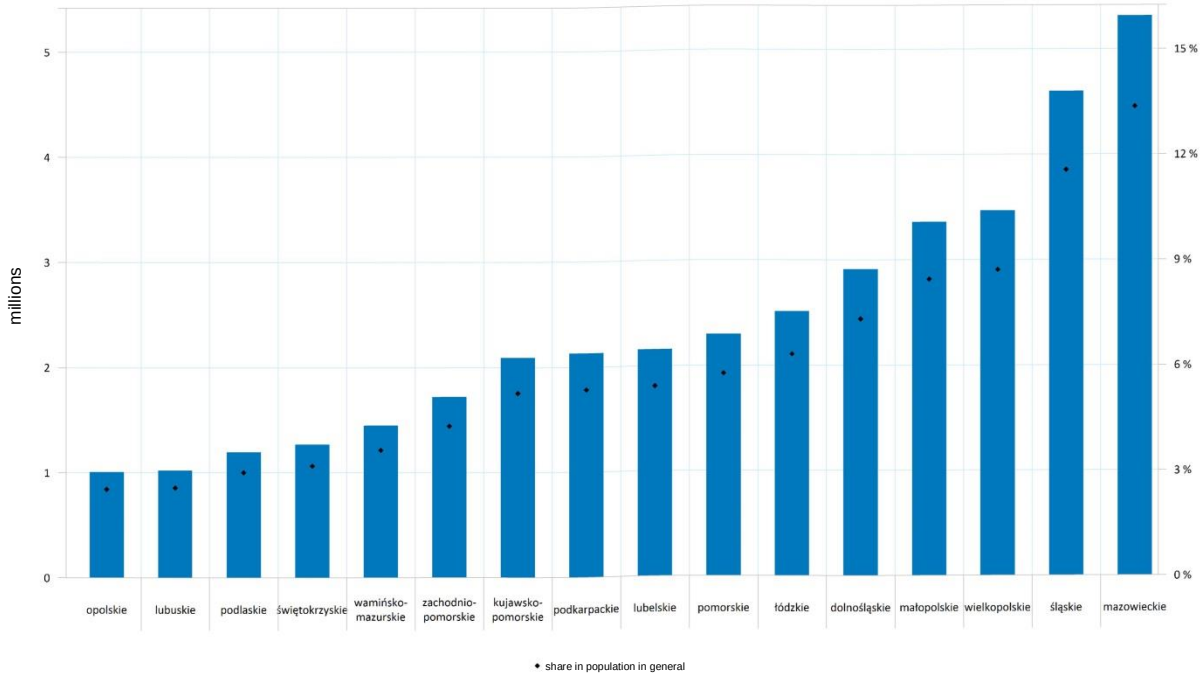
Attachments to Part I

Demographic and Epidemiological Aspects

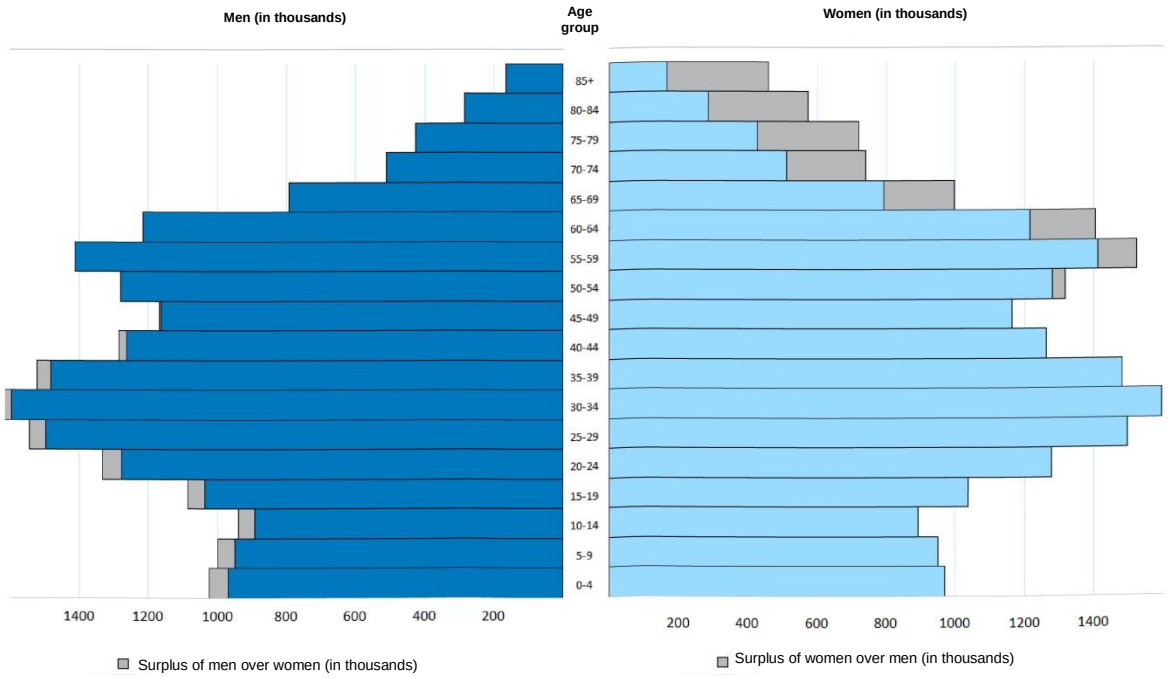
1.1 Voivodeship Population Breakdown

Figure 1: Population in Poland by voivodeship (2013)



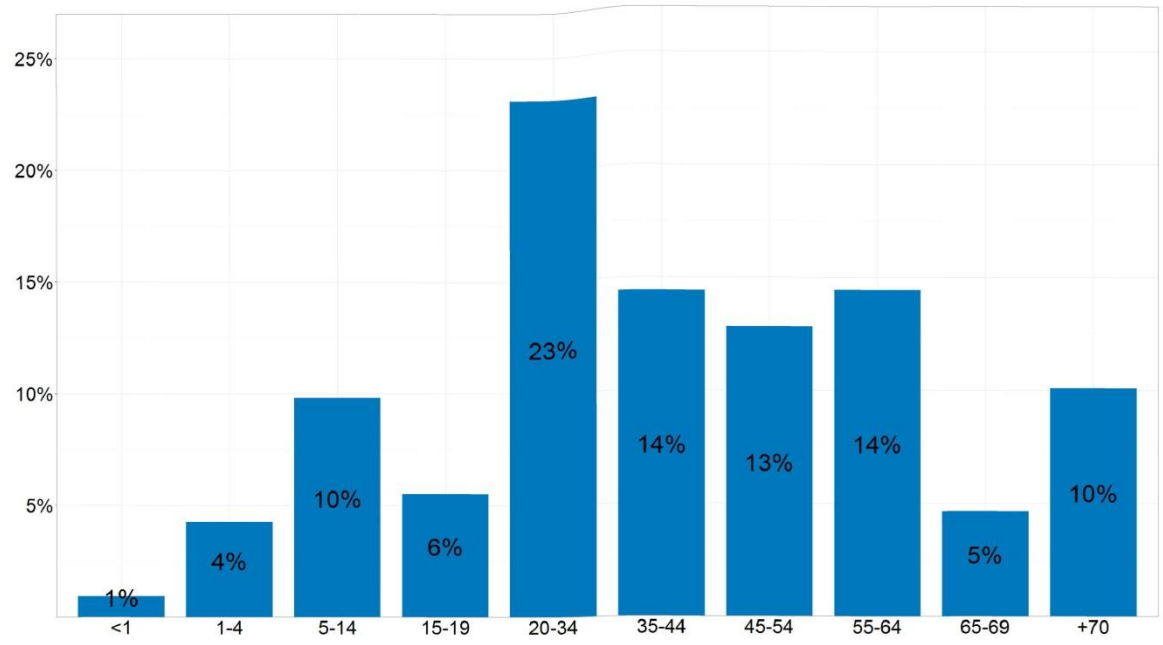
Source: compiled based on data extracted from the Local Data Bank of the Central Statistical Office (GUS)

Figure 2: Population breakdown according to sex and age in Poland (2013)



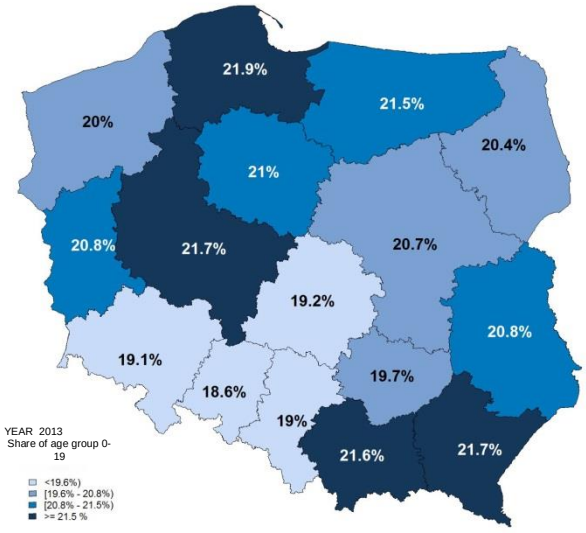
Source: compiled based on data extracted from the Local Data Bank of the GUS

Figure 3: Population breakdown according to sex and age in Poland (2013)



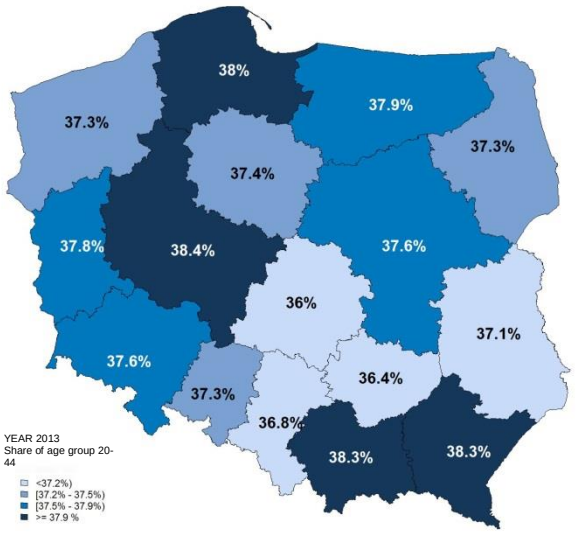
Source: compiled based on data extracted from the Local Data Bank of the GUS

Figure 4: Share of persons under 19 years of age in the counties of the Wielkopolskie Voivodeship (2013)



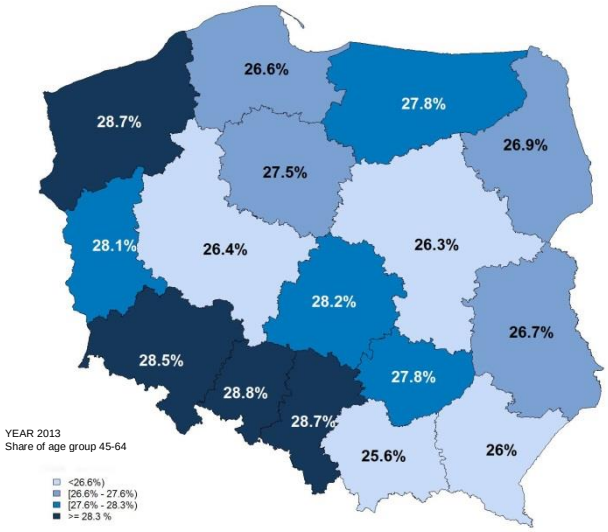
Source: compiled based on data extracted from the Local Data Bank of the GUS

Figure 5: Share of persons aged 20-44 in the counties of the Wielkopolskie Voivodeship (2013)



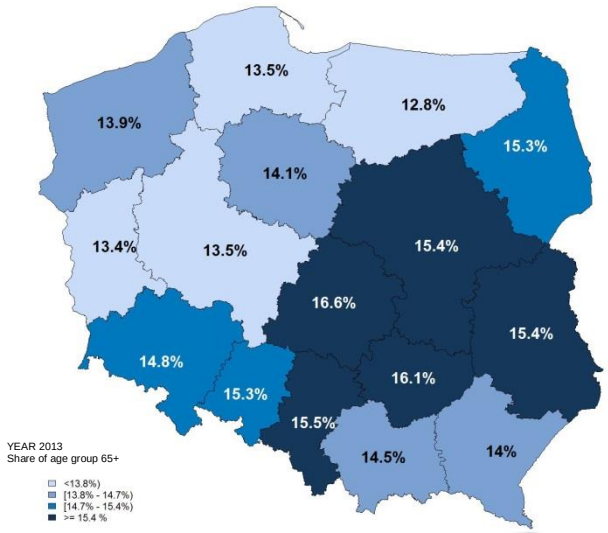
Source: compiled based on data extracted from the Local Data Bank of the GUS

Figure 6: Share of persons aged 45-64 in the counties of the Wielkopolskie Voivodeship (2013)



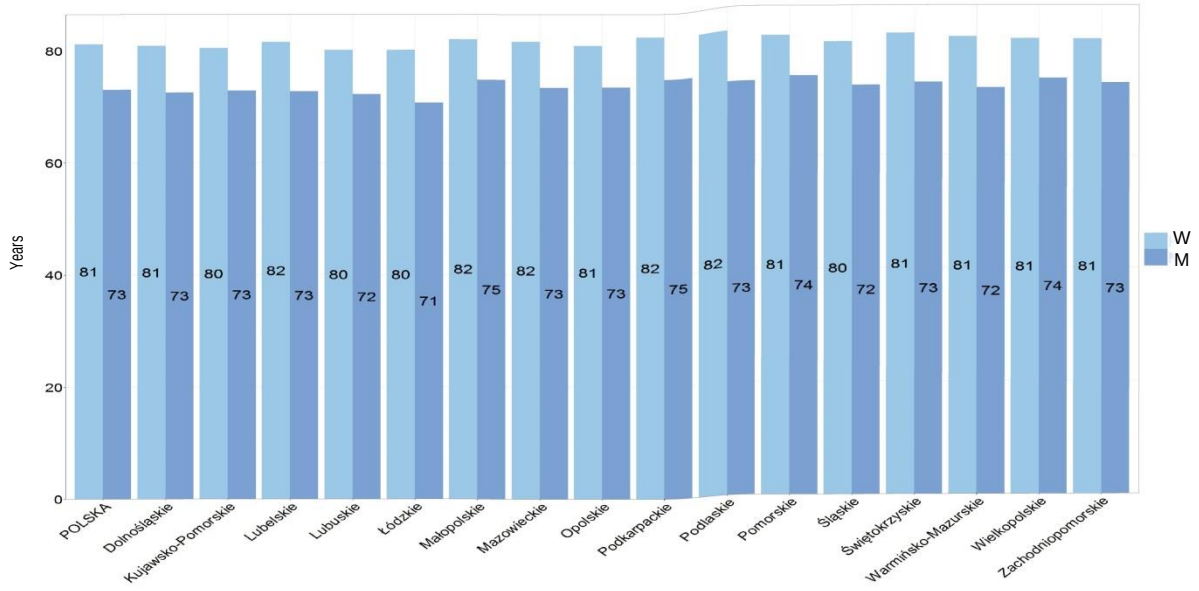
Source: compiled based on data extracted from the Local Data Bank of the GUS

Figure 7: Share of persons over 65 years of age in the counties of the Wielkopolskie Voivodeship (2013)



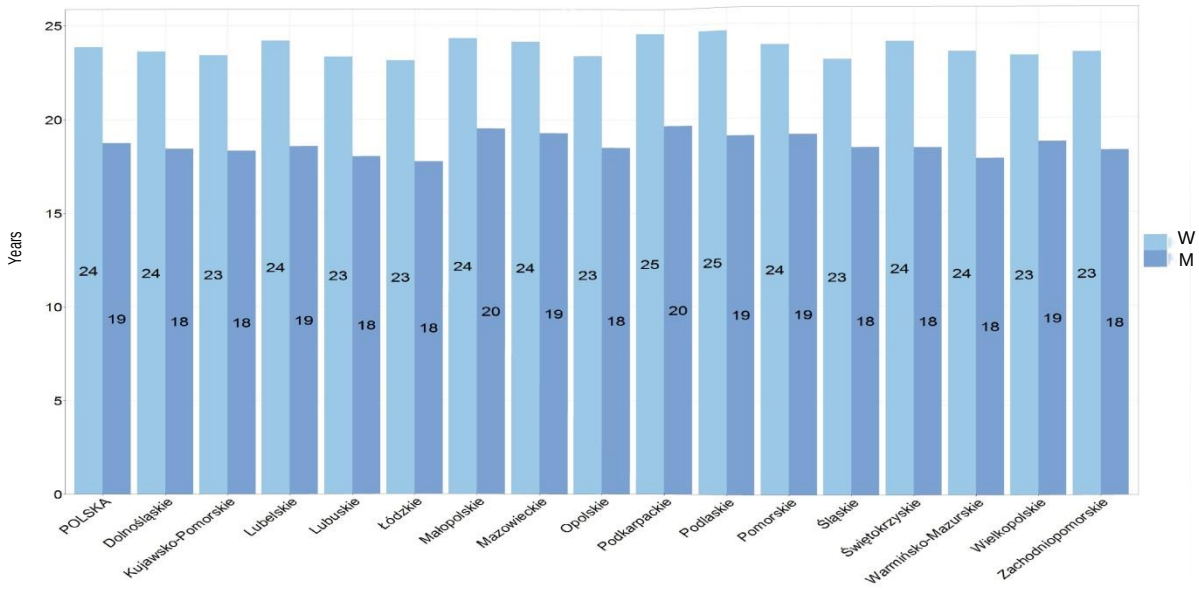
Source: compiled based on data extracted from the Local Data Bank of the GUS

Figure 8: Average life span by voivodeship (2013)



Source: compiled based on data extracted from the Local Data Bank of the GUS.

Figure 9: Average life expectancy of a 60-year-old by voivodeship (2013)



Source: compiled based on data extracted from the Local Data Bank of the GUS

Figure 10: Fertility rate and births by voivodeship (2013)

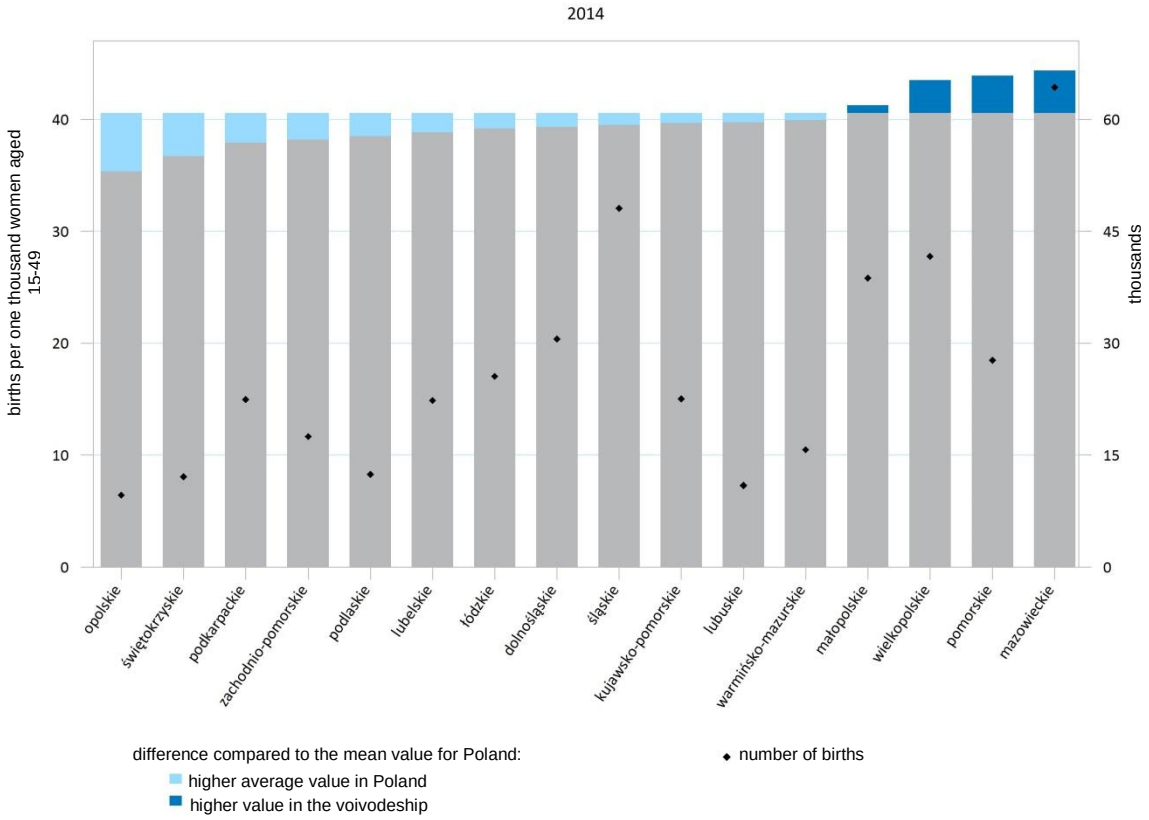
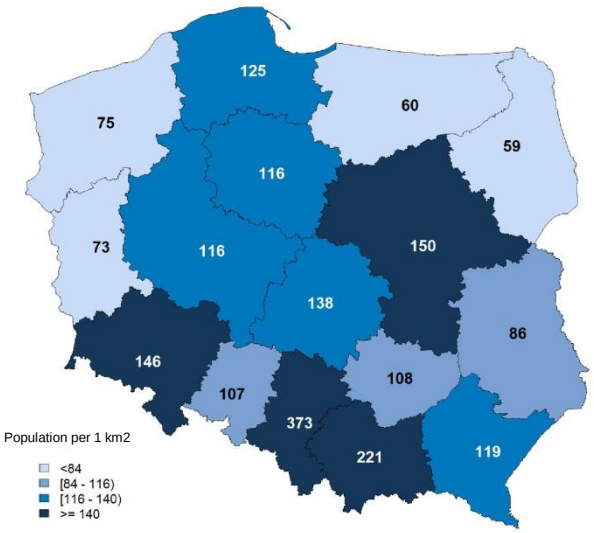


Figure 11: Population density by voivodeship (2013)



Source: compiled based on data extracted from the Local Data Bank of the GUS

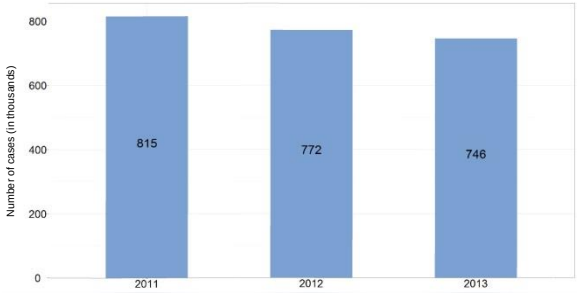
1.2 New Cases of Cardiac Diseases

Table 1: New patients and new cardiological cases in the years 2011-2013

	2011	2012	2013
New cardiological	815,057	772,308	745,830
Patients	432,673	382,890	367,065

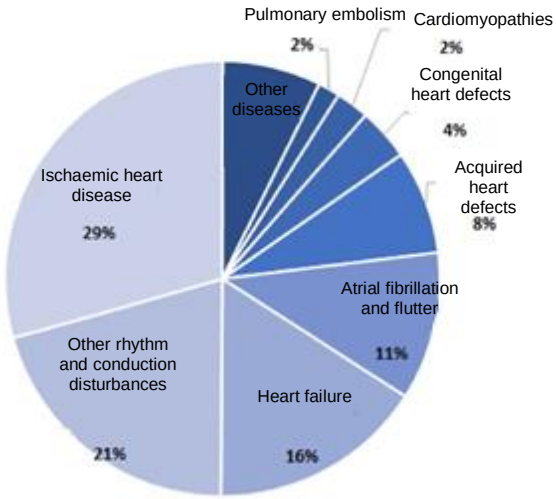
Source: compiled based on data provided by the NFZ

Figure 12: Total number of new cardiological cases in 2011-2013



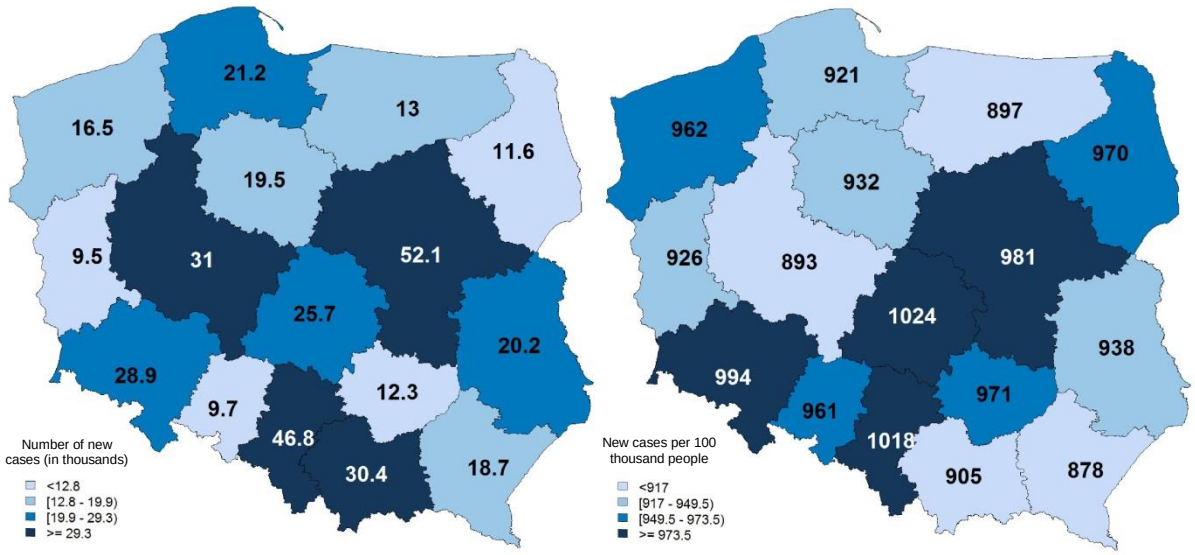
Source: compiled based on data provided by the NFZ

Figure 13: Cardiological cases breakdown in 2013



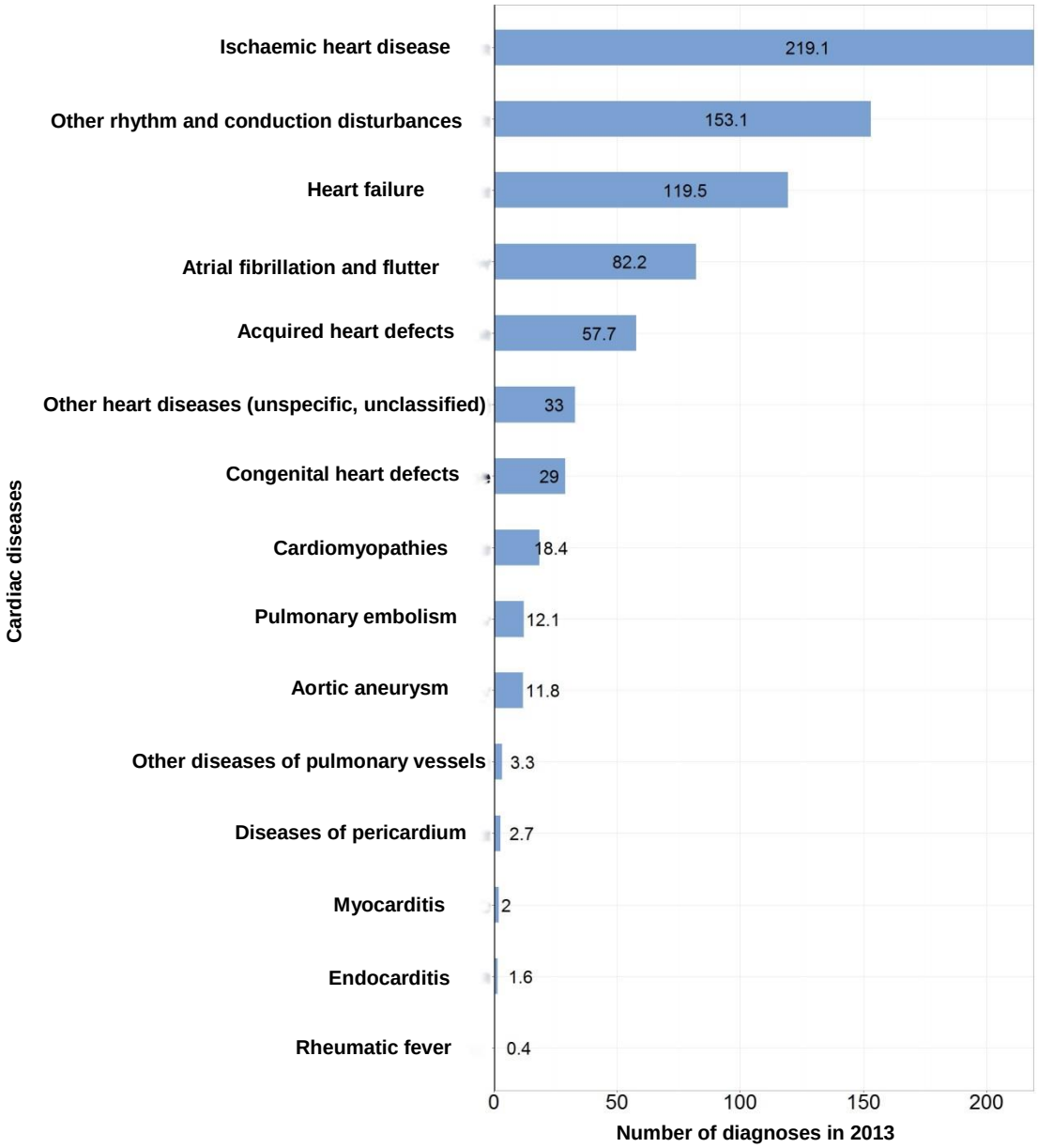
Source: compiled based on data provided by the NFZ

Figure 14: Number of new cases (left-hand map) and incidence (right-hand map) in each voivodeship in 2013



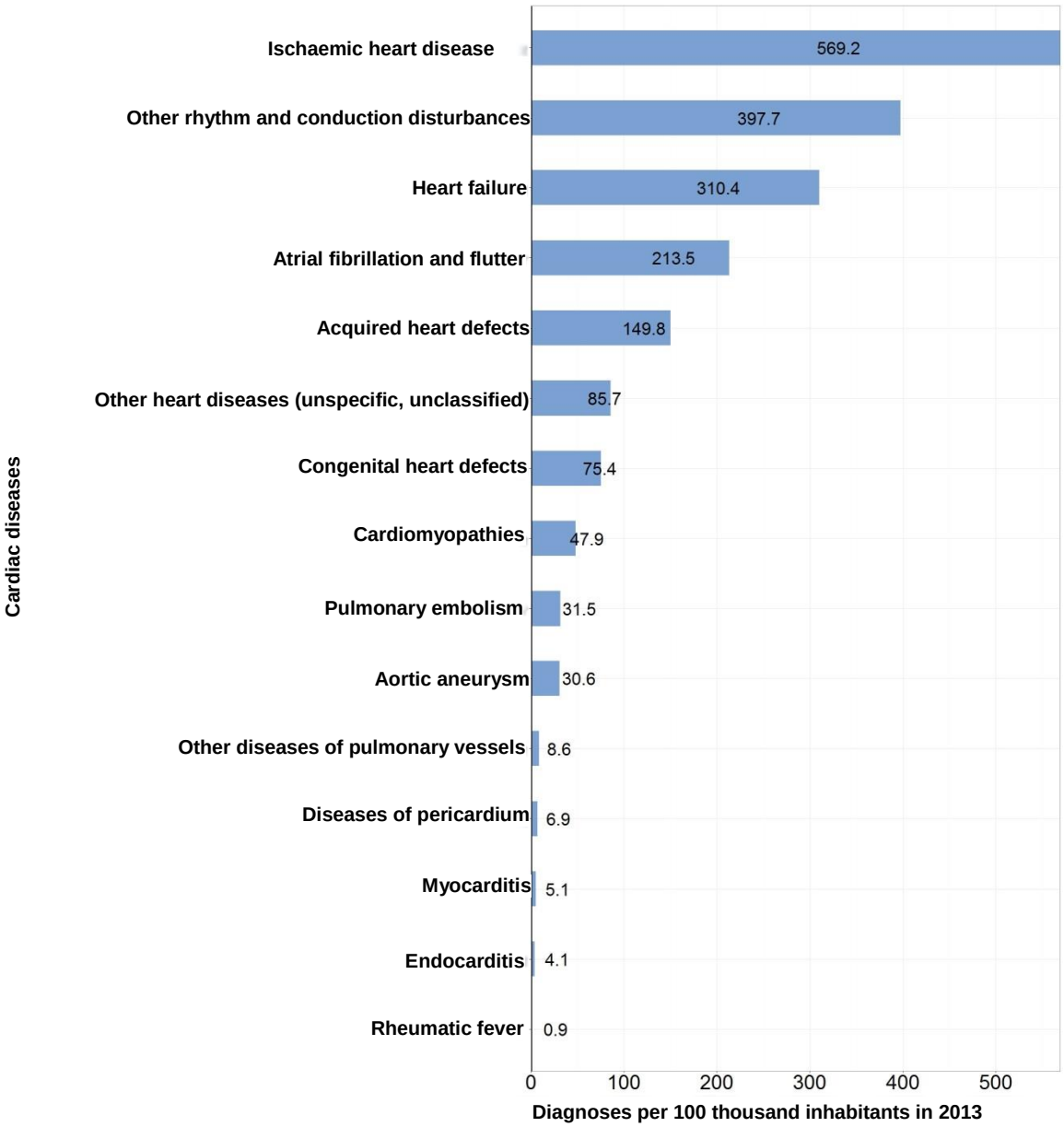
Source: compiled based on data provided by the NFZ

Figure 15: Number of new cardiological cases in Poland in 2013



Source: compiled based on data provided by the NFZ

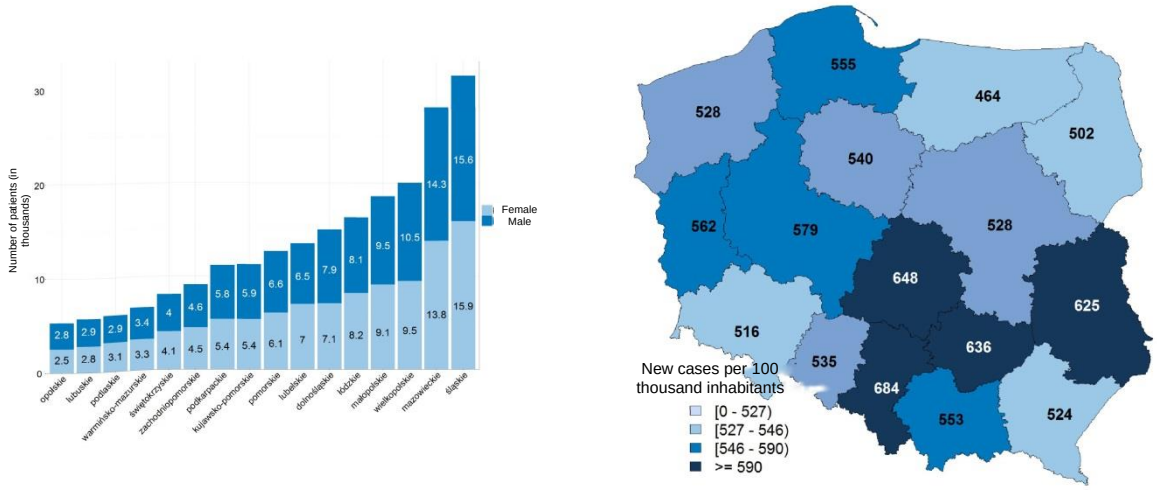
Figure 16: Incidence of cardiac diseases in Poland in 2013



Source: compiled based on data provided by the NFZ

Ischaemic heart disease (CHNS)

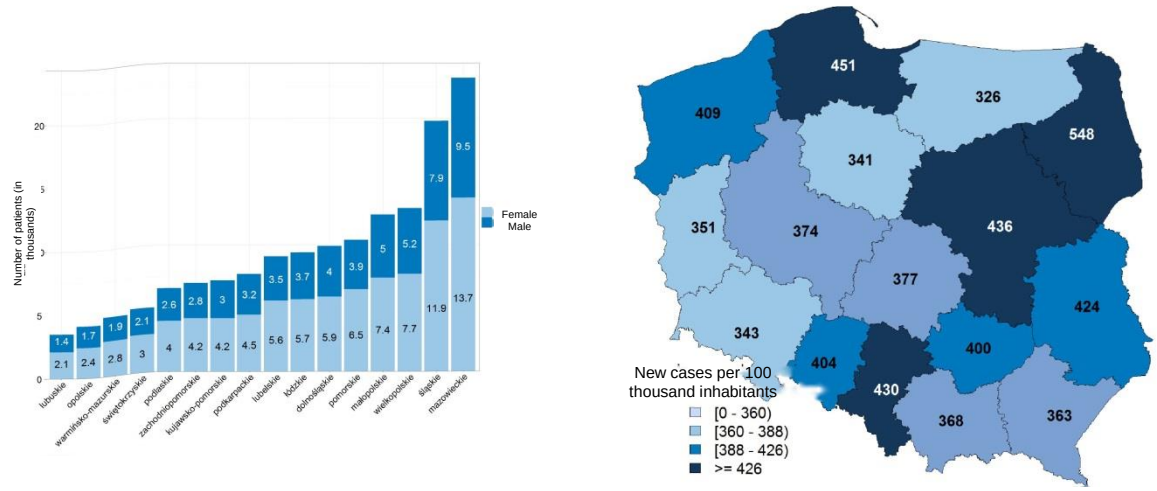
Figure 17: Number of new cases (in thousands) according to sex (chart) and incidence (map) per voivodeship (2013)



Source: compiled based on data provided by the NFZ

Other rhythm and conduction disturbances

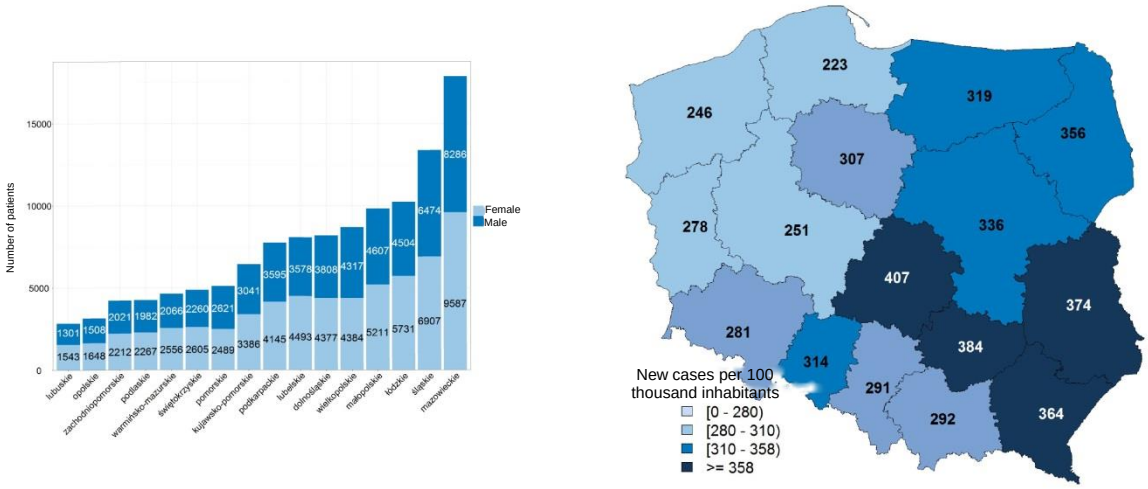
Figure 18: Number of new cases (in thousands) according to sex (chart) and incidence (map) per voivodeship (2013)



Source: compiled based on data provided by the NFZ

Heart failure

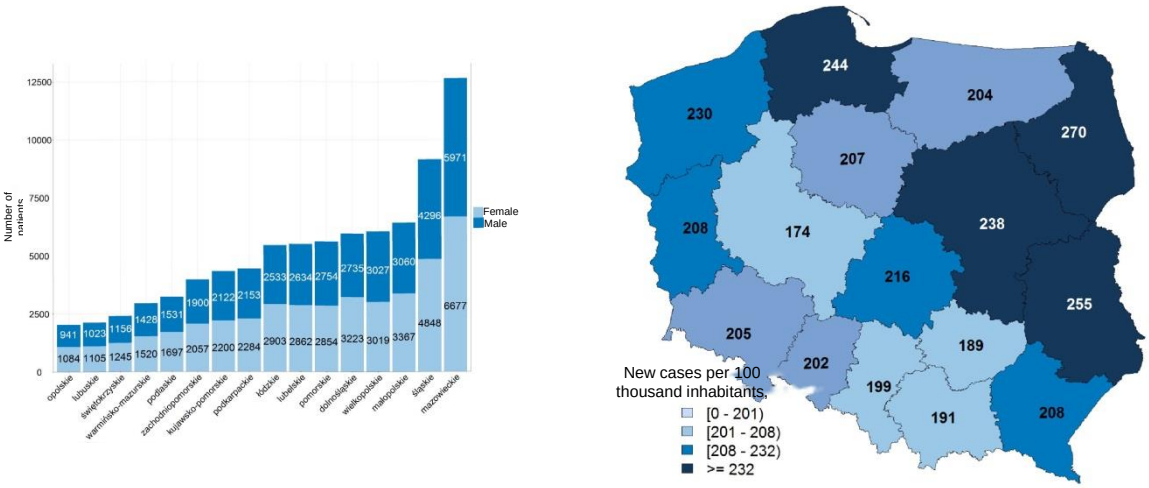
Figure 19: Number of new cases (in thousands) according to sex (chart) and incidence (map) per voivodeship (2013)



Source: compiled based on data provided by the NFZ

Atrial fibrillation and flutter

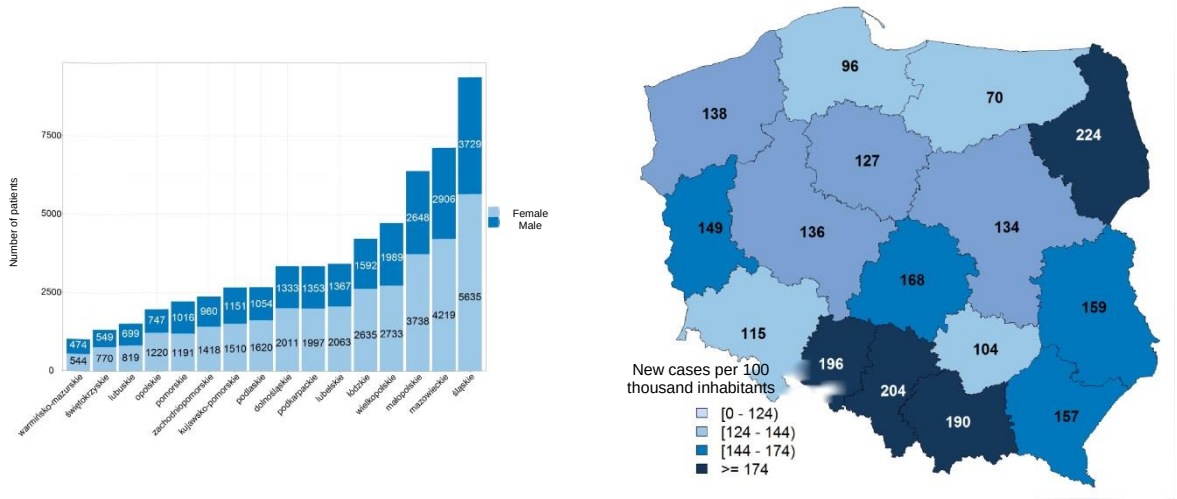
Figure 20: Number of new cases (in thousands) according to sex (chart) and incidence (map) per voivodeship (2013)



Source: compiled based on data provided by the NFZ

Acquired heart defects

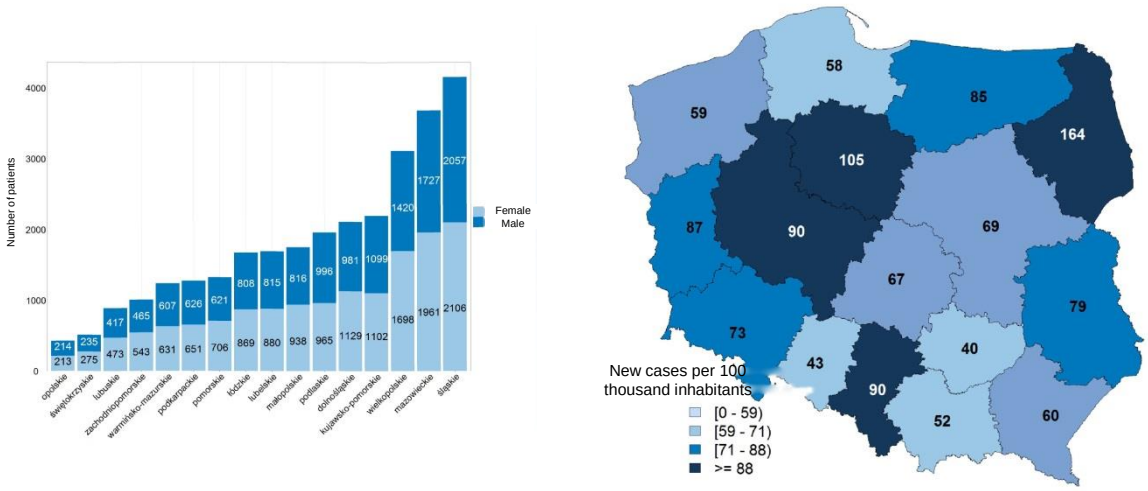
Figure 21: Number of new cases (in thousands) according to sex (chart) and incidence (map) per voivodeship (2013)



Source: compiled based on data provided by the NFZ

Congenital heart defects

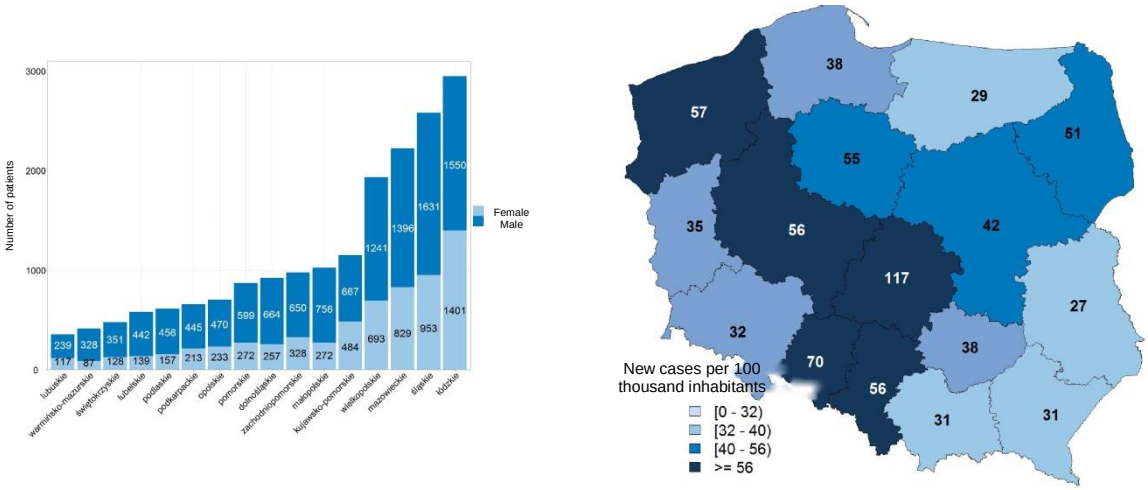
Figure 22: Number of new cases (in thousands) according to sex (chart) and incidence (map) per voivodeship (2013)



Source: compiled based on data provided by the NFZ

Cardiomyopathies

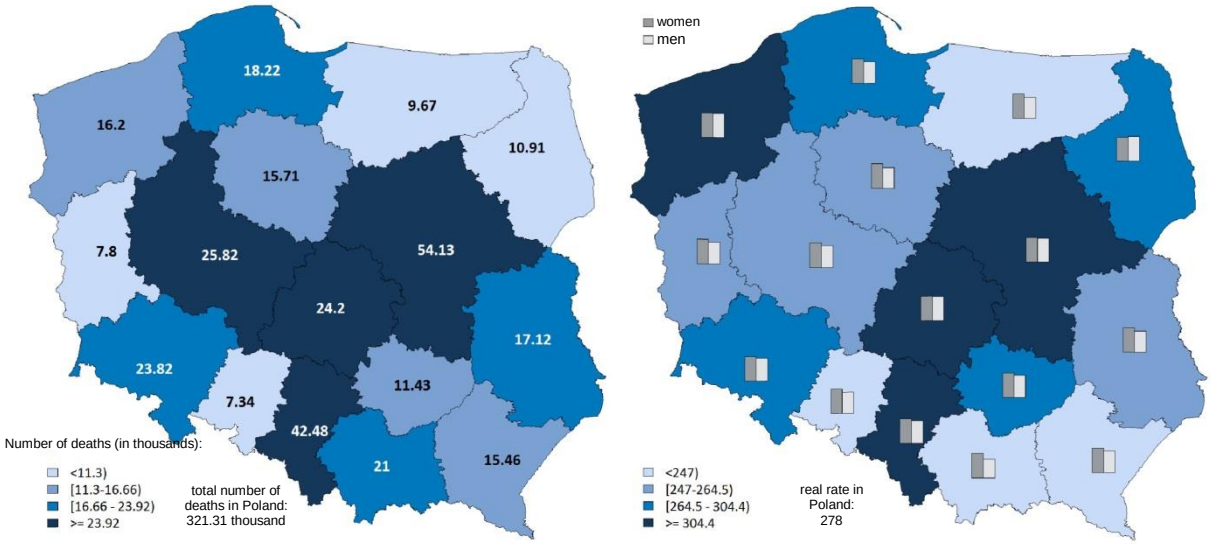
Figure 23: Number of new cases (in thousands) according to sex (chart) and incidence (map) per voivodeship (2013)

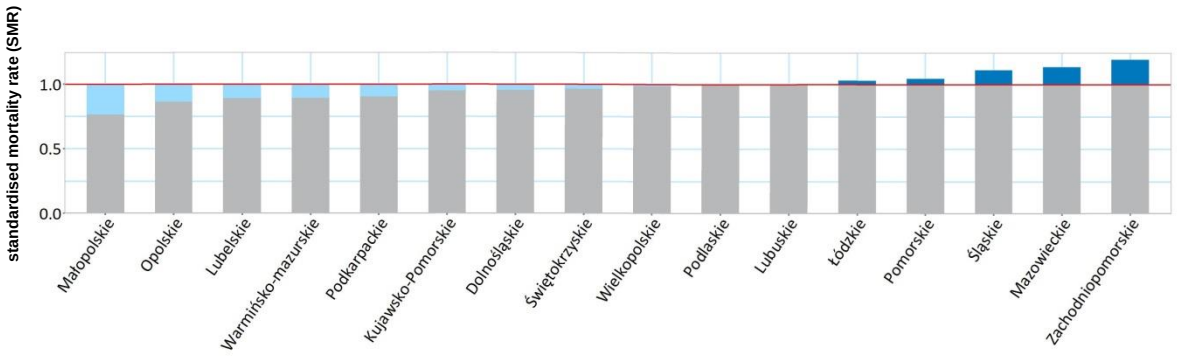


Source: compiled based on data provided by the NFZ

1.3 Deaths due to cardiac diseases in the voivodeship

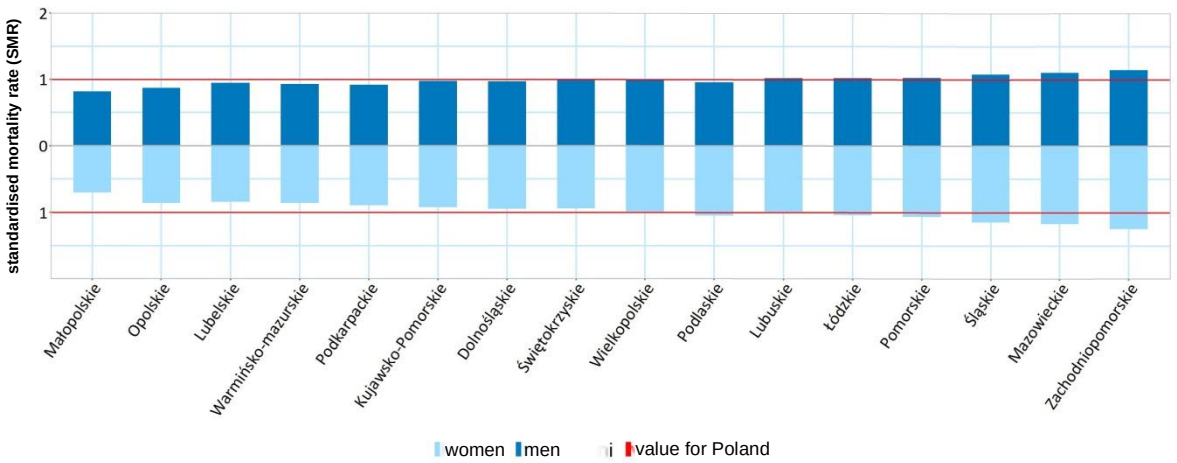
Figure 24: Deaths due to cardiac diseases in general (I00–I51, Q20–Q26) (2011– 2013)





difference compared to the rate value for the voivodeships:

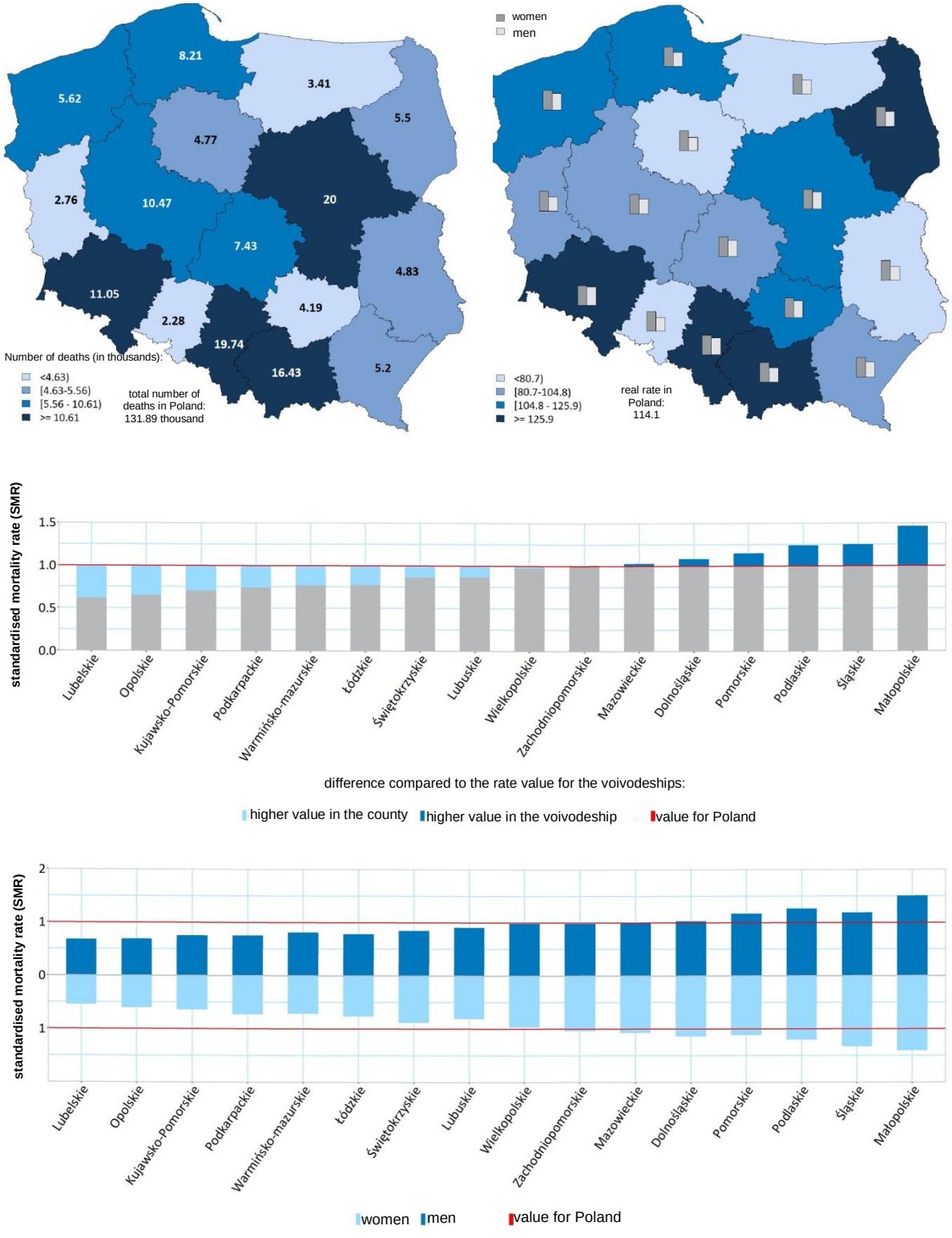
higher value in the county | higher value in the voivodeship | value for Poland



women | men | value for Poland

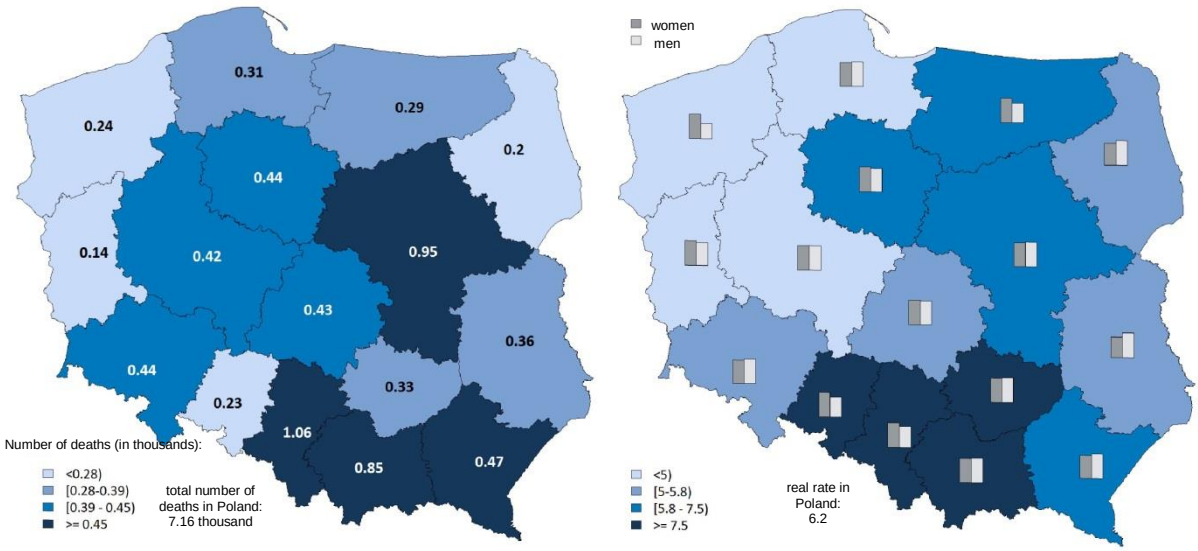
Source: based on data provided by the National Public Health Institute – National Institute of Hygiene (NIZP-PZH).

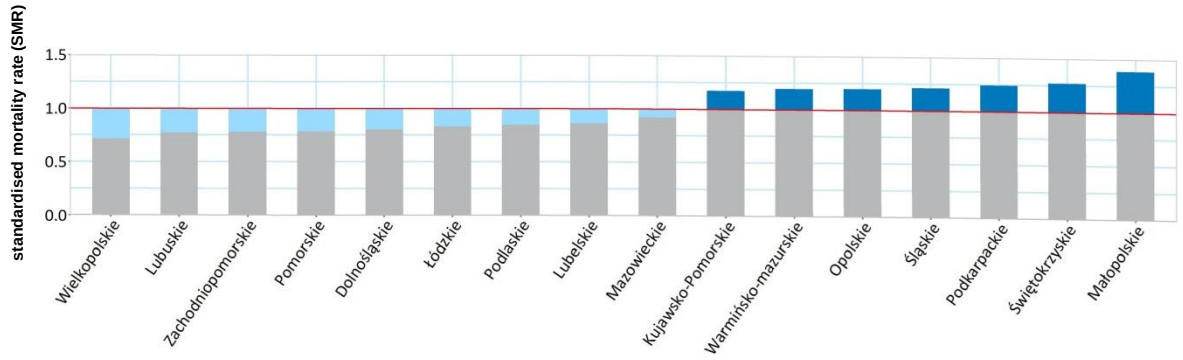
Figure 25: Deaths due to ischaemic heart disease (I20–I25) (2011-2013)



Source: based on data provided by the National Public Health Institute – National Institute of Hygiene.

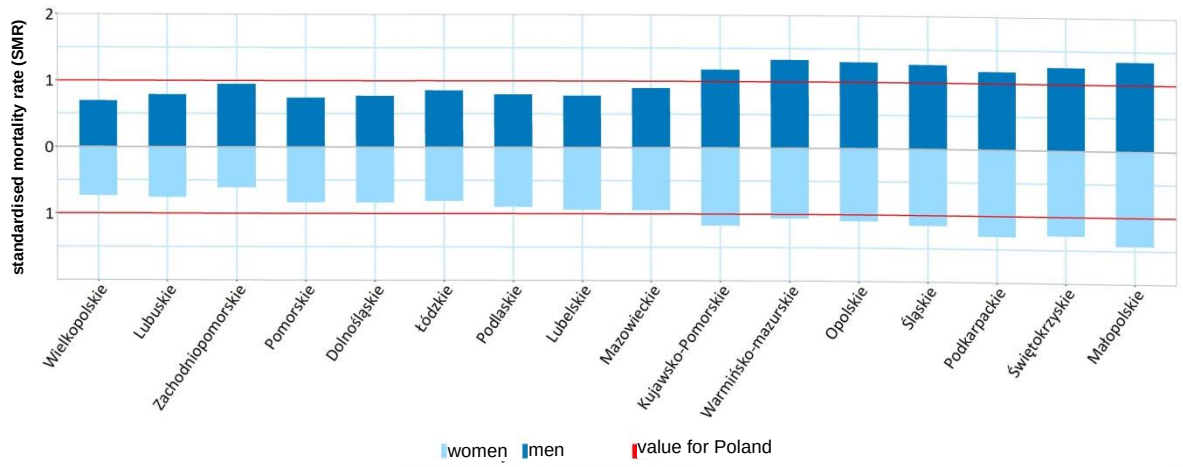
Figure 26: Deaths due to pulmonary embolism (126) (2011-2013)





difference compared to the rate value for voivodeships:

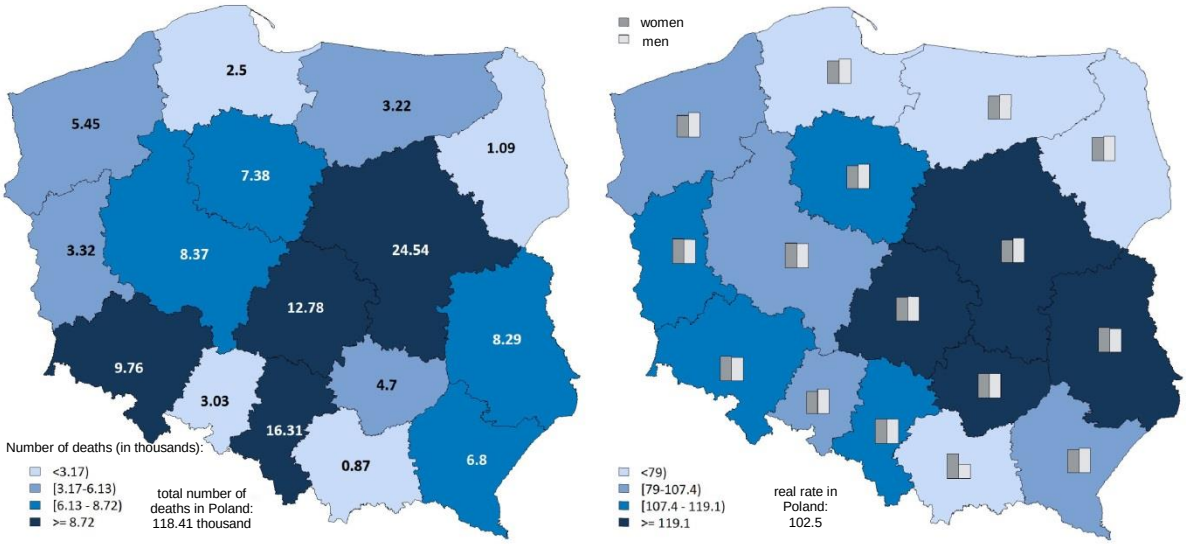
higher value in the county | higher value in the voivodeship | value for Poland

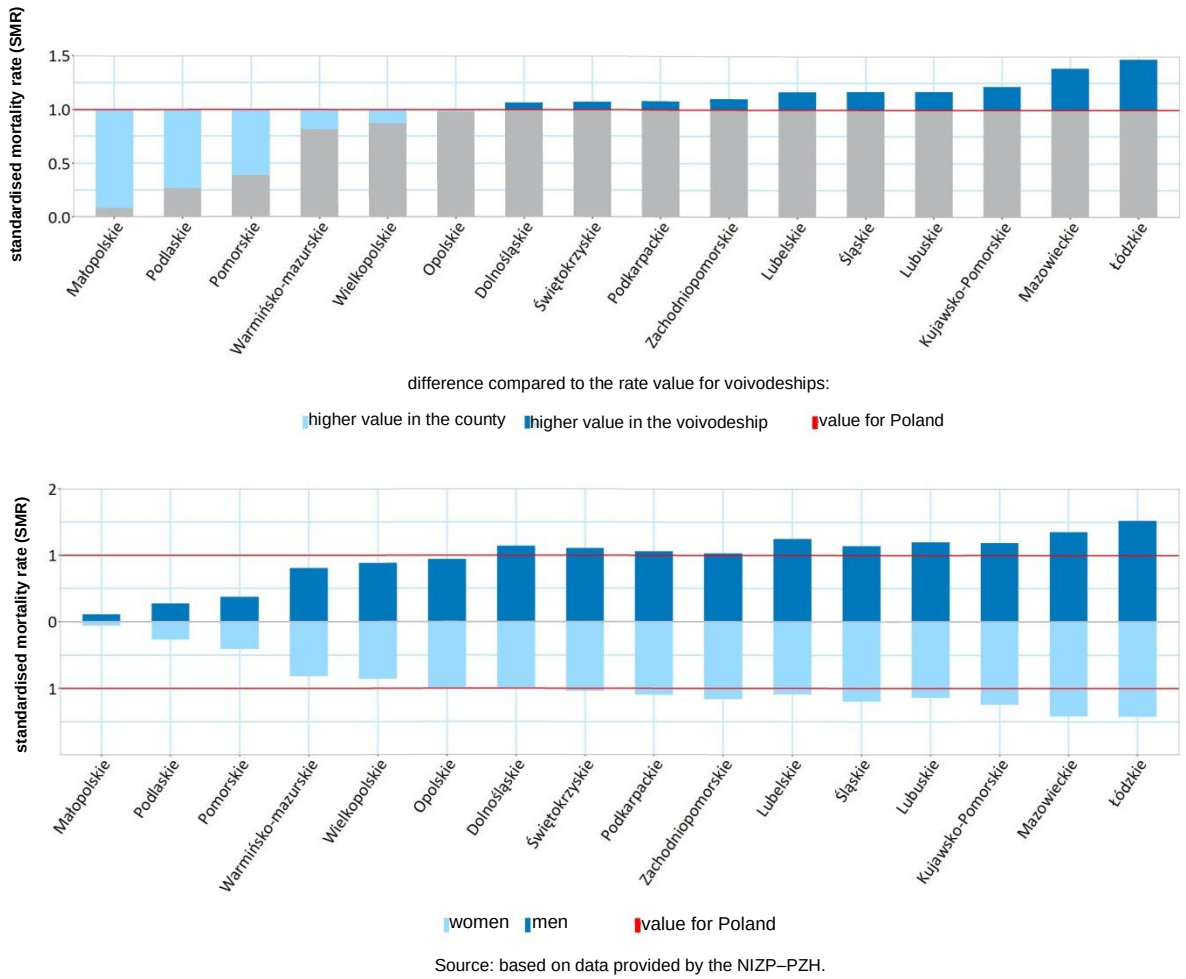


women | men | value for Poland

Source: based on data provided by the NIZP–PZH.

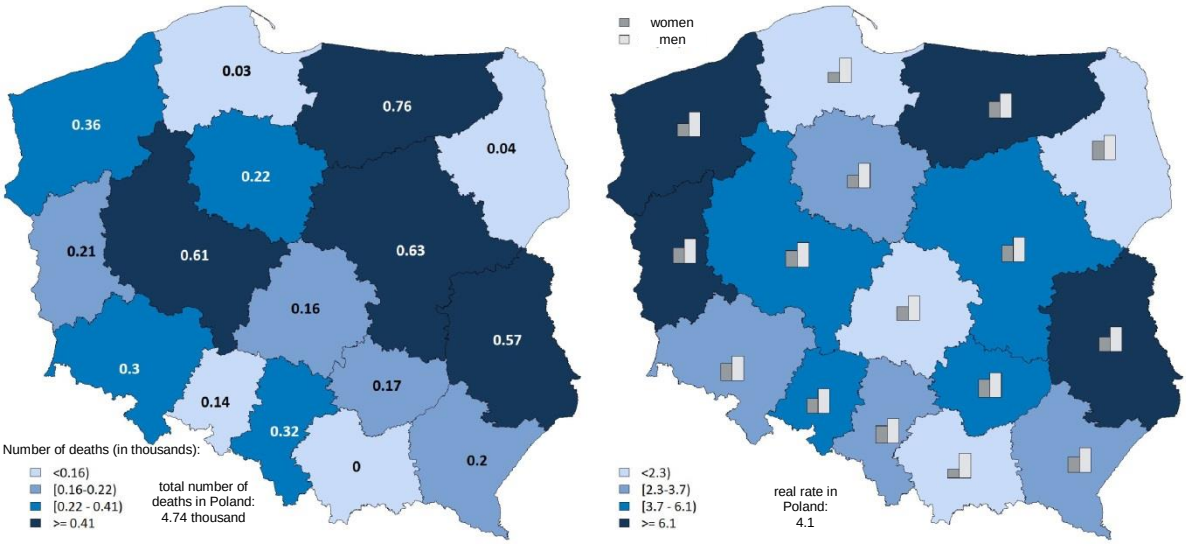
Figure 27: Deaths due to heart failure and cardiomyopathies (I42, I50) (2011-2013)

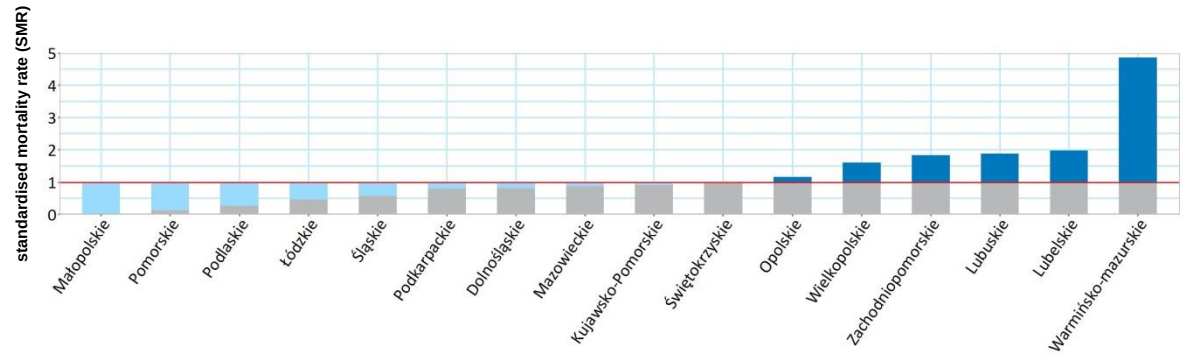




Source: based on data provided by the NIZP–PZH.

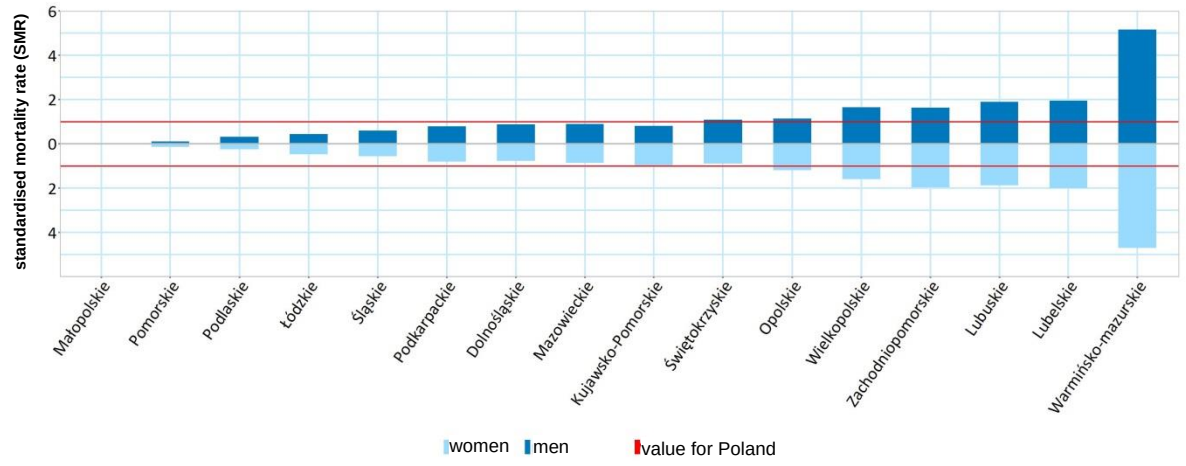
Figure 28: Deaths due to atrial fibrillation and flutter (I48) (2011 – 2013)





difference compared to the rate value for voivodeships:

higher value in the county | higher value in the voivodeship | value for Poland



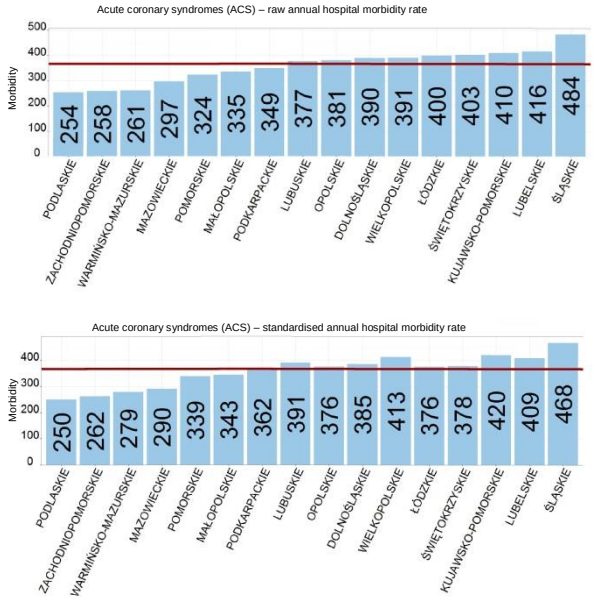
women | men | value for Poland

Source: based on data provided by the NIZP–PZH.

1.4 Hospital morbidity– cardiac diseases

Acute coronary syndromes

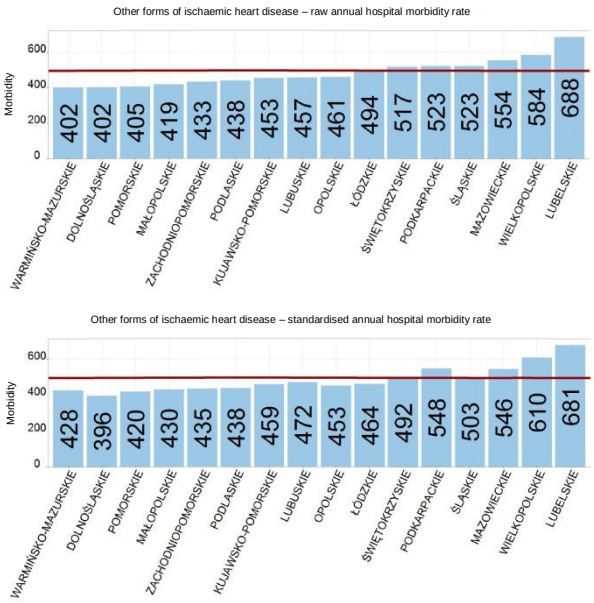
Figure 29: Annual hospital morbidity rate: acute coronary syndromes (2013)



Source: compiled by DAiS based on data provided by the NFZ and GUS.

Other forms of ischaemic heart disease

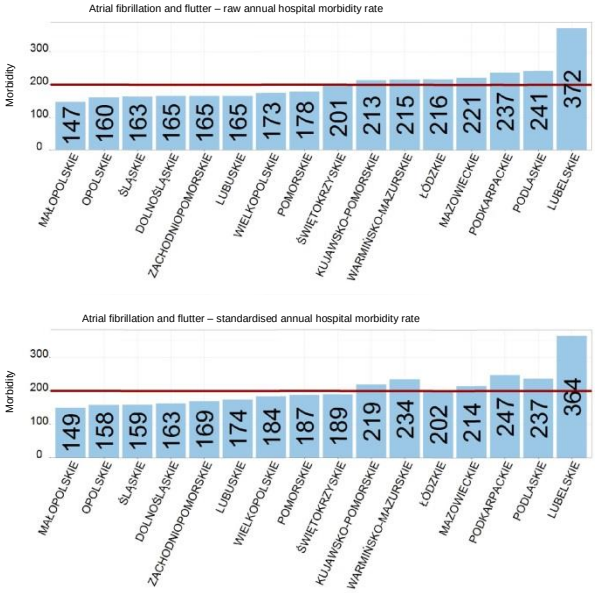
Figure 30: Annual hospital morbidity rate: other forms of ischaemic heart disease (2013)



Source: compiled by DAiS based on data provided by the NFZ and GUS.

Atrial fibrillation and flutter

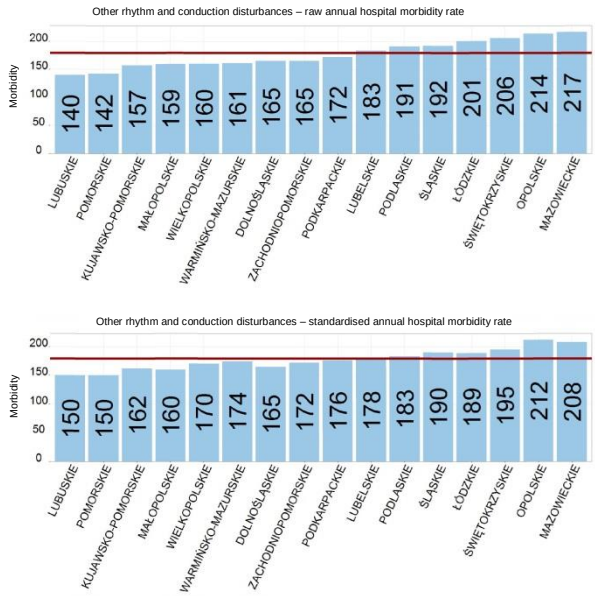
Figure 31: Annual hospital morbidity rate: atrial fibrillation and flutter (2013)



Source: compiled by DAiS based on data provided by the NFZ and GUS.

Other rhythm and conduction disturbances

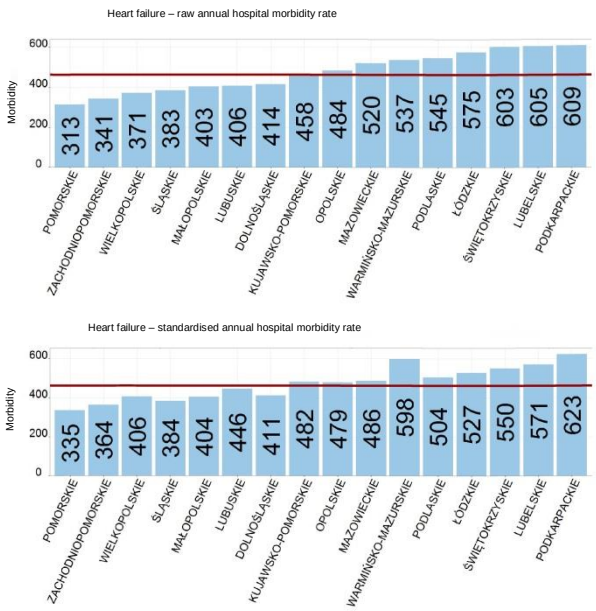
Figure 32: Annual hospital morbidity rate: other rhythm and conduction disturbances (2013)



Source: compiled by DAiS based on data provided by the NFZ and GUS.

Heart failure

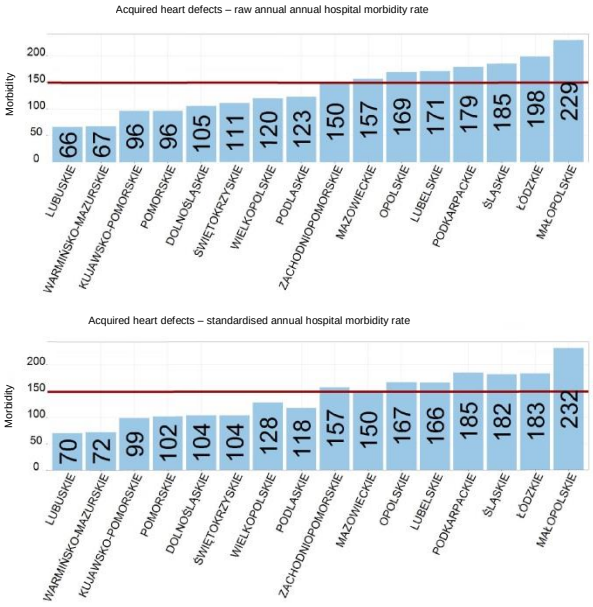
Figure 33: Annual hospital morbidity rate: heart failure (2013)



Source: compiled by DAiS based on data provided by the NFZ and GUS.

Acquired heart defects

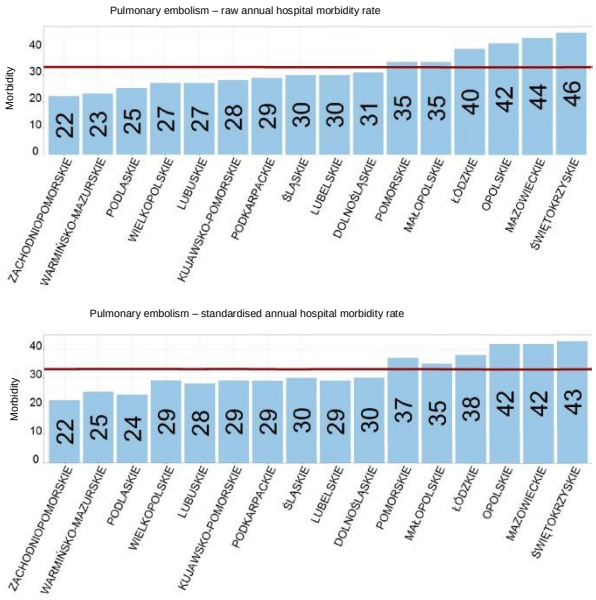
Figure 35: Annual hospital morbidity rate: acquired heart defects (2013)



Source: compiled by DAiS based on data provided by the NFZ and GUS.

Pulmonary embolism

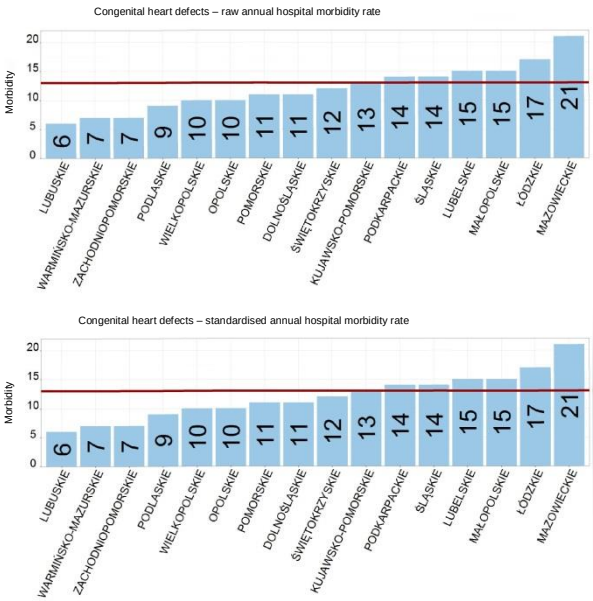
Figure 34: Annual hospital morbidity rate: pulmonary embolism (2013)



Source: compiled by DAiS based on data provided by the NFZ and GUS.

Congenital heart defects

Figure 36: Annual hospital morbidity rate: congenital heart defects (2013)

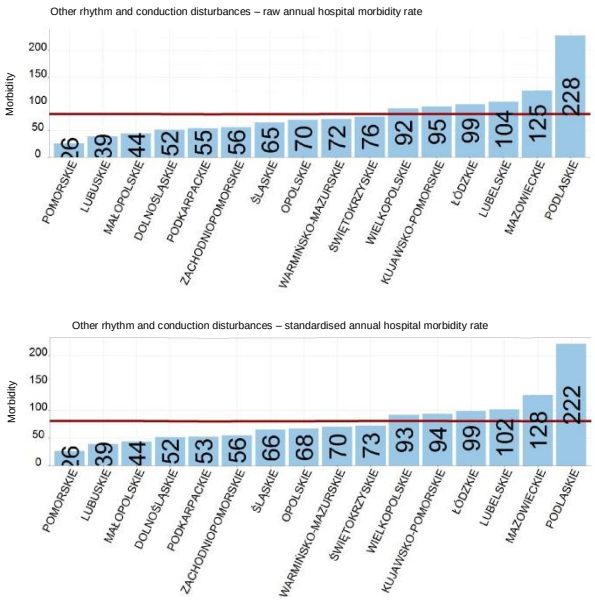


Source: compiled by DAiS based on data provided by the NFZ and GUS.

1.5 Hospital morbidity– cardiac diseases in children

Other rhythm and conduction disturbances

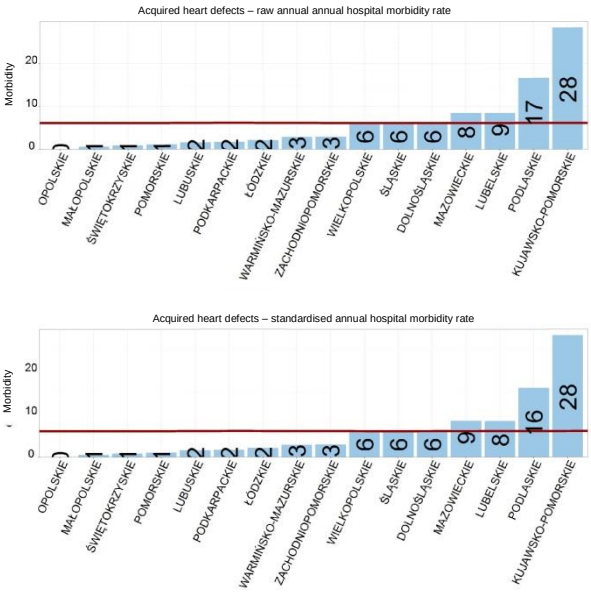
Figure 37: Annual hospital morbidity rate: other rhythm and conduction disturbances (2013)



Source: compiled by DAiS based on data provided by the NFZ and GUS.

Acquired heart defects

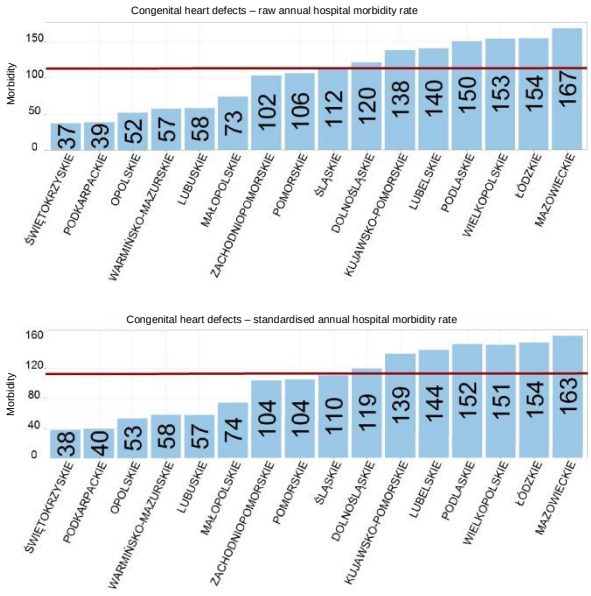
Figure 38: Annual hospital morbidity rate: acquired heart defects (2013)



Source: compiled by DAiS based on data provided by the NFZ and GUS.

Congenital heart defects

Figure 39: Annual hospital morbidity rate: congenital heart defects (2013)



Source: compiled by DAiS based on data provided by the NFZ and GUS.

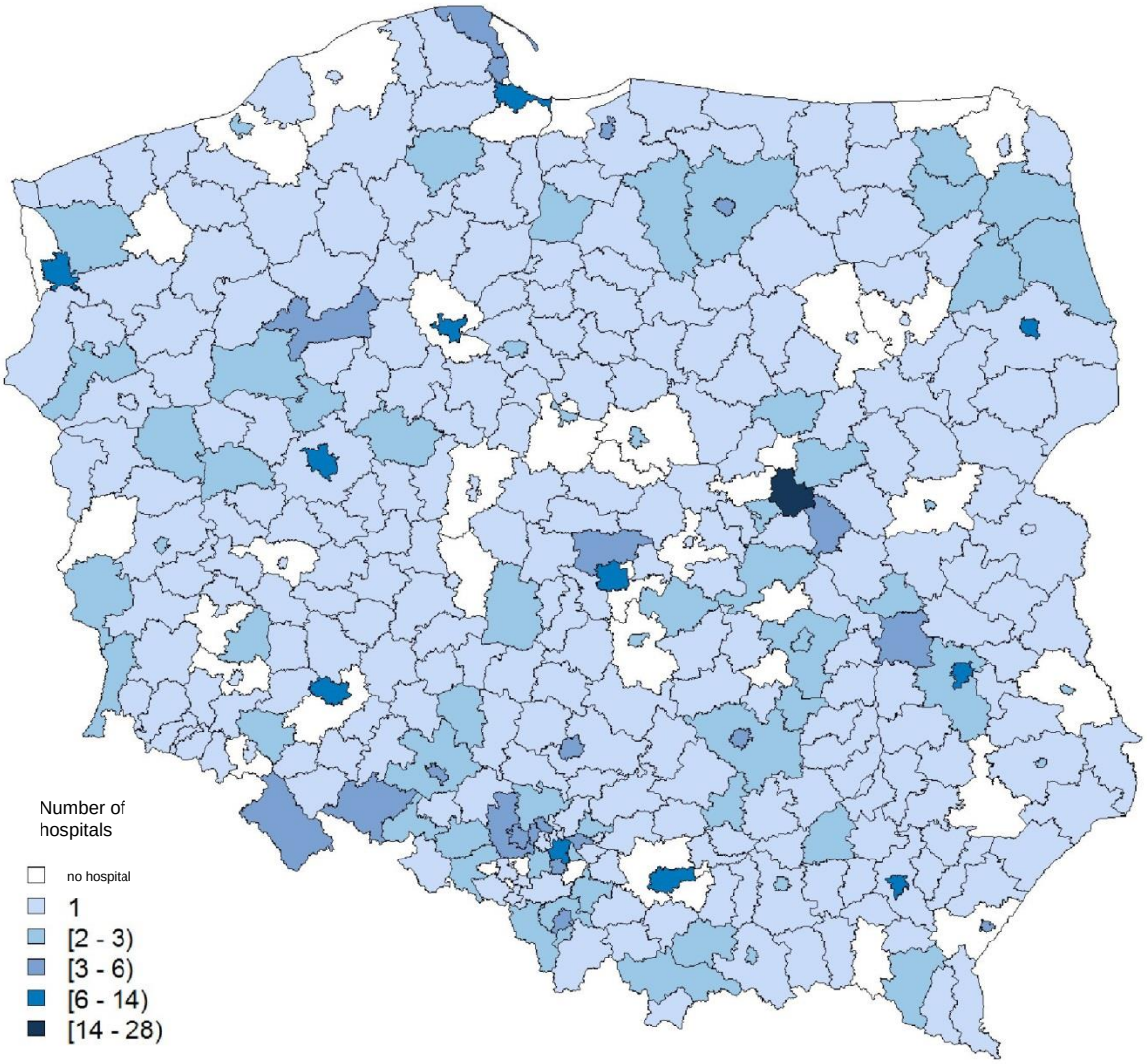
Attachments to Part II

Status and Use of Resources: the Analysis

2.1 Hospitalisation

2.1.1 General Information

Figure 40: Hospitals providing healthcare services to cardiac patients (2013)



Source: compiled by DAiS based on data provided by the NFZ.

Table 2: Hospitals treating approx. 80% of patients with cardiological diagnoses (2013)

No.	Healthcare Provider		Number of patients	Share of patients nationwide	Cumulative percentage
1	Cardinal Wyszyński Institute of Cardiology	Warsaw	12431	2.1%	2.1%
2	Clinical Hospital No. 7 of the Silesian Medical University in Katowice Prof. Leszek Giec Upper-Silesian Medical Centre Katowice		10380	1.7%	3.8%
3	Silesian Center for Heart Diseasesin Zabrze	Zabrze	7956	1.3%	5.1%
4	John Paul II Specialist Hospital	Kraków–Krowodrza	7682	1.3%	6.4%
5	Independent Public Healthcare Centre Military Memorial Medical Academy – Central Veterans' Hospital in Łódź	Łódź–Polesie	5846	1.0%	7.4%
6	University Clinical Centre	Gdańsk	5239	0.9%	8.3%
7	Polska Grupa Medyczna Sp. z o.o.	Gliwice	5058	0.8%	9.1%
8	Central Clinical Hospital of the Ministry of the Interior and Administration in Warsaw	Warsaw	4962	0.8%	9.9%
9	4 Military Clinical Hospital with Specialist Outpatient Clinic Independent Public Healthcare Centre in Wrocław	Wrocław–Krzyki	4868	0.8%	10.8%
10	Independent Public Clinical Hospital No. 4 in Lublin	Lublin	4852	0.8%	11.6%
11	Józef Struś Multidisciplinary City Hospital with Care and Curative Institution Independent Public Healthcare Centre locatedinPoznań, Szwajcarska St. 3	Poznań–Nowe Miasto	4700	0.8%	12.4%
12	Karol Marcinkowski University Hospital of Lord's Transfigurationin Poznań	Poznań–Stare Miasto	4467	0.7%	13.1%
13	Independent Public Central Clinical Hospital	Warsaw	4447	0.7%	13.8%
14	Regional Polyclinical Hospital in Kielce	Kielce	4327	0.7%	14.6%
15	University Hospitalin Cracow	Kraków–Śródmieście	3969	0.7%	15.2%
16	Jadwiga Królowa Provincial Hospital No. 2in Rzeszów	Rzeszów	3885	0.6%	15.9%
17	Independent Public Regional Polyclinical Hospital	Szczecin	3878	0.6%	16.5%
18	University Clinical Hospital in Białystok	Białystok	3866	0.6%	17.2%
19	John Paul II Independent Public Provincial Hospital in Zamość	Zamość	3823	0.6%	17.8%
20	Independent Public Clinical Hospital No.2 of the Pomeranian Medical University	Szczecin	3541	0.6%	18.4%
21	Cardinal Stefan Wyszyński Regional Specialist Hospital Independent Public Healthcare Centre	Lublin	3531	0.6%	19.0%
22	Heliodor Święcicki Clinical Hospital at the Karol Marcinkowski Medical Universityin Poznań	Poznań–Grunwald	3507	0.6%	19.6%
23	Antoni Jurasz University Hospital No. 1 in Bydgoszcz	Bydgoszcz	3301	0.6%	20.1%
24	Anna Gostyńska Wola Hospital Independent Public Healthcare Centre	Warsaw	3244	0.5%	20.7%
25	Military Institute of Medicine	Warsaw	3239	0.5%	21.2%
26	General Hospital in Nowa Sól	Nowa Sól	3234	0.5%	21.7%
27	Rafał Masztak Grochów Hospital Independent Public Healthcare Centre	Warsaw	3205	0.5%	22.3%
28	Władysław Biegański Provincial Specialist Hospital	Łódź–Bałuty	3139	0.5%	22.8%
29	"Miedziowe Centrum Zdrowia" S.A. In Lubin	Lubin	3104	0.5%	23.3%
30	Mazovian Specialist Hospital in Radom	Radom	3092	0.5%	23.8%
31	Independent Public Healthcare Centre Regional Medical Centre in Opole	Opole	3071	0.5%	24.4%
32	Padre Pio Provincial Hospital in Przemyśl	Przemyśl	3055	0.5%	24.9%
33	Alfred Sokołowski Specialist Hospital	Wałbrzych	2906	0.5%	25.3%
34	Mazowiecki Szpital Bródnowski w Warszawie Sp z o. o.	Warsaw	2899	0.5%	25.8%
35	Independent Public Complex of Healthcare Facilities - Specialist County Hospital in Stalowa Wola	Stalowa Wola	2848	0.5%	26.3%
36	County Hospital in Chrzanów	Chrzanów	2829	0.5%	26.8%
37	Szpital Św. Wincentego A Paulo Sp. z o.o.	Gdynia	2824	0.5%	27.3%
38	Regional Polyclinical Hospital in Konin	Konin	2808	0.5%	27.7%
39	Mazowiecki Szpital Wojewódzki w Siedlcach Sp. z o.o.	Siedlce	2779	0.5%	28.2%
40	Rehional Specialist Hospital in Biała Podlaska	Biała Podlaska	2765	0.5%	28.6%
41	Regional Specialist Hospital in Olsztyn	Olsztyn	2739	0.5%	29.1%
42	Józef Psarski Mazovian Specialist Hospital in Ostrołęka	Ostrołęka	2710	0.5%	29.6%
43	Edward Szczeklik Specialist Hospital in Tarnów	Tarnów	2704	0.5%	30.0%
44	Nicolaus Copernicus Regional Hospital in Koszalin	Koszalin	2665	0.4%	30.5%
45	Jan Biziel University Hospital No. 2 in Bydgoszcz	Bydgoszcz	2632	0.4%	30.9%
46	John Paul II Independent Public Specialist Western Hospital	Grodzisk Mazowiecki	2614	0.4%	31.3%
47	American Heart of Poland – 3rd Department of Invasive Cardiology, Angiology and Electrocardiology	Dąbrowa Górnicza	2614	0.4%	31.8%
48	Ludwik Perzyna Regional Polyclinical Hospital in Kalisz	Kalisz	2606	0.4%	32.2%
49	Complex of Healthcare Facilities in Ostrowiec Świętokrzyski	Ostrowiec Świętokrzyski	2591	0.4%	32.6%
50	Jan Mikulicz–Radecki University Teaching Hospital in Wrocław	Wrocław–Krzyki	2514	0.4%	33.1%
51	Regional Polyclinical Hospital in Płock	Płock	2511	0.4%	33.5%
52	Holy Spirit Specialist Hospital in Sandomierz	Sandomierz	2508	0.4%	33.9%
53	Provincial Hospital in Poznań Poznań-Jeżyce	Poznań-Jeżyce	2480	0.4%	34.3%
54	Regional Polyclinical Hospital in Elbląg	Elbląg	2477	0.4%	34.7%
55	Invasive Cardiology, Electrotherapy and Angiology Centre in Nowy Sącz	Nowy Sącz	2419	0.4%	35.1%
56	Centrum Medyczne Hep Sp. z o.o. Non-Public Healthcare Centre Centrum Medyczne HCP - Inpatient treatment	Poznań	2410	0.4%	35.5%
57	Independent Public Healthcare Centre Provincial Specialist Hospital No. 3 in Rybnik	Rybnik	2407	0.4%	35.9%
58	Regional Specialist Hospital in Wrocław	Wrocław	2398	0.4%	36.3%
59	Ludwik Błażek General Hospital in Inowrocław	Inowrocław	2385	0.4%	36.7%

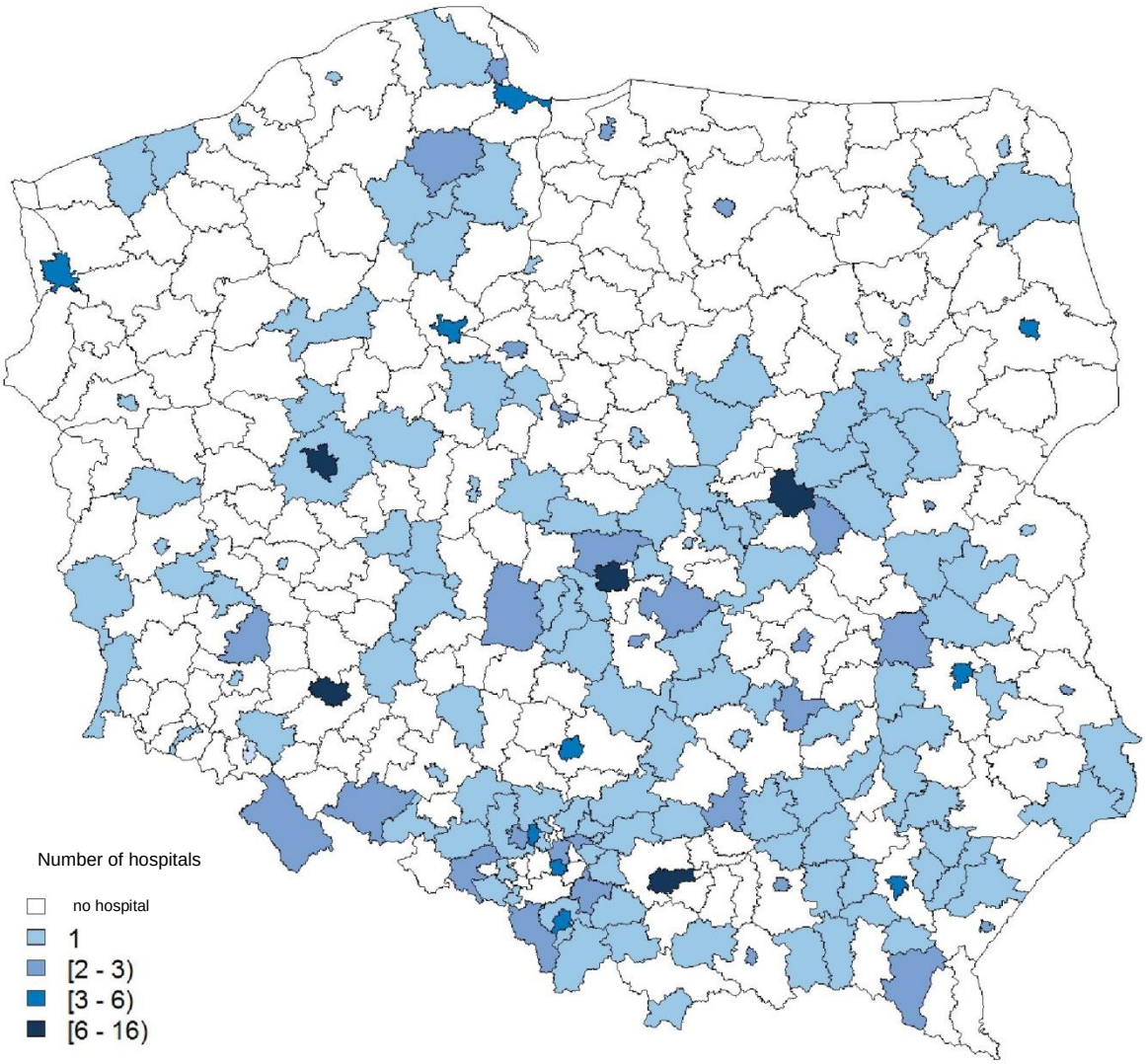
60	Wielospecjalistyczny Szpital Wojewódzki W Gorzowie Wlkp. Sp. z o.o.	Gorzów Wielkopolski	2377	0.4%	37.1%
61	Independent Public Healthcare Centre No 10 Military Research Hospital and Polyclinic	Bydgoszcz	2360	0.4%	37.5%
62	American Heart of Poland – 2nd Department of Cardiology	Bielsko–Biała	2338	0.4%	37.9%
63	Tytus Chałubiński Specialist Hospital Radom	Radom	2311	0.4%	38.3%
64	Saint Luke's Provincial Hospital in Tarnów Independent Public Healthcare Centre	Tarnów	2291	0.4%	38.7%
65	Regional Specialist Hospital in Legnica	Legnica	2284	0.4%	39.1%
66	Invasive Cardiology and Angiology Centre	Sieradz	2280	0.4%	39.4%
67	Stanisław Staszic Specialist Hospital in Piła	Piła	2269	0.4%	39.8%
68	Władysław Biegański Regional Specialist Hospital in Grudziądz	Grudziądz	2246	0.4%	40.2%
69	Ludwik Rydygier Regional Polyclinic Hospital in Toruń	Toruń	2234	0.4%	40.6%
70	Regional Specialist Hospital in Włocławek	Włocławek	2198	0.4%	40.9%
71	Józef Dietl Specialist Hospital in Cracow	Cracow	2187	0.4%	41.3%
72	Pomorskie Centra Kardiologiczne Non-Public Healthcare Centre	Gdańsk	2169	0.4%	41.7%
73	Szpital Kolejowy im. Dr Med. Włodzimierza Roeflera w Pruszkowie Sp. z o.o.	Pruszków	2165	0.4%	42.0%
74	Jerzy Popiełuszko Bielański Hospital - Independent Public Healthcare Centre	Warsaw	2153	0.4%	42.4%
75	Independent Public Healthcare Complex in Sanok	Sanok	2139	0.4%	42.7%
76	Saint Adalbert's General Hospital	Gdańsk	2127	0.4%	43.1%
77	Independent Public Healthcare Centre of the Ministry of Internal Affairs in Lublin	Lublin	2120	0.4%	43.4%
78	Independent Public Healthcare Complex in Świdnica	Świdnica	2079	0.3%	43.8%
79	Independent Public Complex of Healthcare Facilities in Ostrów Mazowiecka	Ostrów Mazowiecka	2078	0.3%	44.1%
80	American Heart Of Poland Spółka Akcyjna	Nysa	2063	0.3%	44.5%
81	Saint Barbara's Regional Specialist Hospital No. 5 in Sosnowiec	Sosnowiec	2009	0.3%	44.8%
82	Emil Warmiński Memorial Municipal Hospital in Bydgoszcz	Bydgoszcz	1979	0.3%	45.2%
83	Regional Specialist Hospital in Ciechanów	Ciechanów	1974	0.3%	45.5%
84	"Kliniki Kardiologii Allenort" Sp. z o.o.	Iława/Ełk	1973	0.3%	45.8%
85	Rehabilitation–Cardiology Hospital	Kowanówko	1950	0.3%	46.1%
86	Medical Healthcare Crentre in Jarosaw	Jarosław	1947	0.3%	46.5%
87	Independent Public Healthcare Centre in Świdnik	Świdnik	1895	0.3%	46.8%
88	American Heart of Poland, 4th Department of Invasive Cardiology, Electrostimulation and Angiology	Kędzierzyn-Koźle	1894	0.3%	47.1%
89	Brothers Hospitallers of Saint John of God in Łódź	Łódź–Górna	1848	0.3%	47.4%
90	Janusz Korczak Regional Specjalist Hospital	Słupsk	1823	0.3%	47.7%
91	Complex of Healthcare Facilities in Gniezno	Gniezno	1819	0.3%	48.0%
92	Nikolay Pirogov Regional Specialist Hospital in Łódź	Łódź–Polesie	1811	0.3%	48.3%
93	Tadeusz Marciniak Lower Silesian Specialist Hospital – Emergency Medical Centre	Wrocław	1801	0.3%	48.6%
94	Gabriel Narutowicz Municipal Specialist Hospital	Kraków–Krowodrza	1801	0.3%	48.9%
95	Regional Hospital Independent Public Healthcare Centre in Zielona Góra	Zielona Góra	1796	0.3%	49.2%
96	Stefan Żeromski Specialist Hospital	Kraków–Nowa Huta	1795	0.3%	49.5%
97	Szpital w Puszczykowie im. Prof. S T. Dąbrowskiego S.A.	Puszczykowo	1762	0.3%	49.8%
98	Nicolaus Copernicus Specialist Municipal Hospital	Toruń	1744	0.3%	50.1%
99	County Hospital in Radomsko	Radomsko	1725	0.3%	50.4%
100	American Heart Of Poland Spółka Akcyjna	Nysa	1723	0.3%	50.7%
101	Complex of Healthcare Facilities in Końskie	Końskie	1696	0.3%	51.0%
102	John Paul II Provincial Hospital in Bełchatów	Bełchatów	1695	0.3%	51.2%
103	Hospital in Biała	Biała	1662	0.3%	51.5%
104	Cardinal Stefan Wyszyński Regional Hospital	Łomża	1631	0.3%	51.8%
105	Cardinal Stefan Wyszyński Regional Hospital in Sieradz	Sieradz	1630	0.3%	52.1%
106	Blessed Virgin Mary's Regional Specialist Hospital	Częstochowa	1617	0.3%	52.3%
107	Independent Public Healthcare Centre in Kraśnik	Kraśnik	1610	0.3%	52.6%
108	Kotlina Jelenionórska Regional Hospital Centre	Jelenia Góra	1567	0.3%	52.9%
109	"Pleszewskie Centrum Medyczne w Pleszewie" Sp. z o.o.	Pleszew	1565	0.3%	53.1%
110	Independent Public Healthcare Complex in Tomaszów Lubelski	Tomaszów Lubelski	1529	0.3%	53.4%
	Arion Szpitale Sp. z o.o.	Lublin	1524	0.3%	53.6%
112	Provincial Public Healthcare Centre in Rydułtowy and Wodzisław Śląski Located in Wodzisław Śląski	Wodzisław Śląski	1516	0.3%	53.9%
113	Independent Public Healthcare Centre Specialist Hospital in Zabrze	Zabrze	1491	0.2%	54.1%
114	Szpital Miejski w Rudzie Śląskiej Sp. z o.o.	Ruda Śląska	1490	0.2%	54.4%
115	Międzylesie Specialist Hospital in Warsaw	Warsaw	1474	0.2%	54.6%
116	Jędrzej Śniadecki Independent Public Healthcare Centre Regional Hospital	Białystok	1453	0.2%	54.9%
117	Complex of Healthcare Facilities in Oświęcim	Oświęcim	1435	0.2%	55.1%
118	American Heart Of Poland Spółka Akcyjna	Nysa	1435	0.2%	55.4%
119	Health Institute in Tomaszów Mazowiecki	Tomaszów Mazowiecki	1414	0.2%	55.6%
120	General Hospital in Jaworzno	Jaworzno	1412	0.2%	55.8%
121	Independent Public Healthcare Centre in Puławy	Puławy	1408	0.2%	56.1%
122	Specialist Hospital in Wejherowo	Wejherowo	1404	0.2%	56.3%
123	Complex of Healthcare Facilities in Kłodzko	Kłodzko	1389	0.2%	56.5%
124	105 Borderland Military Hospital and Clinic Independent Public Healthcare Centre in Żary	Żary	1374	0.2%	56.8%
125	County Complex of Healthcare Facilities in Piotrków Trybunalski	Piotrków Trybunalski	1373	0.2%	57.0%
126	Independent Public Healthcare Centre Regional Specialist Hospital No. 4 in Bytom	Bytom	1367	0.2%	57.2%
127	Regional Specialist Hospital No. 2 in Jastrzębie-Zdrój	Jastrzębie–Zdrój	1361	0.2%	57.4%
128	Non-Public Invasive Cardiology Centre	Poznań–Stare Miasto	1356	0.2%	57.7%
129	Independent Public Complex of Healthcare Facilities in Wyszków	Wyszków	1350	0.2%	57.9%
130	Non-Public Invasive Cardiology Centre 'Ikardia'	Nałęczów	1346	0.2%	58.1%

131	Tomasz Ludyga	Katowice	1339	0.2%	58.3%
132	“Procardia” Non-Public Healthcare Centre	Augustów	1334	0.2%	58.6%
133	Maria Skłodowska-Curie Regional Specialist Hospital in Zgierz	Zgierz	13 *22*	0.2%	58.8%
134	Independent Public Healthcare Centre in Koło	Koło	1311	0.2%	59.0%
135	Complex of Healthcare Facilities Ostrów Wielkopolski	Ostrów Wielkopolski	1307	0.2%	59.2%
136	Independent Public Healthcare Centre	Radziejów	1304	0.2%	59.4%
137	Independent Public Healthcare Centre in Siedlce	Siedlce	1288	0.2%	59.7%
138	Jędrzej Śniadecki Sepcialist Hospital in Nowy Sącz	Nowy Sącz	1284	0.2%	59.9%
139	County Hospital in Zawiercie	Zawiercie	1283	0.2%	60.1%
140	County Public Healthcare Centre	Starachowice	1281	0.2%	60.3%
141	Internal Medicine Hospital - ‘Hutniczy’	Częstochowa	1264	0.2%	60.5%
142	General Independent Public Healthcare Complex in Zgorzelec	Zgorzelec	1255	0.2%	60.7%
143	Pabianickie Centrum Medyczne Sp. Z O.O.	Pabianice	1245	0.2%	60.9%
144	American Heart of Poland, Centre of Cardiology and Angiology of Sudety	Polanica–Zdrój	1242	0.2%	61.1%
145	Independent Public Healthcare Complex in Hrubieszów	Hrubieszów	1230	0.2%	61.3%
146	Jan Karol Łukowicz Specialist Hospital in Chojnice	Chojnice	1228	0.2%	61.5%
147	Józef Piłsudski Independent Public Complex of Healthcare Facilities in Płońsk	Płońsk	1222	0.2%	61.7%
148	Specialist Hospital in Jasło	Jasło	1215	0.2%	62.0%
149	Stanisław Rybicki Regional Polyclinical Hospital in Skierniewice	Skierniewice	1214	0.2%	62.2%
150	"Szpital Tucholski" Sp. z o.o.	Tuchola	1205	0.2%	62.4%
151	Invasive Cardiology, Electrotherapy and Angiology Centre in Krosno	Krosno	1205	0.2%	62.6%
152	American Heart Of Poland Spółka Akcyjna	Nysa	1199	0.2%	62.8%
153	CARINT SCANMED Sp. z o.o.	Kraków–Podgórze	1195	0.2%	63.0%
154	Independent Public Healthcare Centre of the Ministry of Internal Affairs in Rzeszów	Rzeszów	1195	0.2%	63.2%
155	Provincial Hospital in Bielsko–Biała	Bielsko–Biała	1193	0.2%	63.4%
156	Independent Public Healthcare Centre No. 5 Military Research Hospital and Polyclinic in Cracow	Kraków–Krowodrza	1189	0.2%	63.6%
157	Sosnowiecki Szpital Miejski Sp. z o.o.	Sosnowiec	1186	0.2%	63.8%
158	Nicolaus Copernicus Regional Specialist Hospital in Łódź	Łódź–Górna	1182	0.2%	64.0%
159	Centrum Dializa Sp. z o.o. (miejsce udzielania świadczeń: Łask)	Łask	1181	0.2%	64.1%
160	Tytus Chałubiński County Hospital	Zakopane	1175	0.2%	64.3%
161	Complex of Healthcare Facilities in Wadowice	Wadowice	1167	0.2%	64.5%
162	Cardiology Centre of Zgierz Med–Pro	Zgierz	1164	0.2%	64.7%
163	New Hospital in Olkusz	Olkusz	1163	0.2%	64.9%
164	Non-Public Healthcare Centre in Racibórz	Racibórz	1159	0.2%	65.1%
165	Independent Public Healthcare Complex in Leżajsk	Leżajsk	1144	0.2%	65.3%
166	Polska Grupa Medyczna Sp. z o.o. Polonia Świata Non-Public Healthcare Centre of Polska Grupa	Gliwice	1135	0.2%	65.5%
167	Complex of Healthcare Facilities in Sucha Beskidzka	Kraków–Krowodrza	1131	0.2%	65.7%
168	Independent Public Healthcare Centre in Opole Lubelskie	Opole Lubelskie	1129	0.2%	65.9%
169	Ado–Med. Kliniki. Sp. z o.o.	Chełm	1118	0.2%	66.1%
170	Allenort Kardiologia Sp. z o.o.	Warsaw	1109	0.2%	66.3%
171	PCK Independent Municipal Hospital	Białystok	1103	0.2%	66.4%
172	Oncology Centre of Beskidy - John Paul II Municipal Hospital in Bielsku–Biała	Bielsko–Biała	1096	0.2%	66.6%
173	County Complex of Healthcare Facilities	Będzin	1096	0.2%	66.8%
174	Wielospecjalistyczny Szpital Powiatowy Spółka Akcyjna	Tarnowskie Góry	1086	0.2%	67.0%
175	Specialist Hospital /Specialist Outpatient Clinic and Emergency Medical Service Centre	Grójec	1085	0.2%	67.2%
176	Gliwice Medical Centre	Gliwice	1081	0.2%	67.3%
177	Infant Jesus Clinical Hospital	Warszawa	1070	0.2%	67.5%
178	Independent Public Healthcare Centre of the Ministry of Internal Affairs in Białystok	Białystok	1070	0.2%	67.7%
179	Magodent Sp z o o	Warsaw	1065	0.2%	67.9%
180	Saint John's Hospital	Starogard Gdański	1063	0.2%	68.1%
181	John Paul II Regional Hospital of Podkarpacjie in Krosno	Krosno	1061	0.2%	68.2%
182	Centrum Kardiologii Sp. z o.o.	Józefów	1055	0.2%	68.4%
183	Centrum Zdrowia Mazowsza Zachodniego Sp. z o.o.	Żyrardów	1049	0.2%	68.6%
184	Independent Public Complex of Healthcare Facilities	Nisko	1027	0.2%	68.8%
185	Independent Public Regional Specialist Hospital in Chełm	Chełm	1013	0.2%	68.9%
186	American Heart of Poland, 5th Department of Invasive Cardiology and Angiology - Mielec	Mielec	1011	0.2%	69.1%
187	Non–Public Healthcare Centre of Cardiovascular Interventions of Podkarpacie in Sanok	Sanok	1005	0.2%	69.3%
188	Ludwik Rydygier Regional Hospital in Suwałki	Suwałki	1003	0.2%	69.4%
189	Medical Centre in Łańcut	Łańcut	999	0.2%	69.6%
190	Ludwik Rydygier Specialist Hospital in Cracow	Kraków–Nowa Huta	991	0.2%	69.8%
191	Hospital in Knurów	Knurów	982	0.2%	69.9%
192	Kliniki Kardiologii Allenort Sp. z o.o.	Szczecinek	980	0.2%	70.1%
193	Arion Med Sp. z o.o.	Lublin	976	0.2%	70.3%
194	Complex of Healthcare Facilities - Busko–Zdrój	Busko–Zdrój	975	0.2%	70.4%
195	Complex of Healthcare Facilities in Pińczów	Pińczów	973	0.2%	70.6%
196	Complex of Healthcare Facilities in Żywiec	Żywiec	971	0.2%	70.7%
197	Szpitale Wojewódzkie w Gdyni Sp. z o.o.	Gdynia	969	0.2%	70.9%
198	Municipal Polyclinical Hospital	Częstochowa	969	0.2%	71.1%
199	Saint Anne’s Hospital in Miechów	Miechów	956	0.2%	71.2%
200	“Lux Med” Non-Public Healthcare Centre	Rzeszów	956	0.2%	71.4%

201	Independent Public Healthcare Centre in Sokołów Podlaski	Sokołów Podlaski	952	0.2%	71.5%
202	Independent Public Healthcare Centre Railway Hospital in Wilkowice–Bystra	Wilkowice	951	0.2%	71.7%
203	Complex of Healthcare Facilities in Nysa	Nysa	940	0.2%	71.9%
204	County Hospital Complex	Oleśnica	928	0.2%	72.0%
205	Sochaczew County Hospital Healthcare Complex	Sochaczew	925	0.2%	72.2%
206	Specialist Hospital in Kościerzyna	Kościerzyna	922	0.2%	72.3%
207	Allenort Cardiology Centre	Tomaszów Mazowiecki	913	0.2%	72.5%
208	Regional Complex of Healthcare Facilities, Centre for Treatment of Lung Diseases and Rehabilitation in Łódź	Łódź–Bałuty	912	0.2%	72.6%
209	Regional Ambulance and Medical Transportation Service "Meditrans" Independent Public Healthcare Centre in Warsaw	Warsaw	912	0.2%	72.8%
210	Nicolaus Copernicus Hospital	Gdańsk	910	0.2%	72.9%
211	Independent Public Healthcare Centre Edmund Biernacki County Hospital in Opoczno	Opoczno	909	0.2%	73.1%
212	Invasive Cardiology, Electrotherapy and Angiology Centre in Oświęcim	Oświęcim	906	0.2%	73.2%
213	Józef Rostek District Hospital in Racibórz	Racibórz	900	0.2%	73.4%
214	Provincial Hospital	Włocławek	894	0.1%	73.5%
215	Complex of Healthcare Facilities in Strzyżów	Strzyżów	890	0.1%	73.7%
216	Independent Public Healthcare Centre in Lubartów	Lubartów	888	0.1%	73.8%
217	Zofia Tarnowska nee Zamoyska Provincial Hospital in Tarnobrzeg	Tarnobrzeg	886	0.1%	74.0%
218	Municipal Hospital in Tychy	Tychy	885	0.1%	74.1%
219	Intercard Sp. z o. o.	Pińczów	874	0.1%	74.3%
220	Regional Hospital in Kołobrzeg	Kołobrzeą	862	0.1%	74.4%
221	Complex of Healthcare Facilities	Ropczyce	861	0.1%	74.6%
222	Municipal Hospital in Przemyśl	Przemyśl	856	0.1%	74.7%
223	Independent Public Healthcare Complex	Mińsk Mazowiecki	843	0.1%	74.8%
224	Complex of Healthcare Facilities in Dębica	Dębica	842	0.1%	75.0%
225	Wołomin County Hospital – Independent Complex of Public Healthcare Facilities	Wołomin	836	0.1%	75.1%
226	Complex of Healthcare Facilities in Dąbrowa Tarnowska	Dąbrowa Tarnowska	829	0.1%	75.3%
227	Independent Public Healthcare Centre in Radzyń Podlaski	Radzyń Podlaski	825	0.1%	75.4%
228	Independent Public Complex of Healthcare Facilities in Staszów	Staszów	821	0.1%	75.5%
229	"Pro–Medica" w Ełku Sp. z o. o.	Ełk	819	0.1%	75.7%
230	Specialist Hospital in Brzozów, Bronisław Markiewicz Subcarpathian Oncology Centre	Brzozów	816	0.1%	75.8%
231	Complex of Healthcare Facilities in Włoszczowa	Włoszczowa	815	0.1%	75.9%
232	Regional Polyclinical Hospital in Leszno	Leszno	813	0.1%	76.1%
233	County Hospital in Limanowa	Limanowa	808	0.1%	76.2%
234	Complex of Healthcare Facilities in Cieszyn	Cieszyn	808	0.1%	76.4%
235	Regionalne Centrum Zdrowia Sp. z o.o.	Lubin	804	0.1%	76.5%
236	Powiatowe Centrum Zdrowia Sp. z o.o.	Otwock	803	0.1%	76.6%
237	Megrez Sp. z o.o.	Tychy	796	0.1%	76.8%
238	County Hospital in Brzeziny	Brzeziny	794	0.1%	76.9%
239	Szpital Specjalistyczny w Kościerzynie Sp. z o.o.	Kościerzyna	789	0.1%	77.0%
240	Joseph Glowatzki County Hospital in Strzelce Opolskie	Strzelce Opolskie	783	0.1%	77.1%
241	Municipal Polyclinical Hospital in Olsztyn	Olsztyn	783	0.1%	77.3%
242	Jerzy Gromkowski Provincial Specialist Hospital	Wrocław	776	0.1%	77.4%
243	Nicolaus Copernicus Independent Provincial Hospital in Piotrków Trybunalski	Piotrków Trybunalski	776	0.1%	77.5%
244	Zduńskowolski Szpital Powiatowy Sp. z o.o.	Zduńska Wola	775	0.1%	77.7%
245	County Hospital in Jarocin	Jarocin	772	0.1%	77.8%
246	Powiatowy Szpital W Aleksandrowie Kujawskim Sp. z o.o.	Aleksandrów Kujawski	770	0.1%	77.9%
247	Complex of Healthcare Facilities in Łowicz	Łowicz	769	0.1%	78.1%
248	Complex of Healthcare Facilities in Łęczyca	Łęczyca	767	0.1%	78.2%
249	Independent Public Complex of Healthcare Facilities in Gryfice	Gryfice	767	0.1%	78.3%
250	Complex of Healthcare Facilities in Skarżysko-Kamienna Maria Skłodowska-Curie County Hospital	Skarżysko–Kamienna	763	0.1%	78.4%
251	Independent Public Healthcare Centre of the Ministry of Internal Affairs in Łódź	Łódź–Bałuty	754	0.1%	78.6%
252	Independent Public Healthcare Centre in Węgrów	Węgrów	754	0.1%	78.7%
253	Henryk Klimontowicz Specialist Hospital in Gorlice	Gorlice	752	0.1%	78.8%
254	Szpital Miejski w Zabrzu Sp. z o.o.	Zabrze	752	0.1%	78.9%
255	Specialist Hospital and Clinic of Elbląg Independent Public Healthcare Centre in Elbląg	Elbląg	750	0.1%	79.1%
256	109 Military Hospital and Clinic Independent Public Healthcare Centre	Szczecin	743	0.1%	79.2%
257	Transfiguration Hospital in Warsaw Independent Public Healthcare Centre	Warsaw	741	0.1%	79.3%
258	"ATTIS" Therapeutic, Rehabilitation and Occupational Medicine Centre	Warsaw	739	0.1%	79.4%
259	"Głogowski Szpital Powiatowy" Sp. z o.o.	Głogów	729	0.1%	79.6%
260	Independent Public Healthcare Centre in Łuków	Łuków	729	0.1%	79.7%
261	Nowy Szpital w Świebodzinie Sp. z o.o.	Świebodzin	729	0.1%	79.8%
262	Zespół Opieki Zdrowotnej w Świętochłowicach Sp. z o.o.	Świętochłowice	725	0.1%	79.9%
263	Independent Public Healthcare Complex No. 1 in Rzeszów	Rzeszów	722	0.1%	80.0%

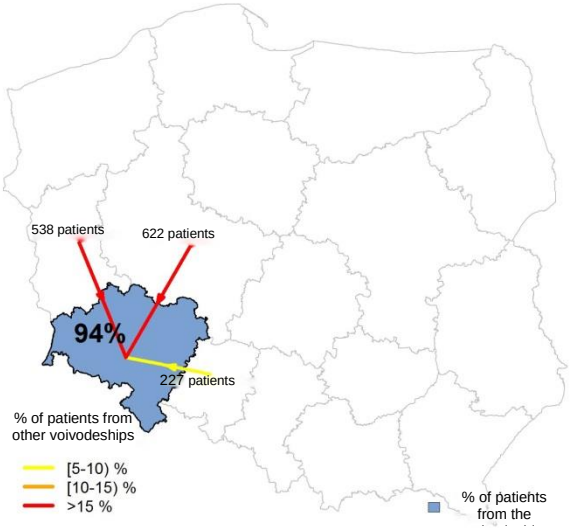
Source: compiled by the Department of Analysis and Strategy (DAiS) based on data provided by the NFZ.

Figure 41: Hospitals treating approx. 80% of cardiac patients (2013)



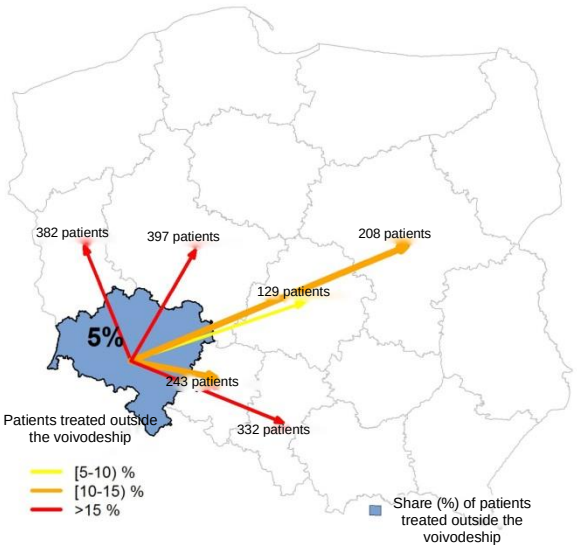
Source: compiled by DAiS based on data provided by the NFZ.

Figure 42: Cardiac patients migrations into Dolnośląskie Voivodeship



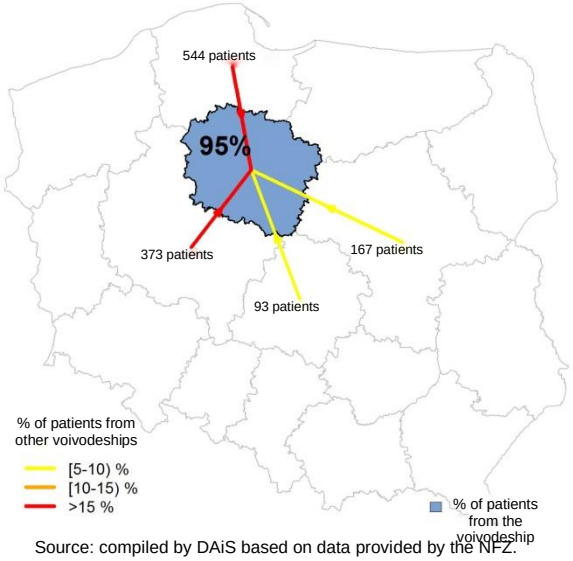
Source: compiled by DAiS based on data provided by the NFZ.

Figure 43: Cardiac patients migrations from Dolnośląskie Voivodeship



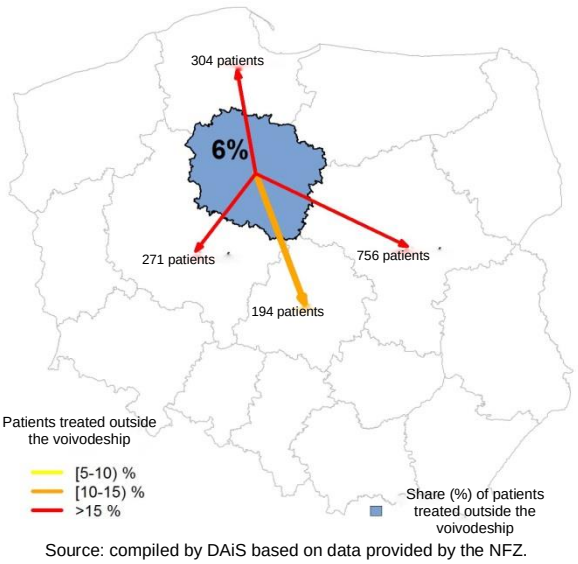
Source: compiled by DAiS based on data provided by the NFZ.

Figure 44: Cardiac patients migrations into Kujawsko-Pomorskie Voivodeship



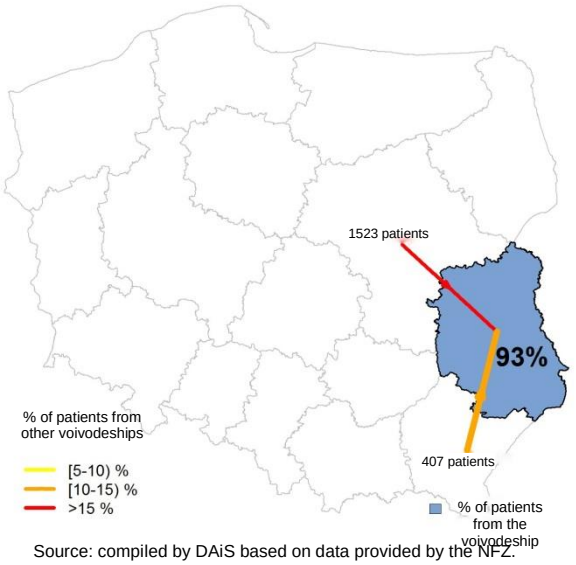
Source: compiled by DAiS based on data provided by the NFZ.

Figure 45: Cardiac patients migrations into Kujawsko-Pomorskie Voivodeship



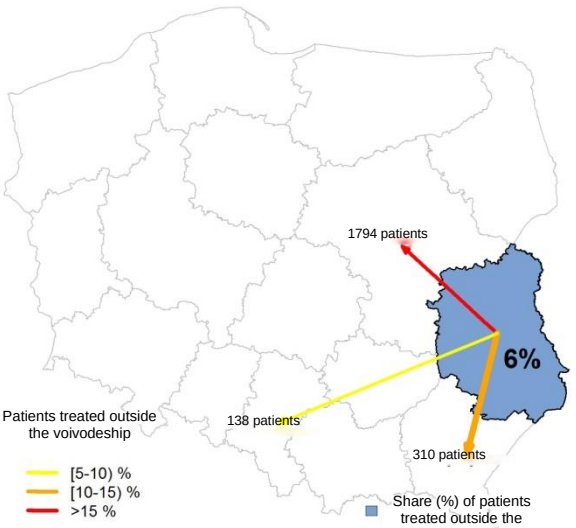
Source: compiled by DAiS based on data provided by the NFZ.

Figure 46: Cardiac patients migrations into Lubelskie Voivodeship



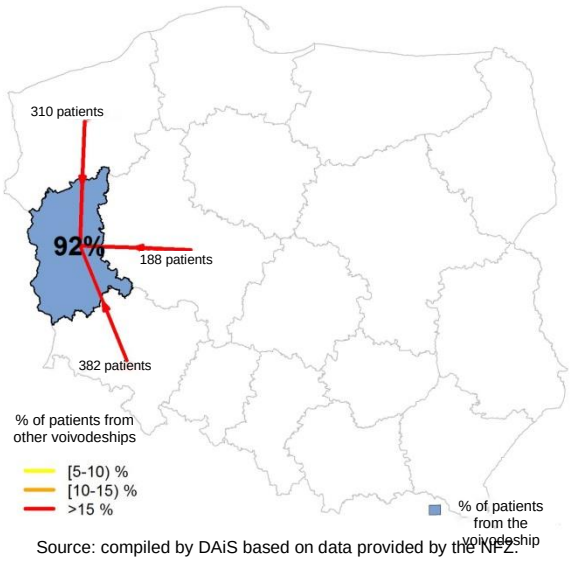
Source: compiled by DAiS based on data provided by the NFZ.

Figure 47: Cardiac patients migrations from Lubelskie Voivodeship



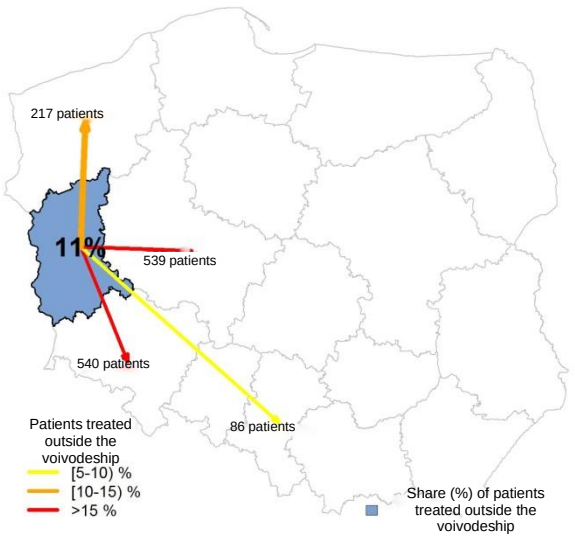
Source: compiled by DAiS based on data provided by the NFZ.

Figure 48: Cardiac patients migrations into Lubuskie Voivodeship



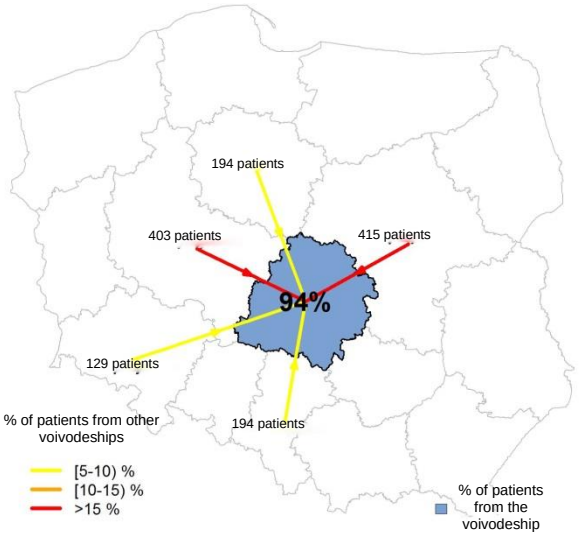
Source: compiled by DAiS based on data provided by the NFZ.

Figure 49: Cardiac patients migrations from Lubuskie Voivodeship



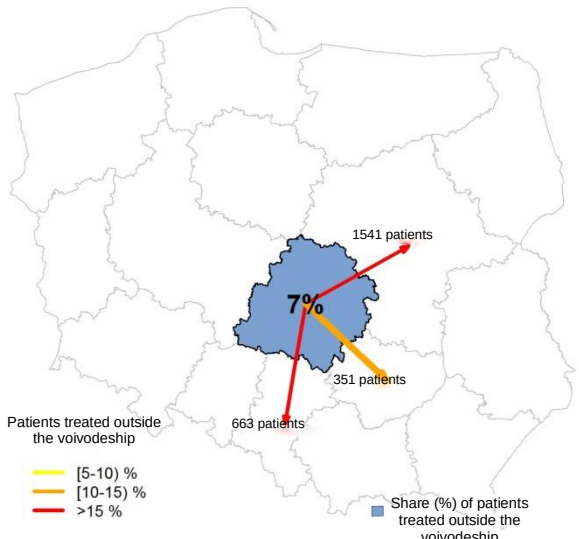
Source: compiled by DAiS based on data provided by the NFZ.

Figure 50: Cardiac patients migrations into Łódzkie Voivodeship



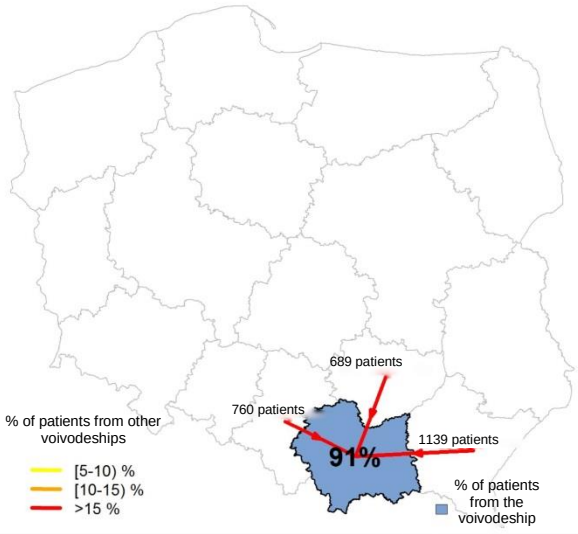
Source: compiled by DAiS based on data provided by the NFZ.

Figure 51: Cardiac patients migrations from Łódzkie Voivodeship



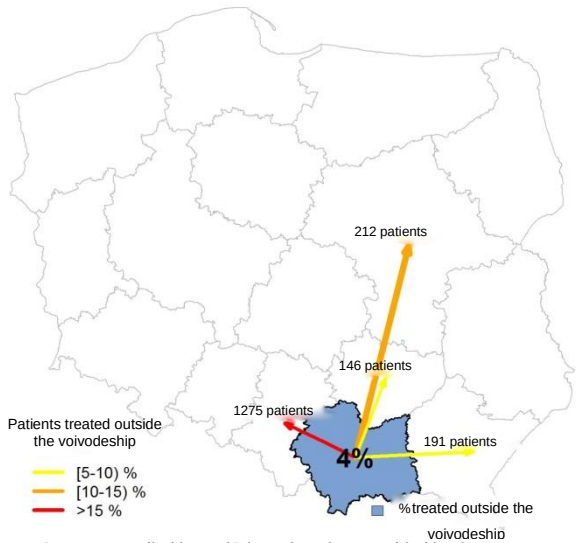
Source: compiled by DAiS based on data provided by the NFZ.

Figure 52: Cardiac patients migrations into Maopolskie Voivodeship



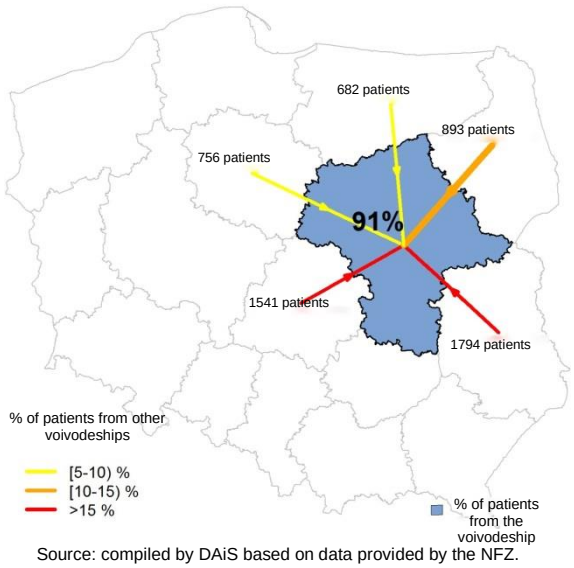
Source: compiled by DAiS based on data provided by the NFZ.

Figure 53: Cardiac patients migrations from Małopolskie Voivodeship



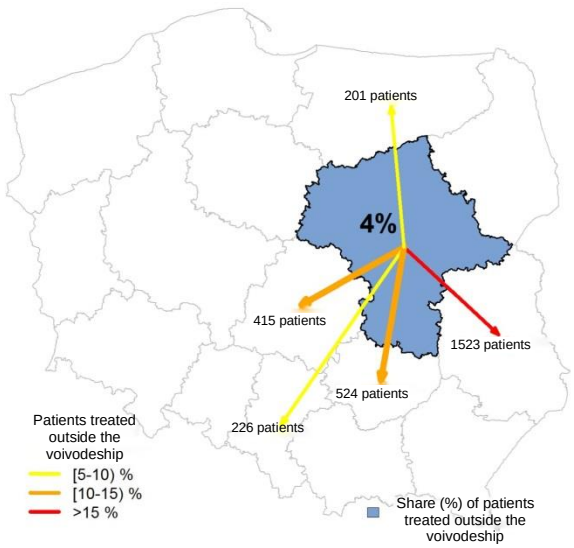
Source: compiled by DAiS based on data provided by the NFZ.

Figure 54: Cardiac patients migrations into Mazowieckie Voivodeship



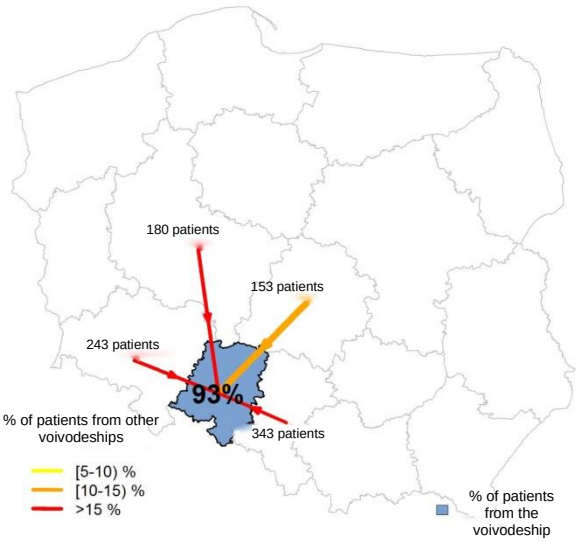
Source: compiled by DAiS based on data provided by the NFZ.

Figure 55: Cardiac patients migrations from Mazowieckie Voivodeship



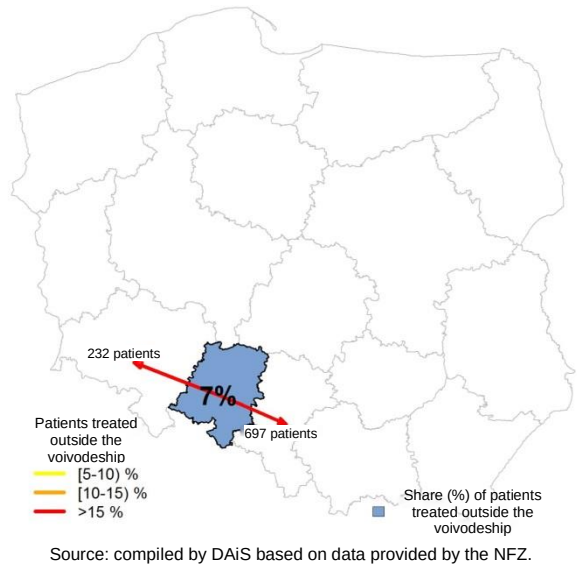
Source: compiled by DAiS based on data provided by the NFZ.

Figure 56: Cardiac patients migrations into Opolskie Voivodeship



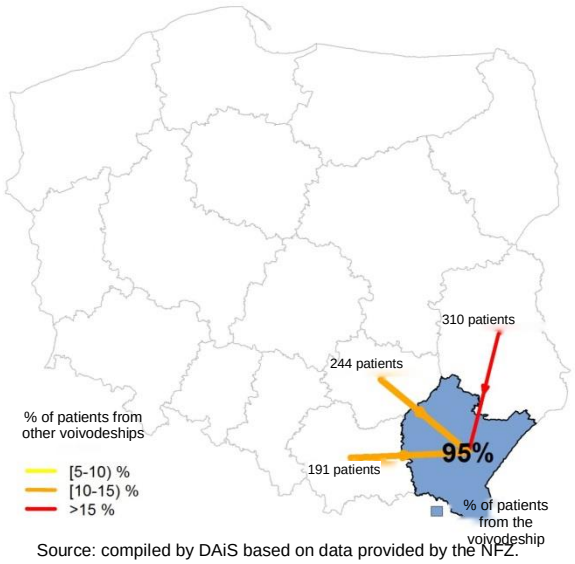
Source: compiled by DAiS based on data provided by the NFZ.

Figure 57: Cardiac patients migrations from Opolskie Voivodeship



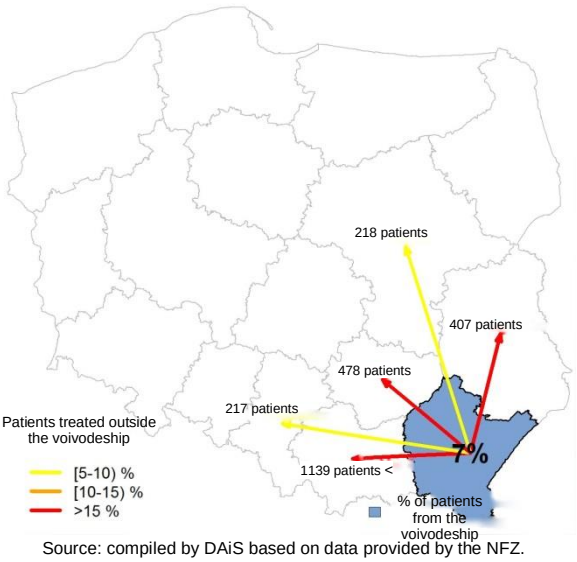
Source: compiled by DAiS based on data provided by the NFZ.

Figure 58: Cardiac patients migrations into Podkarpackie Voivodeship



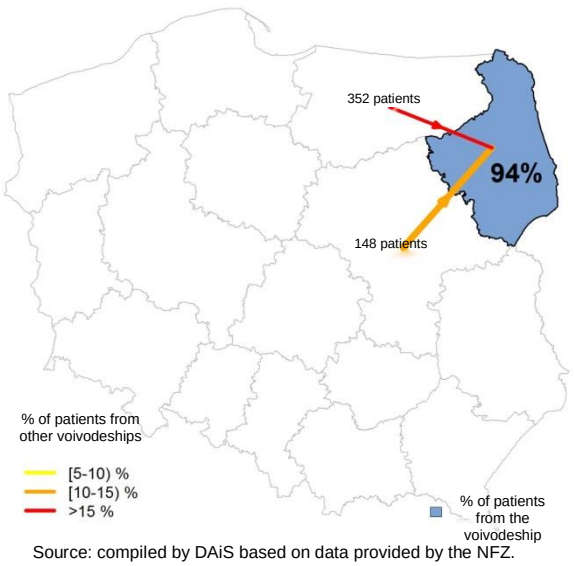
Source: compiled by DAiS based on data provided by the NFZ.

Figure 59: Cardiac patients migrations from Dolnośląskie Voivodeship



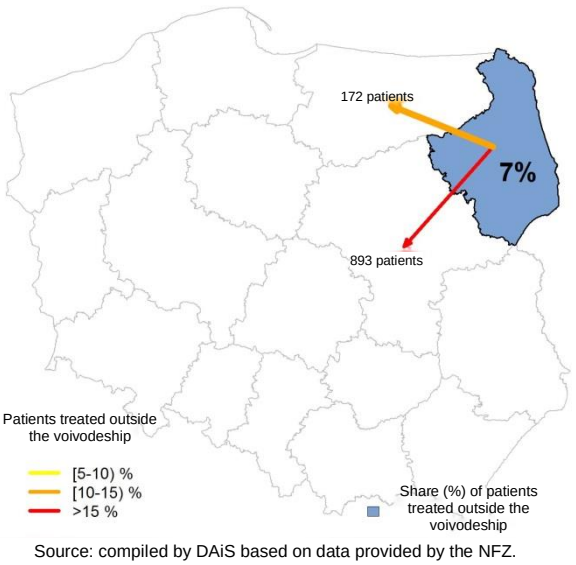
Source: compiled by DAiS based on data provided by the NFZ.

Figure 60: Cardiac patients migrations into Podlaskie Voivodeship



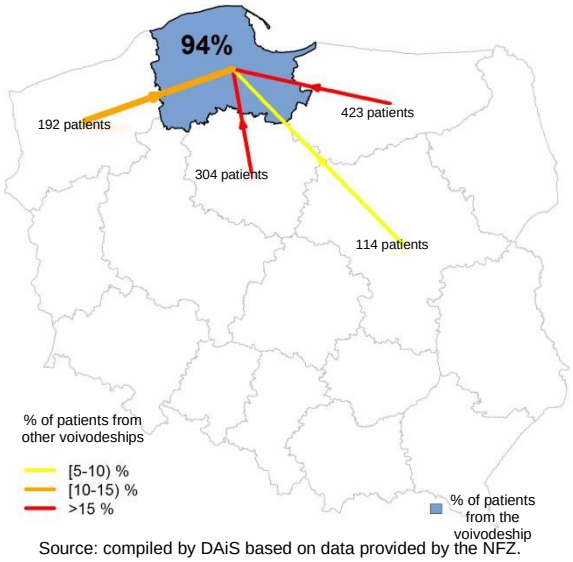
Source: compiled by DAiS based on data provided by the NFZ.

Figure 61: Cardiac patients migrations from Podlaskie Voivodeship



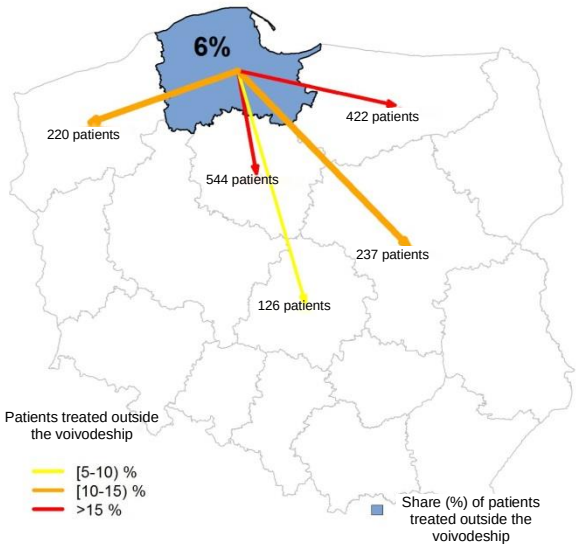
Source: compiled by DAiS based on data provided by the NFZ.

Figure 62: Cardiac patients migrations into Pomorskie Voivodeship



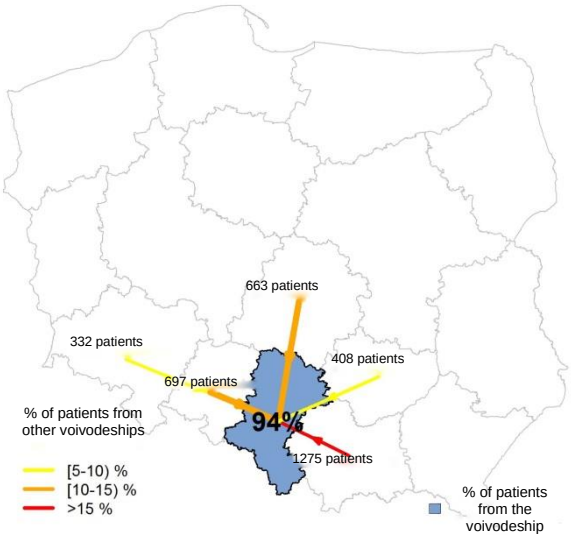
Source: compiled by DAiS based on data provided by the NFZ.

Figure 63: Cardiac patients migrations from Pomorskie Voivodeship



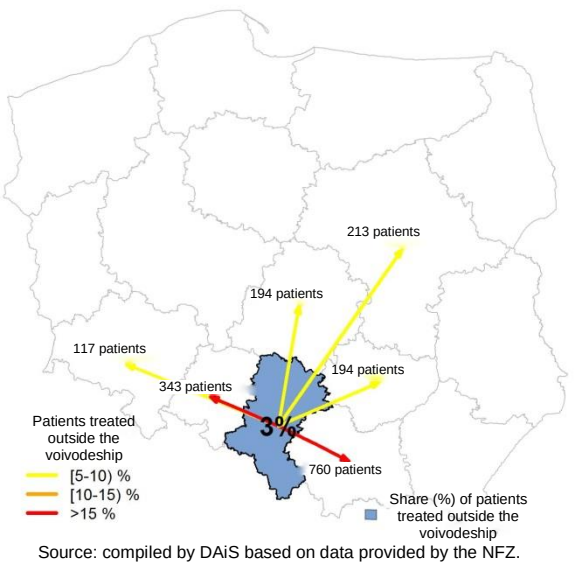
Source: compiled by DAiS based on data provided by the NFZ.

Figure 64: Cardiac patients migrations into Śląskie Voivodeship



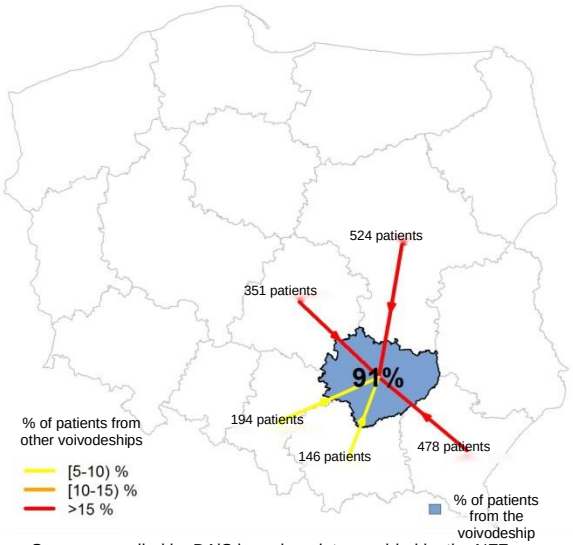
Source: compiled by DAiS based on data provided by the NFZ.

Figure 65: Cardiac patients migrations from Śląskie Voivodeship



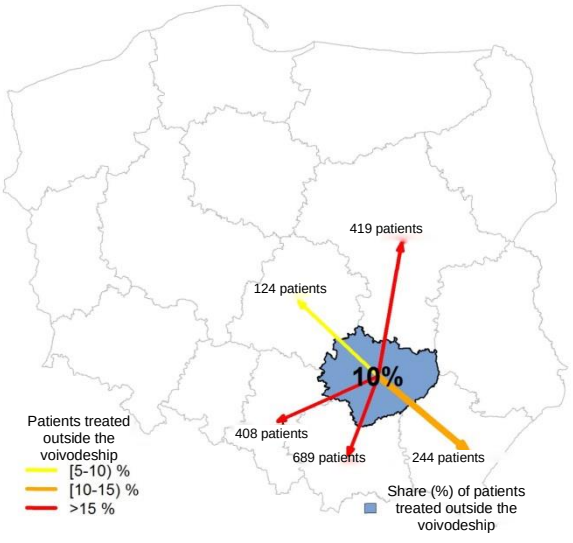
Source: compiled by DAiS based on data provided by the NFZ.

Figure 66: Cardiac patients migrations into Świętokrzyskie Voivodeship



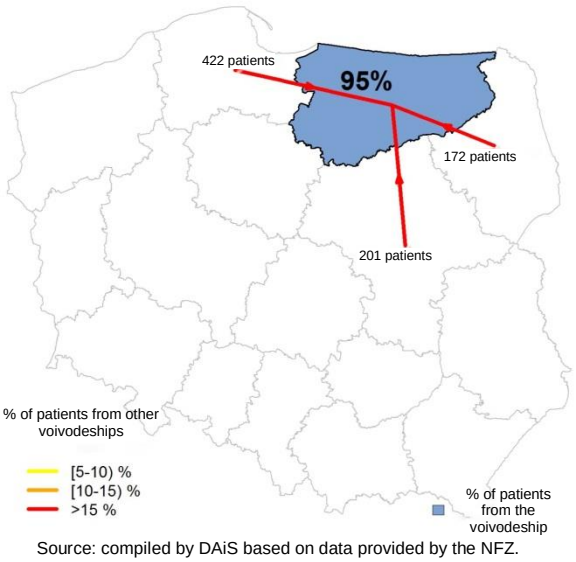
Source: compiled by DAiS based on data provided by the NFZ.

Figure 67: Cardiac patients migrations from Świętokrzyskie Voivodeship



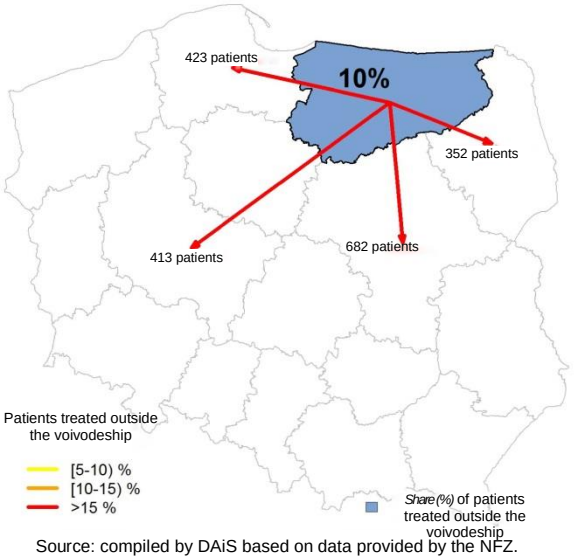
Source: compiled by DAiS based on data provided by the NFZ.

Figure 68: Cardiac patients migrations into Warmińsko-Mazurskie Voivodeship



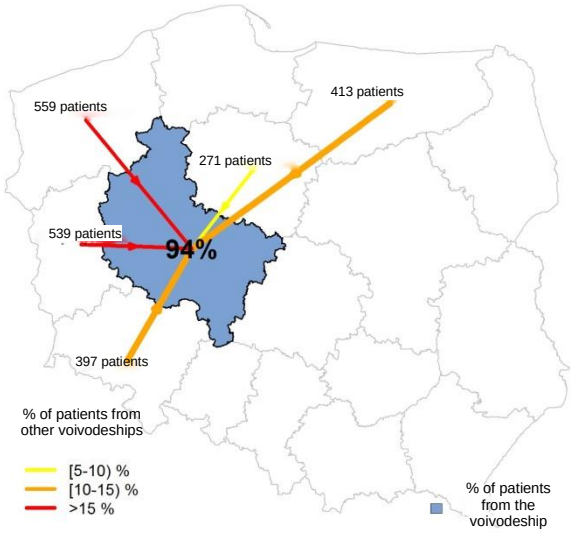
Source: compiled by DAiS based on data provided by the NFZ.

Figure 69: Cardiac patients migrations into Warmińsko-Mazurskie Voivodeship



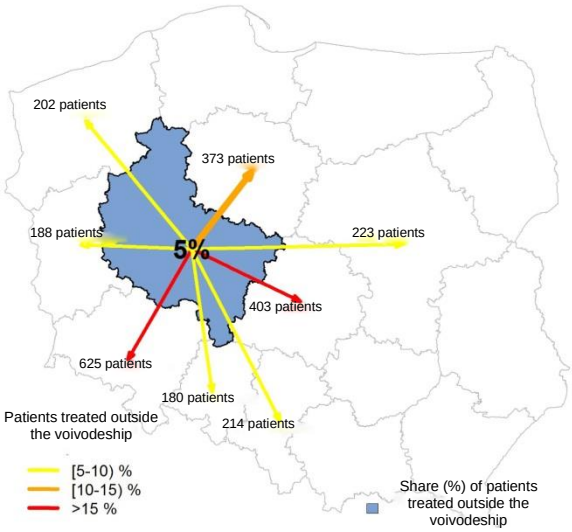
Source: compiled by DAiS based on data provided by the NFZ.

Figure 70: Cardiac patients migrations into Wielkopolskie Voivodeship



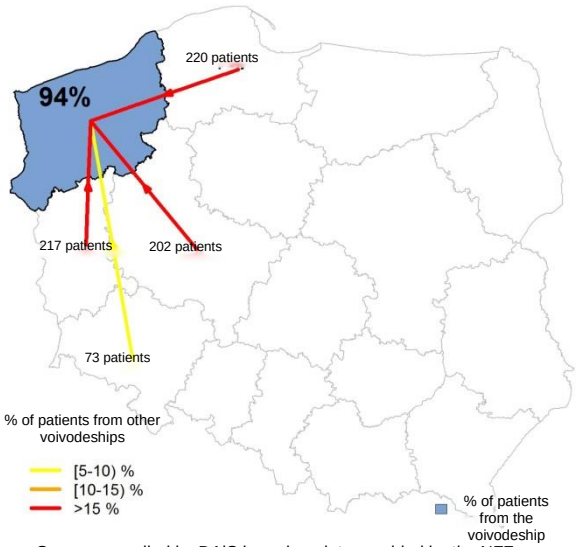
Source: compiled by DAiS based on data provided by the NFZ.

Figure 71: Cardiac patients migrations from Wielkopolskie Voivodeship



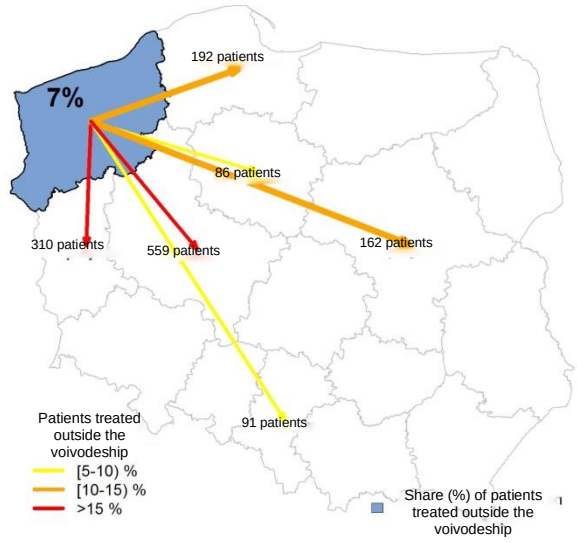
Source: compiled by DAiS based on data provided by the NFZ.

Figure 72: Cardiac patients migrations into Zachodniopomorskie Voivodeship



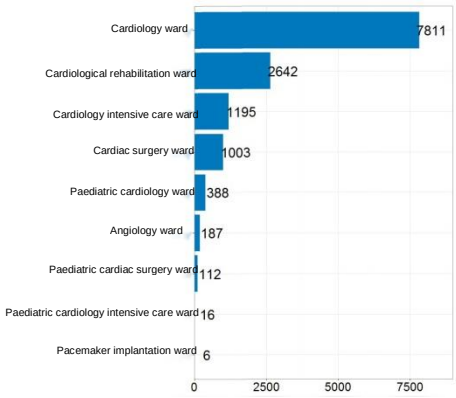
Source: compiled by DAiS based on data provided by the NFZ.

Figure 73: Cardiac patients migrations from Zachodniopomorskie Voivodeship



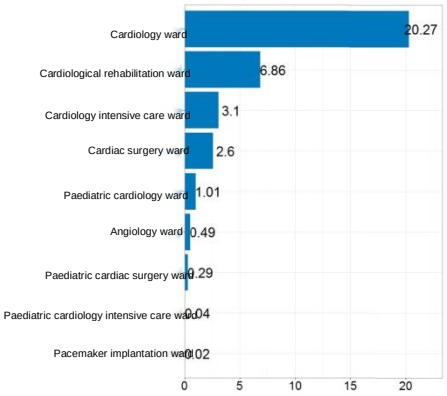
Source: compiled by DAiS based on data provided by the NFZ.

Figure 74: Number of beds in selected cardiology wards (2013)



Source: compiled by DAiS based on data provided by the Centre for Healthcare Information Systems (CSIOZ).

Figure 75: Beds in selected wards per 100 thousand inhabitants (2013)



Source: compiled by DAiS based on data provided by the CSIOZ.

2.1.2 Adult Cardiology

The analysis of selected healthcare providers

Table 3: Beds in selected wards per hospital (2013)

Healthcare provider Ward	City/town	Cardiology ward	Paediatric cardiology ward	Cardiology intensive care ward	Paediatric cardiology intensive care ward	Angiology ward	Cardiological rehabilitation ward	Cardiac surgery ward	Paediatric cardiac surgery ward
Cardinal Wyszyński Institute of Cardiology	Warsaw	272		24			12	55	
Clinical Hospital No. 7 of the Silesian Medical University in Katowice Prof. Leszek Giec Upper-Silesian Medical Centre	Katowice	197		4				98	
Silesian Center for Heart Diseases	Zabrze	104	16	27	10			66	4
John Paul II Specialist Hospital	Kraków– Krowodrza	103		40			43	80	
Military Memorial Medical Academy – Central Veterans' Hospital in Łódź	Łódź–Polesie	8							
University Clinical Centre	Gdańsk	70	18	11	2		16	31	2
Polska Grupa Medyczna Sp. z o.o.	Gliwice								
Central Clinical Hospital of the Ministry of the Interior and Administration in Warsaw	Warsaw	57		23		12	10	36	
4 Military Clinical Hospital with Specialist Outpatient Clinic Independent Public Healthcare Centre in Wrocław	Wrocław–Krzyki	93		9		10		20	
Independent Public Clinical Hospital No. 4 in Lublin	Lublin	47		23			10	31	
Józef Struś Multidisciplinary City Hospital with Care and Curative Institution Independent Public Healthcare Centre located in Poznań, Szwajcarska St. 3	Poznań–Nowe Miasto	26		9				29	
Karol Marcinkowski University Hospital of Lord's Transfiguration in Poznań	Poznań–Stare Miasto	43		17				35	
Independent Public Central Clinical Hospital	Warsaw	72		18		6		33	
Regional Polyclinical Hospital in Kielce	Kielce	92		10			16	15	

Source: compiled by DAiS based on data provided by the NFZ.

Table 4: Hospitalisations of cardiac patients in selected hospitals per ward (2013)

Hospital	City/town	Internal	Cardiology	Paediatric Cardiology	Cardiology intensive care	Paediatric cardiology intensive care	Cardiac Surgery	Paediatric Cardiac Surgery	Other	SUM	Number of unique patients
Cardinal Wyszyński Institute of Cardiology	Warsaw		11018				1890			12908	12431
Clinical Hospital No. 7 of the Silesian Medical University in Katowice Prof. Leszek Giec Upper-Silesian Medical Centre	Katowice	90	8641				2353		81	11165	10380
Silesian Center for Heart Diseases	Zabrze		5902	311		20	1828		392	8453	7956
John Paul II Specialist Hospital in Cracow	Kraków–Krowodrza		4321		2096		1789			8206	7682
Independent Public Healthcare Centre Military Memorial Medical Academy Central Veterans' Hospital in Łódź	Łódź–Polesie	49	5136				839		109	6133	5846
University Clinical Centre	Gdańsk	70	4092	88			1067		165	5482	5239
Polska Grupa Medyczna Sp. z o.o.	Gliwice		5058							5058	5058
Central Clinical Hospital of the Ministry of the Interior and Administration in Warsaw	Warsaw		4028				490		638	5156	4962
4 Military Clinical Hospital with Specialist Outpatient Clinic Independent Public Healthcare Centre in Wrocław	Wrocław–Krzyk i	148	4300				576			5024	4868
Independent Public Clinical Hospital No. 4 in Lublin	Lublin		4399				560			4959	4852
Józef Struś Multidisciplinary City Hospital with Care and Curative Institution Independent Public Healthcare Centre located in Poznań, Szwajcarska St. 3	Poznań–Nowe Miasto	746	3443				704			4893	4700
Karol Marcinkowski University Hospital of Lord's Transfiguration in Poznań	Poznań–Stare Miasto	1197	2812				607		76	4692	4467
Independent Public Central Clinical Hospitaly	Warsaw	1072	3175				461			4708	4447
Regional Polyclinical Hospital in Kielce	Kielce	218	3823				482			4523	4327

Source: compiled by DAiS based on data provided by the NFZ.

Table 5: Share of cardiac patients in selected hospitals per ward (2013)

Healthcare provider / Ward	City/town	Internal	Cardiology	Paediatric Cardiology	Cardiology intensive care	Paediatric cardiology intensive care	Cardiac Surgery	Paediatric Cardiac Surgery	Other
Cardinal Wyszyński Institute of Cardiology	Warsaw		85.4%				14.6%		
Clinical Hospital No. 7 of the Silesian Medical University in Katowice Prof. Leszek Giec Upper-Silesian Medical Centre	Katowice	0.8%	77.4%				21.1%		0.7%
Silesian Center for Heart Diseases in Zabrze	Zabrze		69.8%	3.7%		0.2%	21.6%		4.6%
John Paul II Specialist Hospital in Cracow	Kraków–Krowodrza		52.7%		25.5%		21.8%		
Independent Public Healthcare Centre Military Memorial Medical Academy – Central Veterans' Hospital in Łódź	Łódź–Polesie	0.8%	83.7%				13.7%		1.8%
University Clinical Centre	Gdańsk	1.3%	74.6%	1.6%			19.5%		3.0%
Polska Grupa Medyczna Sp. z o.o.	Gliwice		100.0						
Central Clinical Hospital of the Ministry of the Interior and Administration in	Warsaw		78.1%				9.5%		12.4%
4 Military Clinical Hospital with Specialist Outpatient Clinic Independent Public Healthcare Centre in Wrocław	Wrocław–Krzyki	2.9%	85.6%				11.5%		
Independent Public Clinical Hospital No. 4 in Lublin	Lublin		88.7%				11.3%		
Józef Struś Multidisciplinary City Hospital with Care and Curative Institution Independent Public Healthcare Centre located in Poznań, Szwajcarska St. 3	Poznań–Nowe Miastc	15.2%	70.4%				14.4%		
Karol Marcinkowski University Hospital of Lord's Transfiguration in Poznań	Poznań–Stare Miasto	25.5%	59.9%				12.9%		1.6%
Public Paediatric Central Clinical Hospital	Warsaw	*22.8%*	67.4%				9.8%		
Regional Polyclinical Hospital in Kielce	Kielce	4.8%	84.5%				10.7%		

Source: compiled by DAiS based on data provided by the NFZ.

Table 6: Hospitalisations of cardiac patients in selected hospitals per diagnoses

Healthcare provider / Scope of treatment	ACS	Other forms of ischaemic heart disease	Atrial fibrillationand flutter	Other rhythm and conduction disturbances	Heart failure	Pulmonary embolism	Acquired heart defects	Congenital heart defects	Hospitalisations in total
Cardinal Wyszyński Institute of Cardiology	1838	6053	1305	1769	1461	42	2506	996	15886
Clinical Hospital No. 7 of the Silesian Medical University in Katowice Prof. Leszek Giec Upper-Silesian Medical Centre	2703	4762	877	1703	813	60	1546	148	12608
Silesian Center for Heart Diseases in Zabrze	1625	3482	756	925	1890	44	957	445	10116
John Paul II Specialist Hospital	2604	2893	387	836	328	55	1891	296	8982
Military Memorial Medical Academy – Central Veterans' Hospital in Łódź	1486	1958	900	1094	882	58	840	125	7341
University Clinical Centre	1054	2629	542	652	740	67	762	113	6555
Polska Grupa Medyczna Sp. z o.o.	3922	1180	68	441	132	34	74	4	5855
Central Clinical Hospital of the Ministry of the Interior and Administration in	858	2122	743	699	1040	162	698	105	6427
4 Military Clinical Hospital with Specialist Outpatient Clinic Independent Public Healthcare Centre in Wrocław	1003	2238	486	774	557	66	811	55	5990
Independent Public Clinical Hospital No. 4 in Lublin	723	1555	2466	1136	643	73	246	25	6852
Józef Struś Multidisciplinary City Hospital with Care and Curative Institution Independent Public Healthcare Centre located in Poznań, Szwajcarska St 3	1057	3106	286	265	633	45	276	72	5736
Karol Marcinkowski University Hospital of Lord's Transfiguration in Poznań	578	2568	384	580	501	29	647	107	5387
Independent Public Central Clinical Hospital	814	1283	776	539	962	217	816	29	5435
Regional Polyclinical Hospital in Kielce	1352	1119	596	991	686	68	264	18	5091

Source: compiled by DAiS based on data provided by the NFZ.

Table 7: Share of hospitalisations of cardiac patients in selected hospitals per diagnoses (2013)

Healthcare provider / Scope of treatment	ACS	Other forms of ischaemic heart disease	Atrial fibrillation and flutter	Other rhythm and conduction disturbances	Heart failure	Pulmonary embolism	Acquired heart defects	Congenital heart defects
Cardinal Wyszyński Institute of Cardiology	11.6%	38.1%	8.2%	11.1%	9.2%	0.3%	15.8%	6.3%
Clinical Hospital No. 7 of the Silesian Medical University in Katowice Prof. Leszek Giec Upper-Silesian Medical Centre	21.4%	37.8%	7.0%	13.5%	6.4%	0.5%	12.3%	1.2%
Silesian Centre of Heart Diseases in Zabrze	16.1%	34.4%	7.5%	9.1%	18.7%	0.4%	9.5%	4.4%
John Paul II Specialist Hospital in Cracow	29.0%	28.9%	4.3%	9.3%	3.7%	0.6%	21.1%	3.3%
Independent Public Healthcare Centre Military Memorial Medical Academy – Central Veterans' Hospital in Łódź	20.2%	26.7%	12.3%	14.9%	12.0%	0.8%	11.4%	1.7%
University Clinical Centre	16.1%	40.1%	8.3%	9.9%	11.3%	1.0%	11.6%	1.7%
Polska Grupa Medyczna Sp. z o.o.	67.0%	20.2%	1.2%	7.5%	2.3%	0.6%	1.3%	0.1%
Central Clinical Hospital of the Ministry of the Interior and Administration	13.3%	33.0%	11.6%	10.9%	16.2%	2.5%	10.9%	1.6%
4 Military Clinical Hospital with Specialist Outpatient Clinic Independent	16.7%	37.4%	8.1%	12.9%	9.3%	1.1%	13.5%	0.9%
Independent Public Clinical Hospital No. 4 in Lublin	10.6%	22.7%	36.0%	16.6%	9.4%	1.1%	3.6%	0.4%
Józef Struś Multidisciplinary City Hospital with Care and Curative Institution Independent Public Healthcare Centre located in Poznań Szwajcarska St. 3	18.4%	54.1%	5.0%	4.6%	11.0%	0.8%	4.8%	1.3%
Karol Marcinkowski University Hospital of Lord's Transfiguration in Poznań	10.7%	47.7%	7.1%	10.8%	9.3%	0.5%	12.0%	2.0%
Independent Public Central Clinical Hospital	15.0%	23.6%	14.3%	9.9%	17.7%	4.0%	15.0%	0.5%
Regional Polyclinical Hospital in Kielce	26.6%	22.0%	11.7%	19.5%	13.5%	1.3%	5.2%	0.4%

Source: compiled by DAiS based on data provided by the NFZ.

Table 8: number of hospitalisations of cardiac patients in selected hospitals per procedure (2013)

Hospital	Coronary angiography	Coronary angioplasty	Pacemaker	ICD	CRT–D	Alation	Valve surgery	Other or no procedure	Hospitalisations in total
Cardinal Wyszyński Institute of Cardiology	4611	2297	1006	305	210	591	447	7592	15886
Clinical Hospital No. 7 of the Silesian Medical University in Katowice Prof. Leszek Giec Upper-Silesian Medical Centre	6196	2809	1199	336	186	325	882	2291	12608
Silesian Centre of Heart Diseases in Zabrze	4242	2473	581	366	277	463	609	2818	10116
John Paul II Specialist Hospital	3962	2413	706	237	63	219	677	1891	8982
Military Memorial Medical Academy – Central Veterans' Hospital in Łódź	2796	1577	610	158	98	349	239	2602	7341
University Clinical Centre	3203	1706	282	143	53	221	480	1685	6555
Polska Grupa Medyczna Sp. z o.o.	5198	3097	407	97	3	70		251	5855
Central Clinical Hospital of the Ministry of the Interior and Administration in	1310	1002	335	56	36	123	146	3388	6427
4 Military Clinical Hospital with Specialist Outpatient Clinic Independent Public Healthcare Centre in Wrocław	2601	1636	385	154	71	482	284	1445	5990
Independent Public Clinical Hospital No. 4 in Lublin	1517	843	707	178	76	318	166	3342	6852
Józef Struś Multidisciplinary City Hospital with Care and Curative Institution Independent Public Healthcare Centre located in Poznań, Szwajcarska St. 3	3287	1852	233	87	7	16	153	1375	5736
Karol Marcinkowski University Hospital of Lord's Transfiguration in Poznań	1863	1217	311	115	60	281	223	1176	5387
Independent Public Central Clinical Hospital	1434	714	325	102	38	325	118	2837	5435
Regional Polyclinical Hospital in Kielce	1812	842	685	84	29	283	62	1872	5091

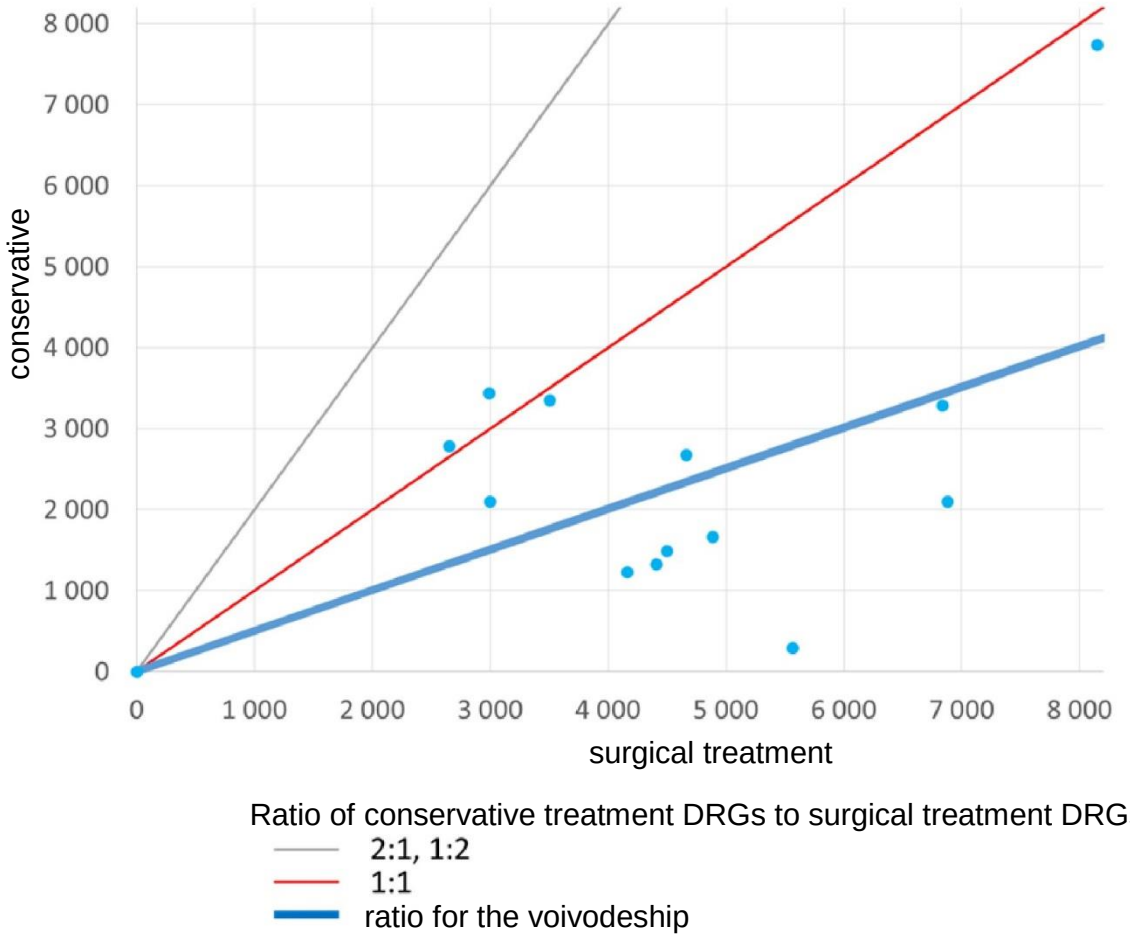
Source: compiled by DAiS based on data provided by the NFZ.

Table 9: Share of hospitalisations of cardiac patients in selected hospitals per procedure (2013)

Healthcare provider / Procedure	Coronary angiography	Coronary angioplasty	Pacemaker	ICD	CRT–D	Alation	Valve surgery	Other or no procedure
Cardinal Wyszyński Institute of Cardiology	29.0%	14.5%	6.3%	1.9%	1.3%	3.7%	2.8%	47.8%
Clinical Hospital No. 77 of the Silesian Medical University in Katowice Prof. Leszek Giec Upper-Silesian Im. Medical Centre	49.1%	22.3%	9.5%	2.7%	1.5%	2.6%	7.0%	18.2%
Silesian Center for Heart Diseases in Zabrze	41.9%	24.4%	5.7%	3.6%	2.7%	4.6%	6.0%	27.9%
John nPaul II Specialist Hospital in Cracow – Hospital Wards	44.1%	26.9%	7.9%	2.6%	0.7%	2.4%	7.5%	21.1%
Independent PublicMedical Healthcare Centre Military Memorial –Central Veterans' Hospital in Łódź	38.1%	21.5%	8.3%	2.2%	1.3%	4.8%	3.3%	35.4%
University University Centre	48.9%	26.0%	4.3%	2.2%	0.8%	3.4%	7.3%	25.7%
Polska Grupa Medyczna Sp. z o.o.	88.8%	52.9%	7.0%	1.7%	0.1%	1.2%		4.3%
Central Clinical Hospital of the Ministry of the Interior and Administration in Warsaw	20.4%	15.6%	5.2%	0.9%	0.6%	1.9%	2.3%	52.7%
4 Military Clinical Hospital with Specialist Outpatient Clinic Independent Public Healthcare Centre in Wrocław	43.4%	27.3%	6.4%	2.6%	1.2%	8.0%	4.7%	24.1%
Independent Public Clinical Hospital No. 4 in Lublin	22.1%	12.3%	10.3%	2.6%	1.1%	4.6%	2.4%	48.8%
Józef Struś Multidisciplinary City Hospital with Care and Curative Institution Independent Public Healthcare Centre located in Poznań Szwajcarska St. 3	57.3%	32.3%	4.1%	1.5%	0.1%	0.3%	2.7%	24.0%
Karol Marcinkowski University Hospital of Lord's Transfiguration in Poznań	34.6%	22.6%	5.8%	2.1%	1.1%	5.2%	4.1%	21.8%
Independent Public Central Clinical Hospital	25.4%	13.1%	6.0%	1.9%	0.7%	6.0%	2.2%	52.2%
Regional Polyclinical Hospital in Kielce	35.6%	16.5%	13.5%	1.6%	0.6%	5.6%	1.2%	36.8%

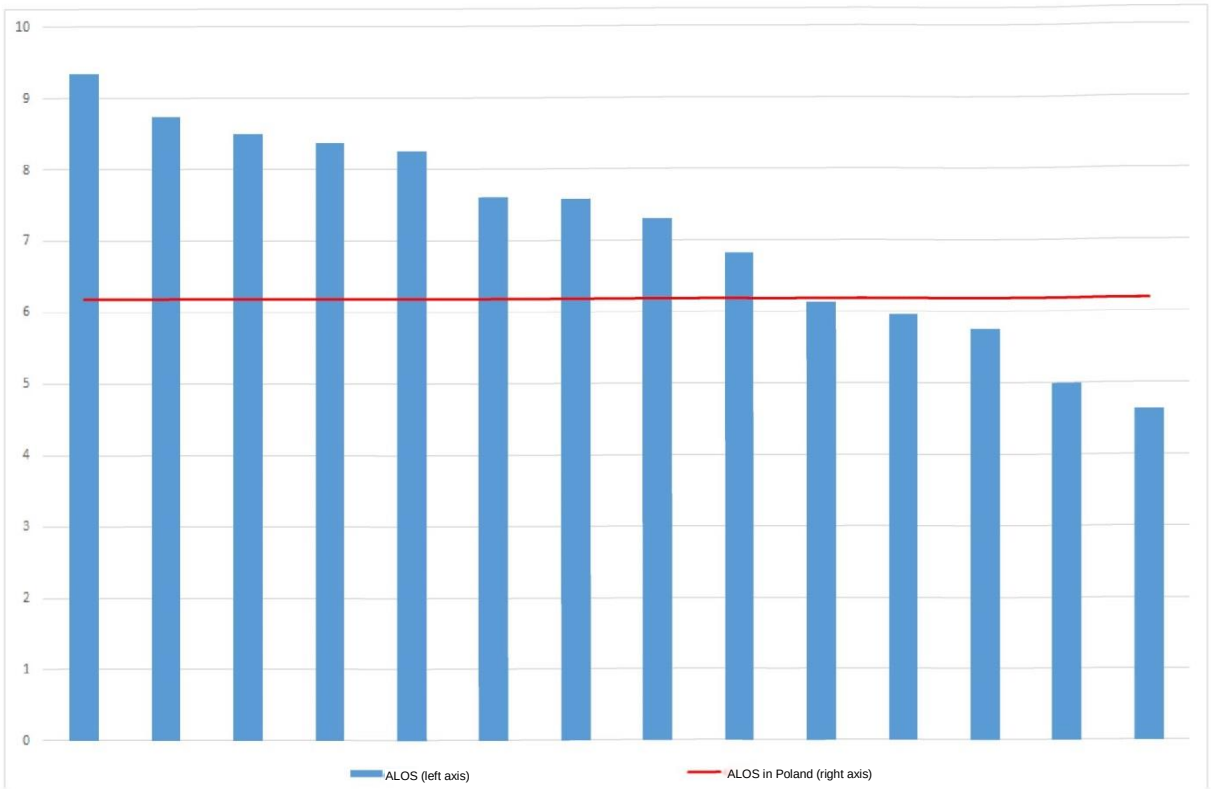
Source: compiled by DAiS based on data provided by the NFZ.

Figure 76: Ratio of reported conservative treatment DRGs to surgical treatment DRGs.



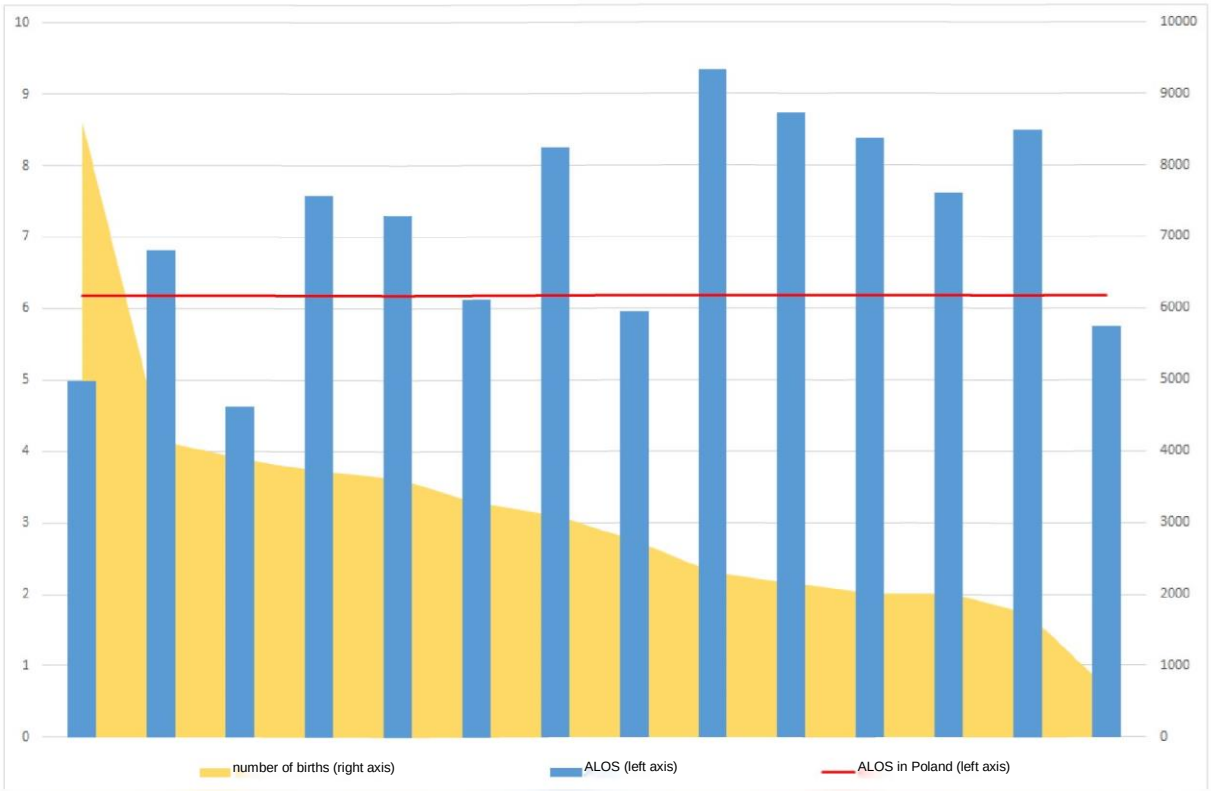
Source: compiled by DAiS based on data provided by the NFZ.

Figure 77: ALOS (for adults) with regard to conservative treatment DRGs per hospital (2013)



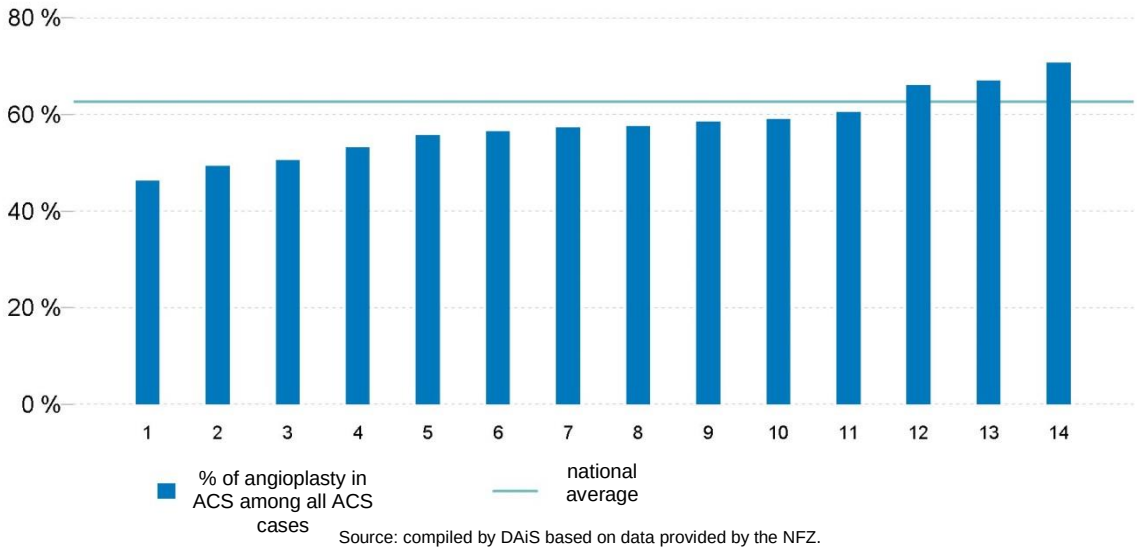
Source: compiled by DAiS based on data provided by the NFZ.

Figure 78: Average length of stay - ALOS (adults) and the number of hospitalised patients for selected healthcare providers within reported conservative treatment DRGs (2013)



Source: compiled by DAiS based on data provided by the NFZ.

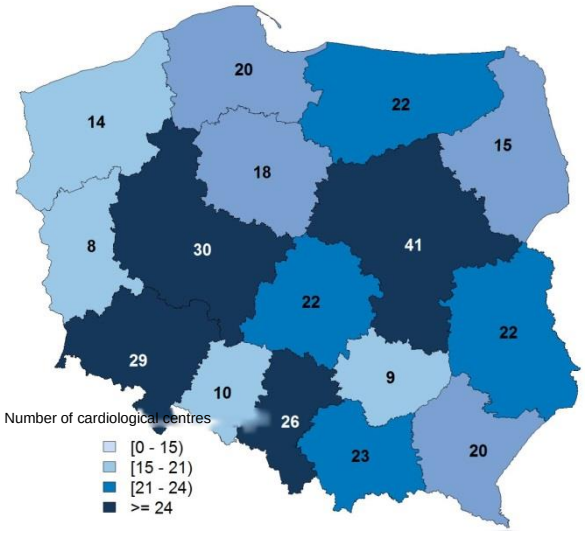
Figure 79: Angioplasty in ACS to ACS cases ratio (2013)



Source: compiled by DAiS based on data provided by the NFZ.

2.1.3 Paediatric Cardiology

Figure 80: Number of centres admitting children with cardiac diseases (2013)



Source: compiled by DAiS based on data provided by the NFZ.

Table 10: Number of hospitalisations of newborns (2013)

Hospital	City/town	Number of hospitalisation
The Children"s Memorial Health Institute in Warsaw	Warsaw	114
Karol Jonscher Clinical Hospital at the Karol Marcinkowski Medical University in Poznań	Poznań-Jeżyce	102
University Children's Hospital in Lublin	Lublin	96
Children's Hospital	Cracow	00
Independent Public Paediatric Clinical Hospital	Warsaw	88
Polish Mother’s Memorial Hospital Research Institute	Łódź	58
Mikołaj Kopernik Hospital	Gdańsk	48
Regional Specialist Hospital in Wrocław	Wrocław	46
Independent Public Clinical Hospital No. 6 of the Upper-Silesian Child Healthcare Centre in Katowice	Medical Centre	88
Silesian Center for Heart Diseases in Zabrze	Zabrze	36
Independent Public Healthcare Centre Maria Konopnicka Clinical Hospital No. 4 of the Medical University in Łódź	Lodź	29
Specialist Mother and Child Healthcare Complex in Poznań	Poznań–Stare Miasto	28
University Clinical Centre	Gdańsk	26
Ludwik Zamenhof University Paediatric Clinical Hospital in Białystok	Białystok	19
Non-Public Healthcare Centre Lower Silesia Centre for Heart Diseases “Medinet”	Wrocław	18
Independent Public Integrated Regional Hospital	Szczecin	18

Source: compiled by DAiS based on data provided by the NFZ

Table 11: Number of hospitalisations of infants (2013)

Hospital	City/town	number of hospitalisations
Karol Jonscher Clinical Hospital at the Karol Marcinkowski Medical University in Poznań	Poznań	675
Independent Public Paediatric Clinical Hospital	Warsaw	412
Children's Memorial Health Institute in Warsaw	Warsaw	372
Polish Mother's Memorial Hospital Research Institute	Łódź	294
Independent Public Clinical Hospital No. 6 of the Górnośląskie Child Healthcare Centre in Katowice	Medical Centre	276
University Children's Hospital in Lublin	Lublin	270
Specialist Mother and Child Healthcare Complex in Poznań	Poznań–[illegible]	239
Children's Hospital	Cracow	229
Mikołaj Kopernik Hospital	Gdańsk	210
Silesian Center for Heart Diseases in Zabrze	Zabrze	184
Regional Specialist Hospital in Wrocław	Wrocław	146
J. Brudziński Regional Paediatric Hospital in Bydgoszcz	Bydgoszcz	89
Non-Public Healthcare Centre Lower Silesia Centre for Heart Diseases "Medinet"	Wrocław	85
University Clinical Centre	Gdańsk	80
Independent Public Regional Polyclinical Hospital	Szczecin	73
Ludwik Rydygier Regional Polyclinical Hospital in Toruń	Toruń	70
Ludwik Zamenhof University Paediatric Clinical Hospital in Białystok	Białystok	57
Independent Public Healthcare Centre Maria Konopnicka Clinical Hospital No. 4 of the Medical University in Łódź	Łódź	56
T. Sokołowski Independent Public Clinical Hospital No. 1 of the Pomeranian Medical University in Szczecin	Szczecin	53
Independent Public Clinical Hospital No. 1 in Wrocław	Wrocław	52

Source: compiled by DAiS based on data provided by the NFZ

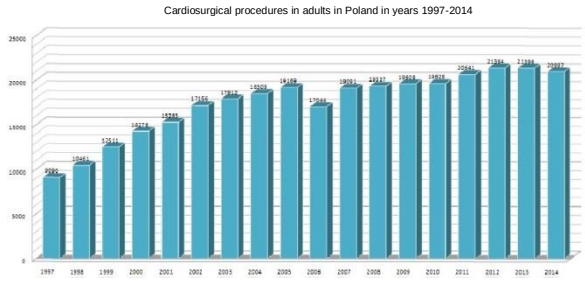
Table 12: Number of hospitalisations of children (1-17 y.o.) (2013)

Hospital	City/town	number of hospitalisation
Independent Public Paediatric Clinical Hospital	Warsaw	1462
Polish Mother's Memorial Hospital Research Institute	Łódź	1377
The Children's Memorial Health Institute in Warsaw	Warszawa	1265
Karol Jonscher Clinical Hospital at the Karol Marcinkowski Medical University in Poznań	Poznań-Jeżyce	1137
Independent Public Clinical Hospital No. 6 of the Upper-Silesian Child Healthcare Centre in Katowice	Katowice	774
Silesian Center for Heart Diseases in Zabrze	Zabrze	712
Ludwik Zamenhof University Paediatric Clinical Hospital in Białystok	Białystok	486
University Children's Hospital in Lublin	Lublin	427
Children's Hospital	Cracow	418
Regional Specialist Hospital in Wrocław	Wrocław	368
Independent Public Clinical Hospital No. 1 in Wrocław	Wrocław	237
Ludwik Rydygier Regional Polyclinical Hospital in Toruń	Toruń	237
Mikołaj Kopernik Hospital	Gdańsk	208
University Clinical Centre	Gdańsk	194
Independent Public Regional Polyclinical Hospital	Szczecin	191
J. Brudziński Regional Paediatric Hospital in Bydgoszcz	Bydgoszcz	181
Prof. Jan Bogdanowicz Children's Hospital Independent Public Healthcare Centre	Warszawa	179
Independent Public Healthcare Centre Maria Konopnicka Clinical Hospital No. 4 of the Medical University in	Łódź	175
Specialist Mother and Child Healthcare Complex in Poznań	Poznań–Stare	148
Władysław Biegański Regional Specialist Hospital in Grudziądz	Grudziądz	142
Jędrzej Śniadecki Independent Public Healthcare Centre Regional Hospital	Białystok	117

Source: compiled by DAiS based on data provided by the NFZ

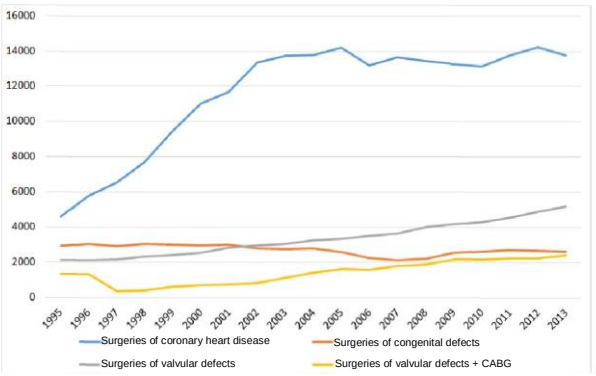
2.1.4 Adult Cardiac Surgery

Figure 81: Number of cardiosurgical procedures in adults in Poland (1997-2014)



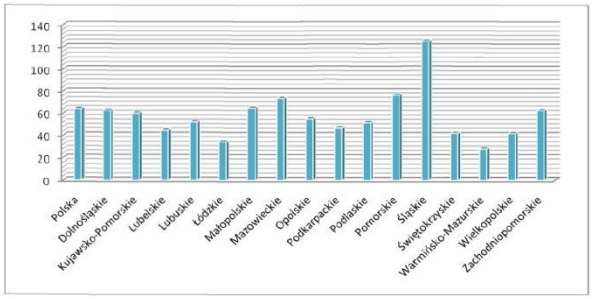
Source: KROK and "Kardiochirurgia Polska 2014" report, authored by B. Maruszewski, Z. Tobota, consulted by M. Zembala (www.krok.org.pl).

Figure 82: Trends of changes in basic types of cardiosurgical procedures (1995–2013)



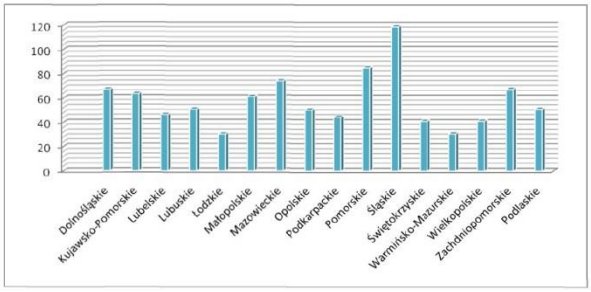
Source: KROK and "Kardiochirurgia Polska 2013" report, authored by B. Maruszewski, Z. Tobota, consulted by M. Zembala (www.krok.org.pl).

Figure 83: Number of cardiosurgical procedures in adults per 100 thousand inhabitants in selected voivodeships in 2013



Source: KROK and "Kardiochirurgia Polska 2013" report, authored by B. Maruszewski, Z. Tobota, consulted by M. Zembala (www.krok.org.pl).

Figure 84: Number of cardiosurgical procedures in adults per 100 thousand inhabitants in selected voivodeships in 2014



Source: KROK and "Kardiochirurgia Polska 2014" report, authored by B. Maruszewski, Z. Tobota, consulted by M. Zembala (www.krok.org.pl).

Table 13: Equipment and staff resources in adult cardiac surgery in 2013 and 2014

	2013	2014
Number of centres	31	32
Operating theatres	72	70
ICU positions	319	348
Cardiosurgical beds	909	941
Independent researchers	47	50
Cardiac surgeons	239	249
Cardiac anaesthesiologists	207	205
Perfusionists	174	167

Source: KROK and "Kardiochirurgia Polska 2014 i 2014" report, authored by B. Maruszewski, Z. Tobota, consulted by M. Zembala (www.krok.org.pl).

Table 14: Selected types of procedures in 2013 and 2014

Status and Use of Resources: the Analysis	2013	2014
Cardiosurgical procedures in adults in total	24,703	25 233
Coronary bypass surgeries	13 775	13,412
Surgeries of acquired defects (valvular)	5,175	5260
Combined surgeries	2,426	2325
Thoracic aortic aneurysms	1 470	1562
Aortic dissection type A	533	623
Infective endocarditis	268	196
Surgeries per operating theatre	342.09	360.47
Surgeries per 100 thousand inhabitants	64.17	65.57

KROK and "Kardiochirurgia Polska 2013" report, authored by B. Maruszewski, Z. Tobota, consulted by M. Zembala (www.krok.org.pl).

Table 15: Main types of procedures performed in cardiac surgery centres in the Dolnośląskie Voivodeship (2013-2014)

Centre	Year	Cardiac surgeries in total	Coronary bypass surgeries	Acquired defects (valvular)	Combined surgeries	Thoracic aortic aneurysms	Aortic dissection type A	Infective endocarditis
4 Military Clinical Hospital in Wrocław	**2013**	666	*299*	181	*92*	75	12	7
	2014	717	*357*	166	*79*	80	21	7
Jan Mikulicz–Radecki University Teaching Hospital in Wrocław	**2013**	446	*266*	88	*52*	30	8	5
	2014	408	258	71	53	24	*9*	4
Non-Public Healthcare Centre Lower Silesia Centre for Heart Diseases "Medinet"	**2013**	880	538	103	59	15	8	4
	2014	827	516	89	54	17	11	7

Source: KROK and "Kardiochirurgia Polska 2014 i 2013" report, authored by B. Maruszewski, Z. Tobota, consulted by M. Zembala (www.krok.org.pl).

Table 16: Main types of procedures performed in cardiac surgery centres in the Kujawsko–Pomorskie Voivodeship (2013-2014)

Centre	Year	Cardiac surgeries in total	Coronary bypass surgeries	Acquired defects (valvular)	Combined surgeries	Thoracic aortic aneurysms	Aortic dissection type A	Infective endocarditis
Antoni Jurasz University Hospital in Bydgoszcz	**2013**	725	409	149	71	64	33	15
	2014	725	427	123	64	64	29	12
10 Military Clinical Hospital in Bydgoszcz	**2013**	398	283	57	23	12	6	5
	2014	396	292	66	21	10	3	9
Władysław Biegański Regional Specialist Hospital in Grudziądz	**2013**	136	130	0	3	0	1	0
	2014	209	141	33	15	6	3	1

Source: KROK and "Kardiochirurgia Polska 2014 i 2013" report, authored by B. Maruszewski, Z Tobota, consulted by M. Zembala (www.krok.org.pl).

Table 17: Main types of procedures performed in cardiac surgery centres in Lubelskie Voivodeship (2013-2014)

Centre	Year	Cardiac surgeries in total	Coronary bypass surgeries	Acquired defects (valvular)	Combined surgeries	Thoracic aortic aneurysms	Aortic dissection type A	Infective endocarditis
Independent Public Clinical Hospital No. 4 of Pomeranian Medical University in Szczecin	**2013**	613	377	117	68	28	8	11
	2014	590	354	115	73	30	3	6
John Paul II Independent Public Provincial Hospital in Zamość	**2013**	359	203	82	35	20	11	3
	2014	408	238	93	37	18	4	3

Source: KROK and "Kardiochirurgia Polska 2014 i 2013" report, authored by B. Maruszewski, Z Tobota, consulted by M. Zembala (www.krok.org.pl).

Table 18: Main types of procedures performed in cardiac surgery centres in Lubuskie Voivodeship (2013-2014)

Centre	Year	Cardiac surgeries in total	Coronary bypass surgeries	Acquired defects (valvular)	Combined surgeries	Thoracic aortic aneurysms	Aortic dissection type A	Infective endocarditis
Non-Public Healthcare Centre Lower Silesia Centre for Heart Diseases "Medinet" - Nowa Sól	**2013**	535	309	79	60	28	13	4
	2014	519	298	102	44	30	12	10

Source: KROK and "Kardiochirurgia Polska 2014 i 2013" report authored by B. Maruszewski, Z. Tobota, consulted by M. Zembala (www.krok.org.pl).

Table 19: Main types of procedures performed in cardiac surgery centres in Łódzkie Voivodeship (2013-2014)

Centre	Year	Cardiac surgeries in total	Coronary bypass surgeries	Acquired defects (valvular)	Combined surgeries	Thoracic aortic aneurysms	Aortic dissection type A	Infective endocarditis
Military Memorial Medical Academy – Centralny Central Veterans' Hospital in Łódź	**2013**	890	564	193	43	49	21	14
	2014	762	451	210	38	4	13	7

Source: KROK and "Kardiochirurgia Polska 2014 i 2013" report, authored by B. Maruszewski, Z. Tobota, consulted by M. Zembala (www.krok.org.pl).

Table 20: Main types of procedures performed in cardiac surgery centres in Małopolskie Voivodeship (2013-2014)

Centre	Year	Cardiac surgeries in total	Coronary bypass surgeries	Acquired defects (valvular)	Combined surgeries	Thoracic aortic aneurysms	Aortic dissection type A	Infective endocarditis
John Paul II Specialist Hospital in Kraków	**2013**	2176	1000	648	158	205	48	27
	2014	2067	911	682	157	143	45	21

Source: KROK and "Kardiochirurgia Polska 2014 i 2013" report, authored by B. Maruszewski, Z Tobota, consulted by M. Zembala (www.krok.org.pl).

Table 21: Main types of procedures performed in cardiac surgery centres in Mazowieckie Voivodeship (2013-2014)

Centre	Year	Cardiac surgeries in total	Coronary bypass surgeries	Acquired defects (valvular)	Combined surgeries	Thoracic aortic aneurysms	Aortic dissection type A	Infective endocarditis
Institute of Cardiology Department of Cardiac Surgery and Transplantology Warszawa–Anin	**2013**	1903	903	490	183	151		10
	2014	1879	803	509	177	175	8	5
Central Clinical Hospital of the Ministry of the Interior and Administration in Warsaw	**2013**	612	265	144	92	54	59	34
	2014	690	300	168	91	67	47	17
Medical University of Warsaw	**2013**	540	294	131	36	31	*6*	6
	2014	472	281	92	48	29	11	7
Military Institute of Medicine Central Clinical Hospital of the Ministry of Defence (MON)	**2013**	448	285	95	12	17	0	4
	2014	430	313	76	24	9	3	4
Allenort Hospital – Warszawa – Wilanów	**2013**	307	186	64	21	16	4	2
	2014	310	198	48	15	20	5	2
Mazovian Specialist Hospital in Radom	**2013**	205	165	23	*1*	8	6	0
	2014	173	122	28	13	4	3	0

KROK and "Kardiochirurgia Polska 2014 i 2013" report authored by B. Maruszewski, Z. Tobota, consultated by M. Zembala (www.krok.org.pl).

Table 22: Main types of procedures performed in cardiac surgery centres in Opolskie Voivodeship (2013-2014)

Centre	Year	Cardiac surgeries in total	Coronary bypass surgeries	Acquired defects (valvular)	Combined surgeries	Thoracic aortic aneurysms	Aortic dissection type A	Infective endocarditis
Independent Public Healthcare Centre Regional Medical Centre in Opole	**2013**	555	365	94	73	16	6	0
	2014	503	315	108	54	15	6	10

Source: KROK and "Kardiochirurgia Polska 2014 i 2013" report, authored by B. Maruszewski, Z. Tobota, consulted by M. Zembala (www.krok.org.pl).

Table 23: Main types of procedures performed in cardiac surgery centres in Podkarpackie Voivodeship (2013-2014)

Centre	Year	Cardiac surgeries in total	Coronary bypass surgeries	Acquired defects (valvular)	Combined surgeries	Thoracic aortic aneurysms	Aortic dissection type A	Infective endocarditis
Regional Hospital No. 2 in Rzeszów	**2013**	99 8	432	259	119	123	42	12
	2014	947	421	250	109	121	53	10

Source: KROK and "Kardiochirurgia Polska 2014 i 2013" report authored by B. Maruszewski, Z. Tobota, consulted by M. Zembala (www.krok.org.pl).

Table 24: Main types of procedures performed in cardiac surgery centres in Podlaskie Voivodeship (2013-2014)

Centre	Year	Cardiac surgeries in total	Coronary bypass surgeries	Acquired defects (valvular)	Combined surgeries	Thoracic aortic aneurysms	Aortic dissection type A	Infective endocarditis
Medical University of Bialystok Clinical Hospital	**2013**	617	299	129	78	92	18	3
	2014	607	268	135	58	110	27	7

Source: KROK and "Kardiochirurgia Polska 2014 i 2013" report authored by B. Maruszewski, Z. Tobota, consulted by M. Zembala (www.krok.org.pl).

Table 25: Main types of procedures performed in cardiac surgery centres in Pomorskie Voivodeship (2013-2014)

Centre	Year	Cardiac surgeries in total	Coronary bypass surgeries	Acquired defects (valvular)	Combined surgeries	Thoracic aortic aneurysms	Aortic dissection type A	Infective endocarditis
Medical University in Gdańsk	**2013**	1493	551	297	144	72	No data available	3
	2014	1387	466	379	132	46	20	0
Swissmed Vascular Gdańsk	**2013**	268	265	0	3	0	0	0
	2014	569	460	45	37	6	6	2

Source: KROK and "Kardiochirurgia Polska 2014 i 2013" report authored by B. Maruszewski, Z Tobota, consulted by M. Zembala (www.krok.org.pl).

Table 26: Main types of procedures performed in cardiac surgery centres in Śląskie Voivodeship (2013-2014)

Centre	Year	Cardiac surgeries in total	Coronary bypass surgeries	Acquired defects (valvular)	Combined surgeries	Thoracic aortic aneurysms	Aortic dissection type A	Infective endocarditis
Silesian Centre of Heart Diseases in Zabrze	**2013**	2207	1126	428	171	114	60	23
	2014	2207	1164	416	159	125	75	12
Upper-Silesian Medical Centre Hospital in Ochojec	**2013**	2434	1358	601	328	71	56	30
	2014	2150	1214	485	290	83	56	17
American Heart of Poland in Bielsko Biała	**2013**	1058	704	154	120	32	7	6
	2014	1089	619	215	126	52	48	4
Emomedic – Katowice	**2013**	67	63	4	0	0	0	0
	2014	Centre closed	Centre closed	Centre closed	Centre closed	Centre closed	Centre closed	Centre closed

Source: KROK and "Kardiochirurgia Polska 2014 i 2013" report authored by B. Maruszewski, Z. Tobota, consulted by M. Zembala (www.krok.org.pl).

Table 27: Main types of procedures performed in cardiac surgery centres in Świętokrzyskie Voivodeship (2013-2014)

Centre	Year	Cardiac surgeries in total	Coronary bypass surgeries	Acquired defects (valvular)	Combined surgeries	Thoracic aortic aneurysms	Aortic dissection type A	Infective endocarditis
Regional Polyclinical Hospital in Kielce	**2013**	533	385	71	27	41	15	0
	2014	519	385	65	31	27	15	1

Source: KROK and "Kardiochirurgia Polska 2014 i 2013" report authored by B. Maruszewski, Z. Tobota, consultated by M. Zembala (www.krok.org.pl).

Table 28: Main types of procedures performed in cardiac surgery centres in the Warmińsko-Mazurskie Voivodeship (2013-2014)

Centre	Year	Cardiac surgeries in total	Coronary bypass surgeries	Acquired defects (valvular)	Combined surgeries	Thoracic aortic aneurysms	Aortic dissection type A	Infective endocarditis
Regional Specialist Hospital in Olsztyn	**2013**	402	284	71	2	27	14	8
	2014	442	285	73	26	33	20	3

Source: KROK and "Kardiochirurgia Polska 2014 i 2013" report authored by B. Maruszewski, Z. Tobota, consulted by M. Zembala (www.krok.org.pl).

Table 29: Main types of procedures performed in cardiac surgery centres in Wielkopolskie Voivodeship (2013-2014)

Centre	Year	Cardiac surgeries in total	Coronary bypass surgeries	Acquired defects (valvular)	Combined surgeries	Thoracic aortic aneurysms	Aortic dissection type A	Infective endocarditis
Józef Struś Multidisciplinary Municipal Hospital in Poznań	**2013**	734	525	91	73	19	17	8
	2014	762	544	*99*	68	22	17	3
Karol Marcinkowski Medical University in Poznań	**2013**	711	296	189	97	53	28	13
	2014	668	311	148	69	61	27	2

Source: KROK and "Kardiochirurgia Polska 2013 i 2014" report authored by B. Maruszewski, Z. Tobota, consulted by M. Zembala (www.krok.org.pl).

Table 30: Main types of procedures performed in cardiac surgery centres in Zachodniopomorskie Voivodeship (2013-2014)

Centre	Year	Cardiac surgeries in total	Coronary bypass surgeries	Acquired defects (valvular)	Combined surgeries	Thoracic aortic aneurysms	Aortic dissection type A	Infective endocarditis
Pomeranian Medical University in Szczecin	**2013**	1076	646	137	176	86	19	8
	2014	1154	700	165	163	89	19	16

Source: KROK and "Kardiochirurgia Polska 2013 i 2014" report authored by B. Maruszewski, Z. Tobota, consulted by M. Zembala (www.krok.org.pl).

2.1.5 Paediatric Cardiac Surgery

Table 31: Hospitals performing cardiac surgeries in patients aged below 18 (2013)

item	Name	City/town	Newborns (1-30 days)	Infants (30-365 days)	1-18 y.o.	Patients 0-18 y.o.
1	Children's Memorial Health Institute	Warsaw	95	139	180	**414**
2	Polish Mother's Memorial Hospital Research Institute	Łódź	87	173	137	**397**
3	Pomeranian Traumatology Centre Regional Specialist Hospital	Gdańsk	84	139	146	**369**
4	University Children's Hospital	Kraków	97	139	131	**367**
5	K. Marcinkowski K. Medical Academy	Poznań	49	100	116	**265**
6	Upper Silesian Child Health Centre	Katowice	55	87	58	**201**
7	Non-Public Healthcare Centre Lower Silesia Centre for	Wrocław	20	84	48	**152**
8	Silesian Center for Heart Diseases	Zabrze	12	65	66	**143**
9	Independent Public Paediatric Clinical Hospital	Warsaw	24	83	30	**137**

Source: KROK and "Kardiochirurgia Polska 2013" report, authored by B. Maruszewski, Z Tobota, consulted by M. Zembala (www.krok.org.pl).

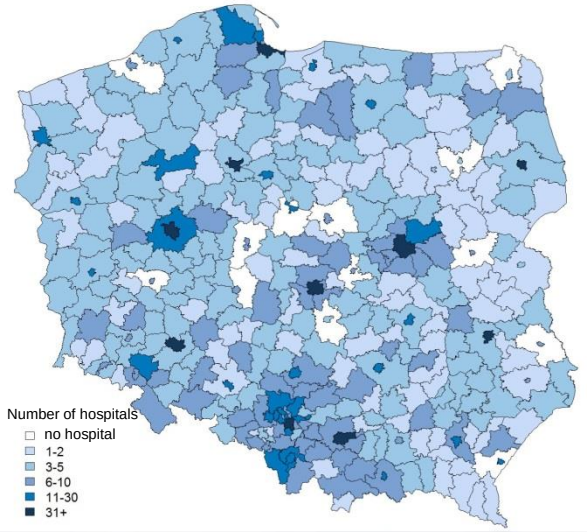
Figure 85: Hospitals providing cardiosurgical services to patients aged below 18

Source: KROK and"Kardiochirurgia Polska 2013" report, authored by B. Maruszewski, Z Tobota, consulted by M. Zembala (www.krok.org.pl).

2.2 Specialist Outpatient Care

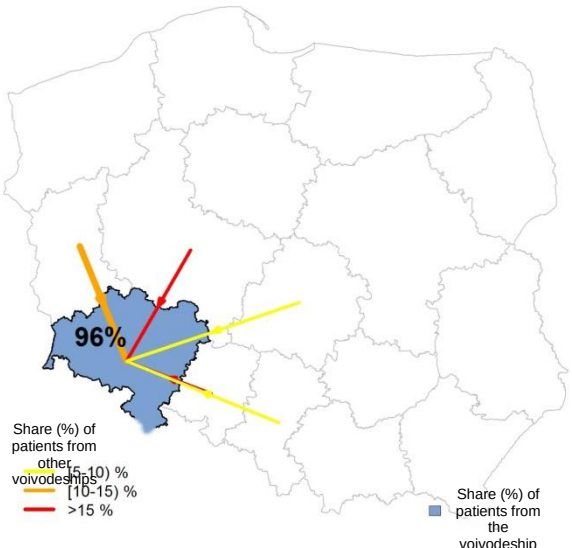
Healthcare providers in Poland

Figure 86: Counties with specialist outpatient care facilities treating cardiac patients in Poland (2013)



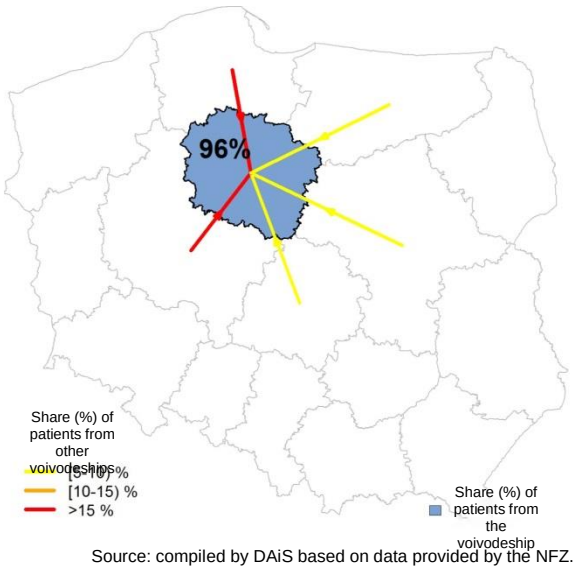
Source: compiled by DAiS based on data provided by the NFZ.

Figure 87: Migrations of patients receiving cardiological services within AOS into Dolnośląskie Voivodeship (2013)



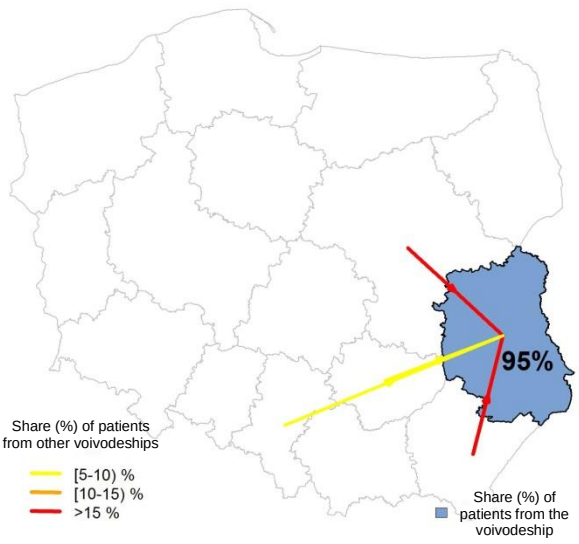
Source: compiled by DAiS based on data provided by the NFZ.

Figure 88: Migrations of patients receiving cardiological services within AOS into Kujawsko-Pomorskie Voivodeship (2013)



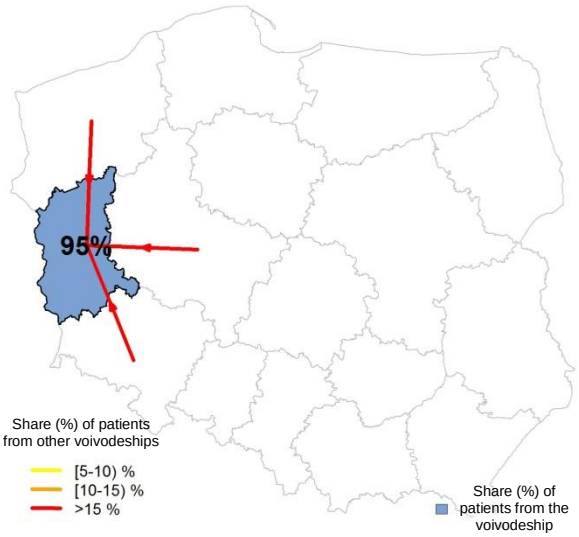
Source: compiled by DAiS based on data provided by the NFZ.

Figure 89: Migrations of patients receiving cardiological services within AOS into Lubelskie Voivodeship (2013)



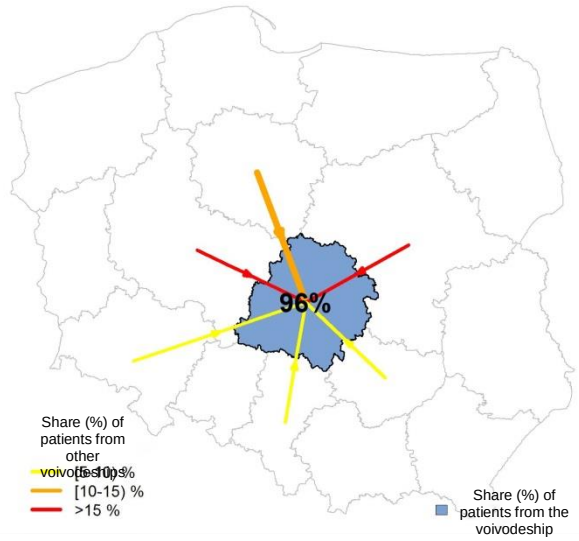
Source: compiled by DAiS based on data provided by the NFZ.

Figure 90: Migrations of patients receiving cardiological services within AOS into Lubuskie Voivodeship (2013)



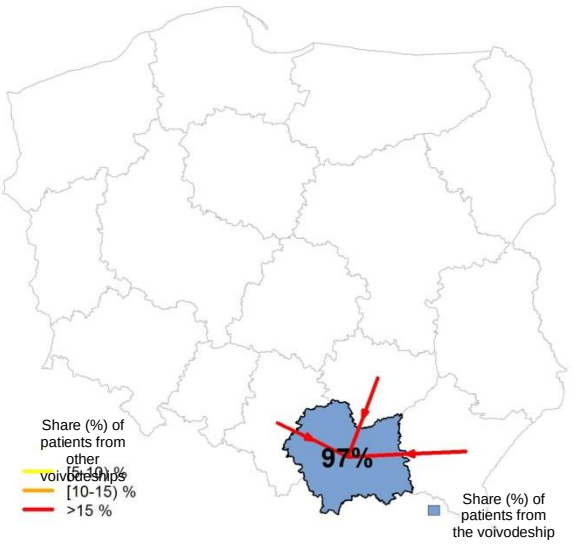
Source: compiled by DAiS based on data provided by the NFZ.

Figure 91: Migrations of patients receiving cardiological services within AOS into Łódzkie Voivodeship (2013)



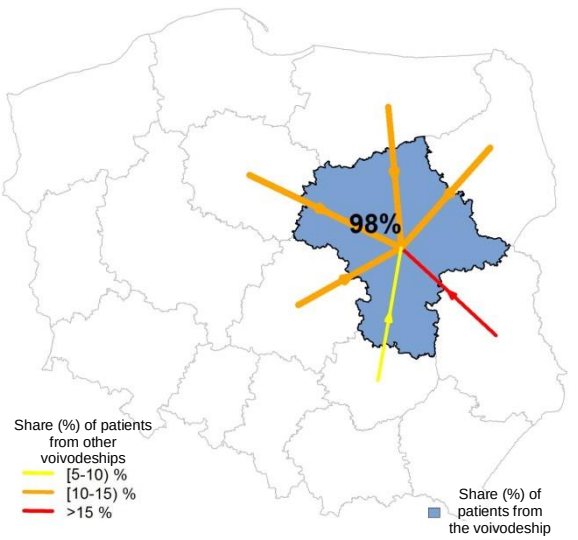
Source: compiled by DAiS based on data provided by the NFZ.

Figure 92: Migrations of patients receiving cardiological services within AOS into Małopolskie Voivodeship (2013)



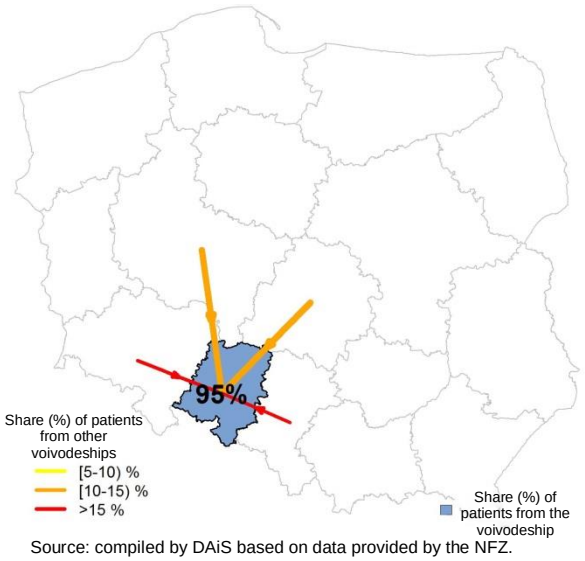
Source: compiled by DAiS based on data provided by the NFZ.

Figure 93: Migrations of patients receiving cardiological services within AOS into Mazowieckie Voivodeship (2013)



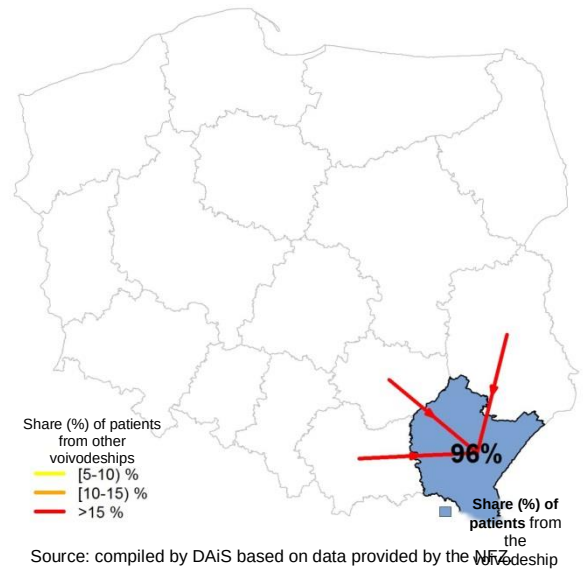
Source: compiled by DAiS based on data provided by the NFZ.

Figure 94: Migrations of patients receiving cardiological services within AOS into Opolskie Voivodeship (2013)



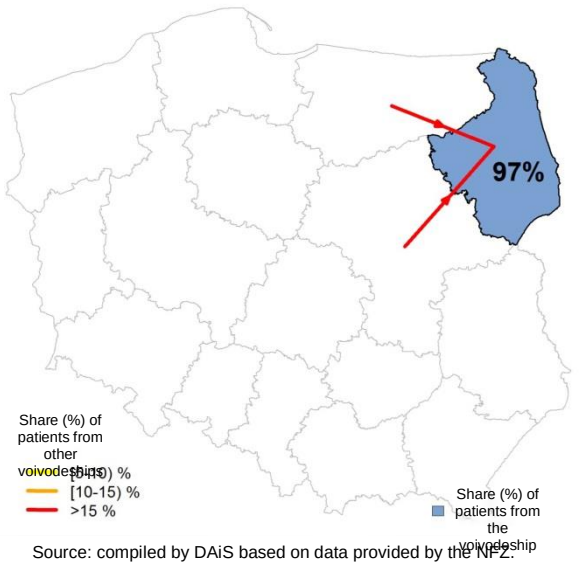
Source: compiled by DAiS based on data provided by the NFZ.

Figure 95: Migrations of patients receiving cardiological services within AOS into Podkarpackie Voivodeship (2013)



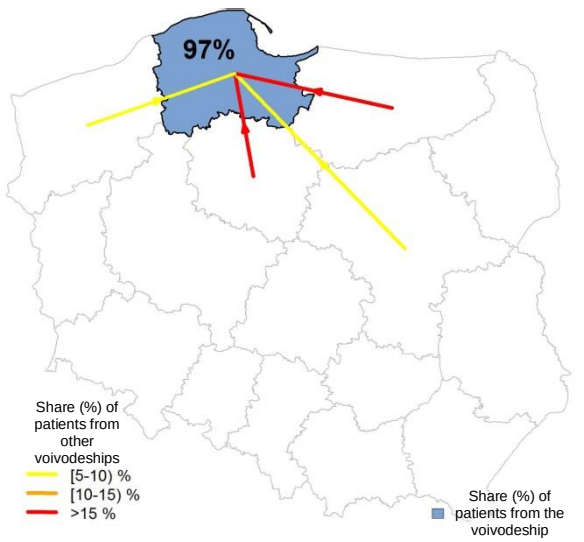
Source: compiled by DAiS based on data provided by the NFZ.

Figure 96: Migrations of patients receiving cardiological services within AOS into Podlaskie Voivodeship (2013)



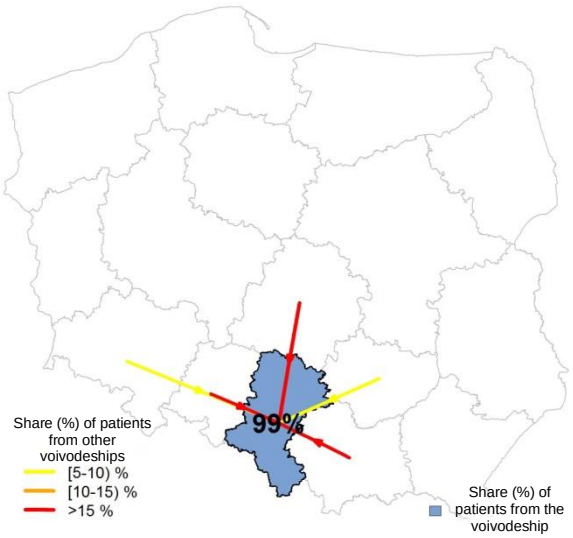
Source: compiled by DAiS based on data provided by the NFZ.

Figure 97: Migrations of patients receiving cardiological services within AOS into Pomorskie Voivodeship (2013)



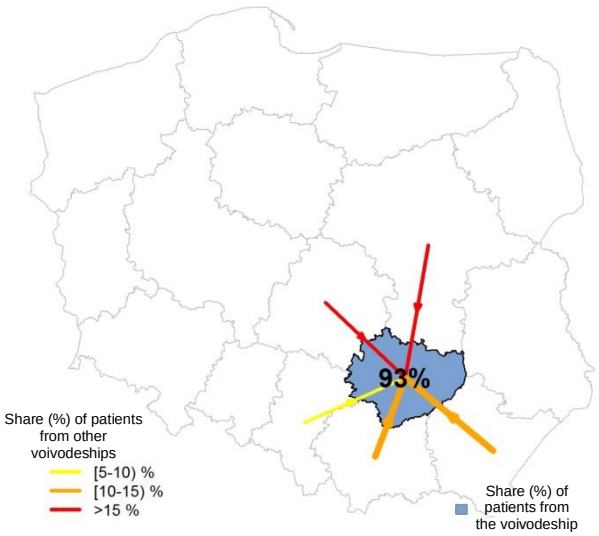
Source: compiled by DAiS based on data provided by the NFZ.

Figure 98: Migrations of patients receiving cardiological services within AOS into Śląskie Voivodeship (2013)



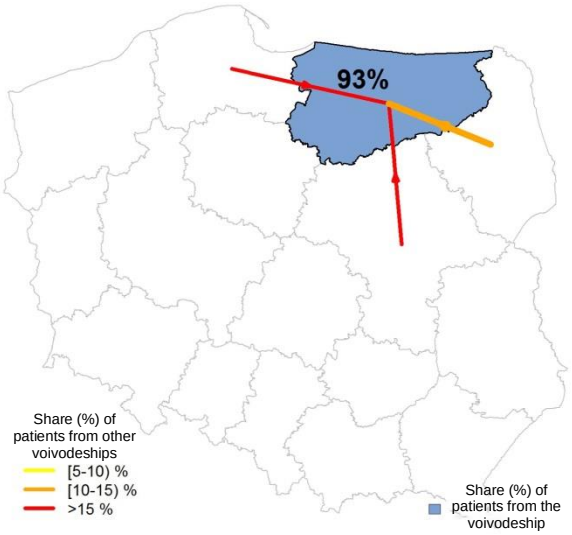
Source: compiled by DAiS based on data provided by the NFZ.

Figure 99: Migrations of patients receiving cardiological services within AOS into Świętokrzyskie Voivodeship (2013)



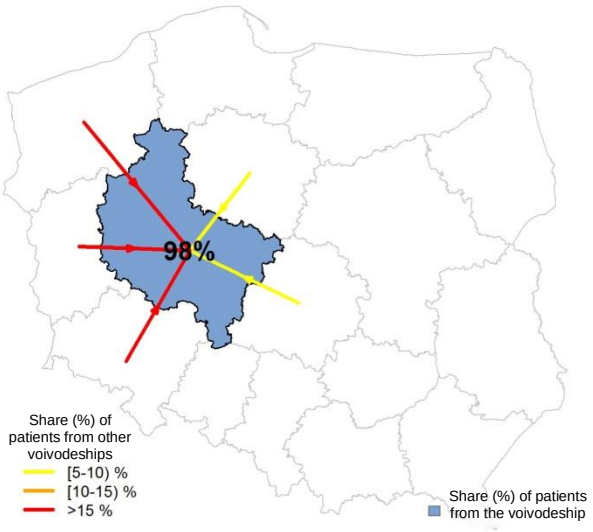
Source: compiled by DAiS based on data provided by the NFZ.

Figure 100: Migrations of patients receiving cardiological services within AOS into Warmińsko-Mazurskie Voivodeship (2013)



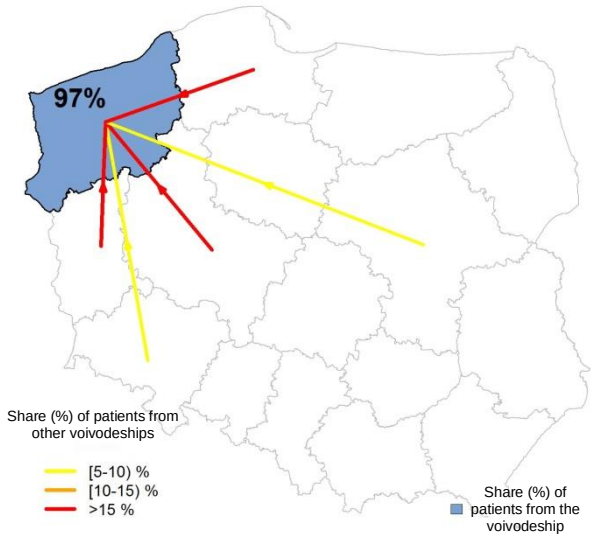
Source: compiled by DAiS based on data provided by the NFZ.

Figure 101: Migrations of patients receiving cardiological services within AOS into Wielkopolskie Voivodeship (2013)



Source: compiled by DAiS based on data provided by the NFZ.

Figure 102: Migrations of patients receiving cardiological services within AOS into Zachodniopomorskie Voivodeship (2013)

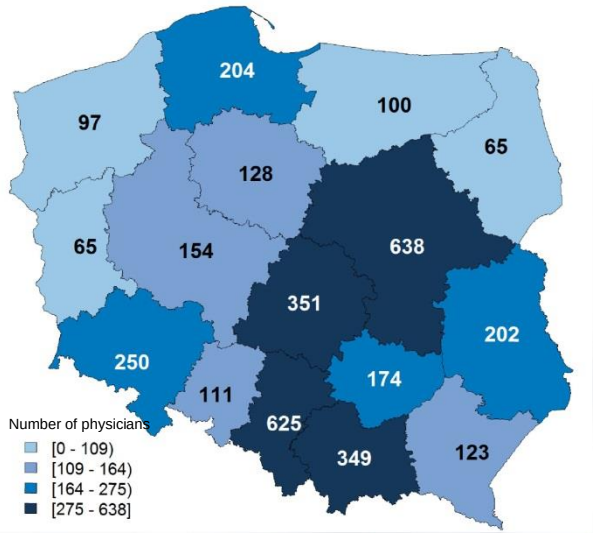


Source: compiled by DAiS based on data provided by the NFZ.

2.3 Medical Staff[1]

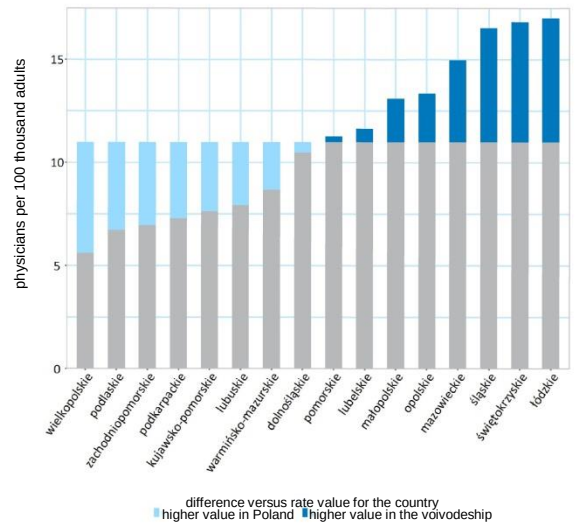
Cardiologists

Figure 103: Number of cardiologists in individual voivodeships in 2013



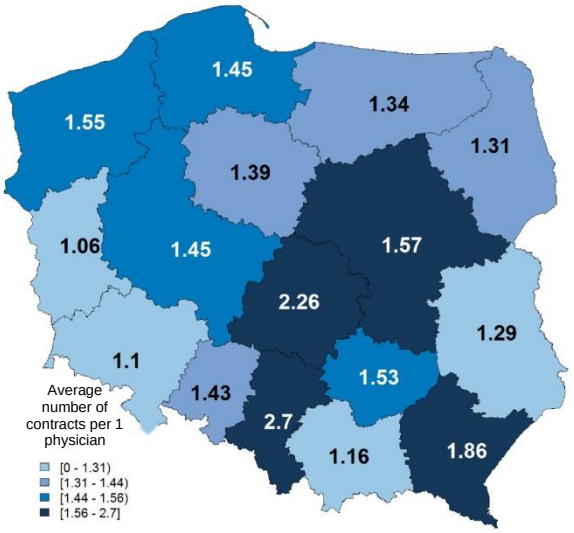
Source: compiled by DAiS based on data provided by the NIL

Figure 104: Number of cardiologists per 100,000 adults in individual voivodeships in 2013



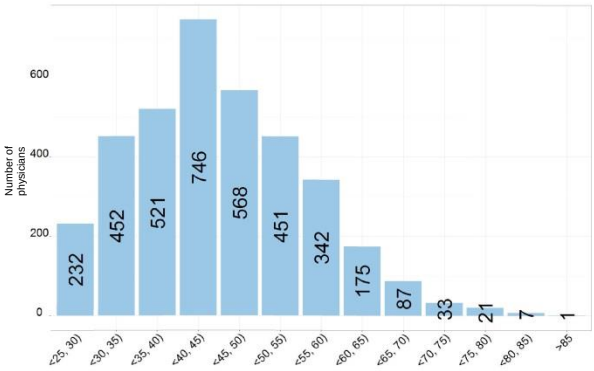
Source: compiled by DAiS based on data provided by the NIL and GUS

Figure 105: Number of contracts with healthcare providers contracted with the public payer per one physician in individual voivodeships in 2013



Source: compiled by DAiS based on data provided by the NIL and the NFZ

Figure 106: Age structure of cardiologists in Poland in 2013

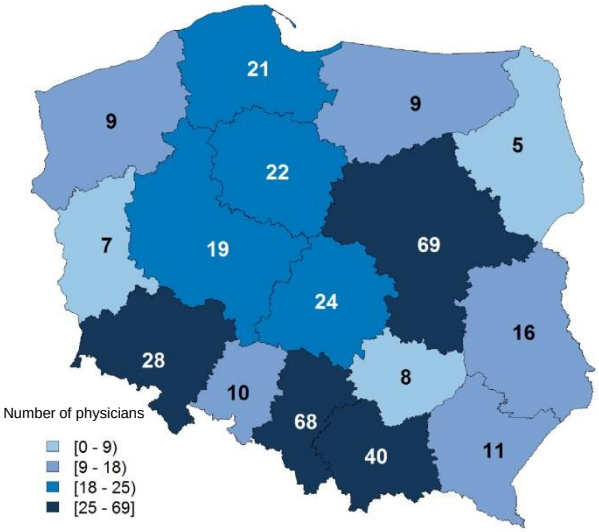


Source: compiled by DAiS based on data provided by the NIL

[1] The Ministry of Health directs special acknowledgements to the NIL for sharing data on the medical staff, which were used to prepare the analyses contained in this chapter.

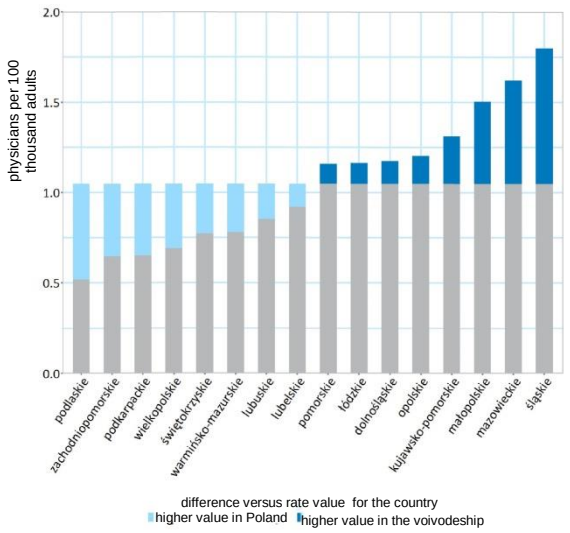
Cardiac Surgeons

Figure 107: Number of cardiac surgeons in individual voivodeships in 2013



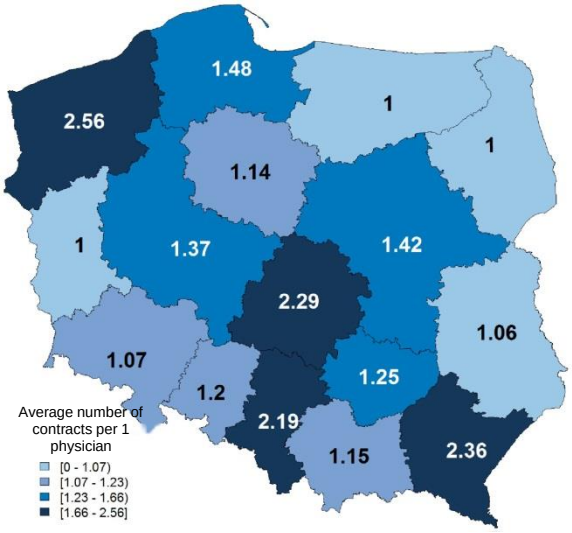
Source: compiled by DAiS based on data provided by the NIl

Figure 108: Number of cardiac surgeons per 100,000 adults in individual voivodeships in 2013



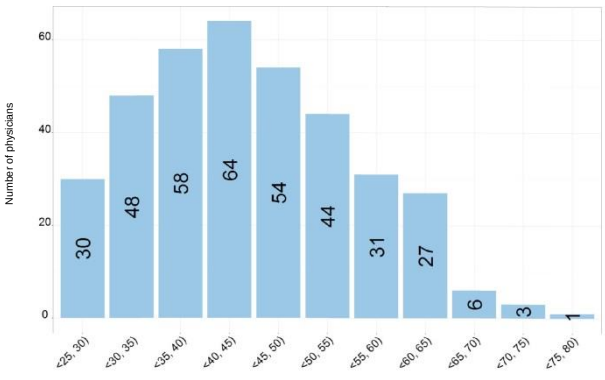
Source: compiled by DAiS based on data provided by the NIL and GUS

Figure 109: Number of contracts with healthcare providers contracted with the public payer per one physician in individual voivodeships in 2013



Source: compiled by DAiS based on data provided by the NIL and the NFZ

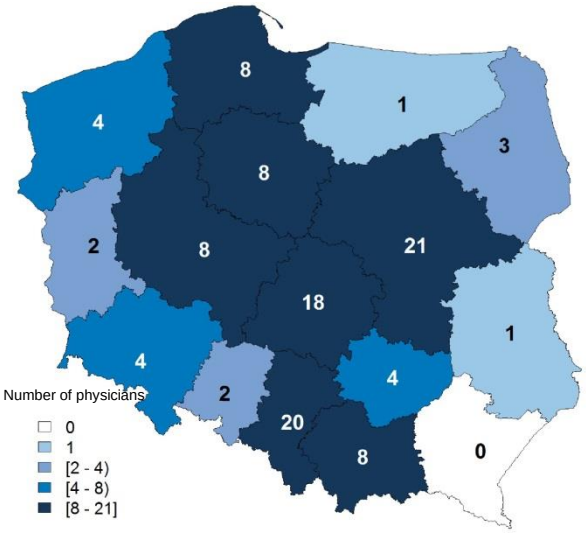
Figure 110: Age structure of cardiac surgeons in Poland in 2013



Source: compiled by DAiS based on data provided by the NIL

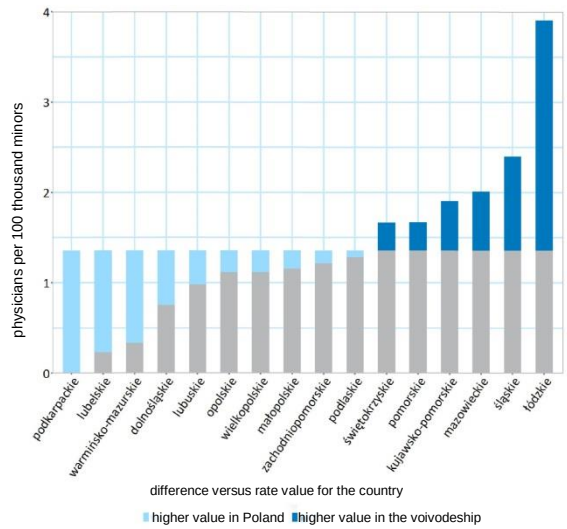
Paediatric Cardiologists

Figure 111: Number of paediatric cardiologists in individual voivodeships in 2013



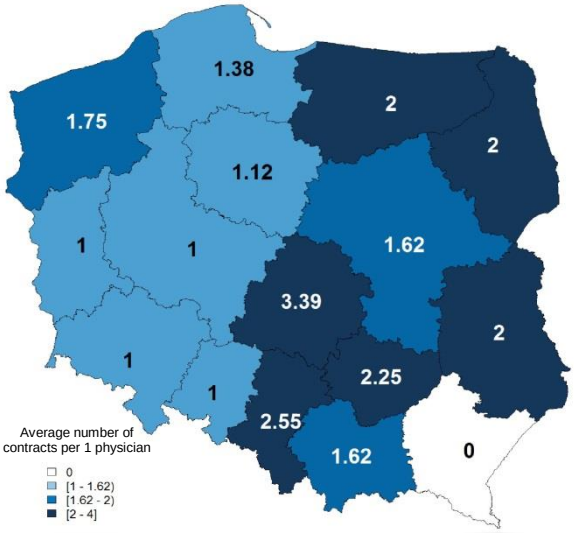
Source: compiled by DAiS based on data provided by the NIL

Figure 112: Number of paediatric cardiologists per 100,000 minors in individual voivodeships in 2013



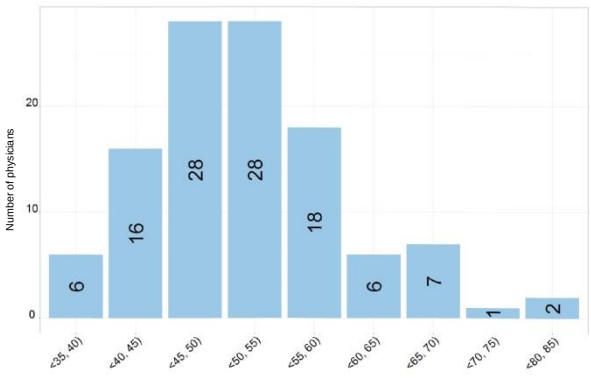
Source: compiled by DAiS based on data provided by the NIL and GUS

Figure 113: Number of contracts with healthcare providers contracted with the public payer per one physician in individual voivodeships in 2013



Source: compiled by DAiS based on data provided by the NIL and the NFZ

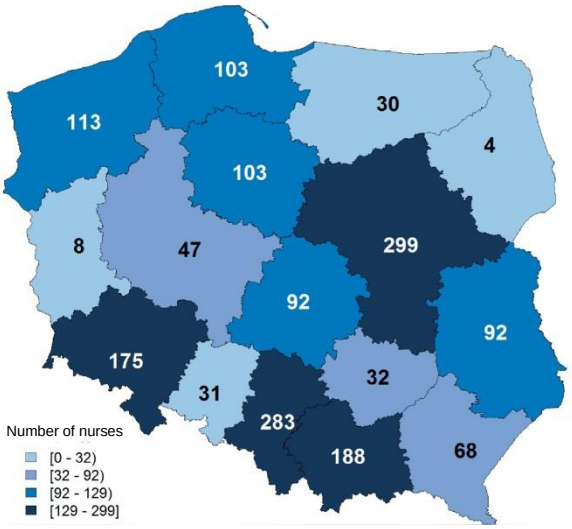
Figure 114: Age structure of paediatric cardiologists in Poland in 2013



Source: compiled by DAiS based on data provided by the NIL

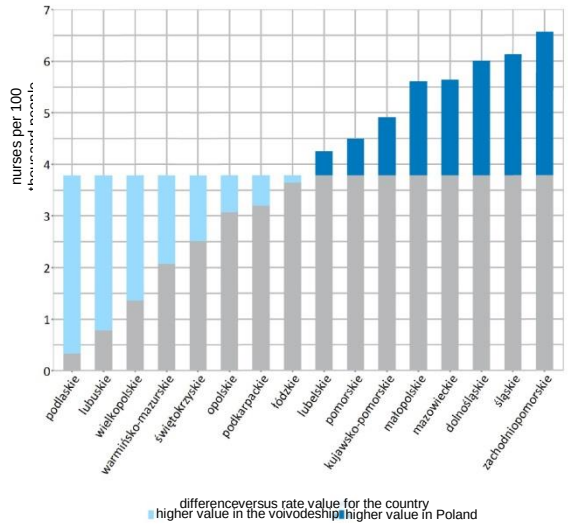
Cardiac Nurses

Figure 115: Number of nurses with the specialist title in cardiology nursing in individual voivodeships in 2015



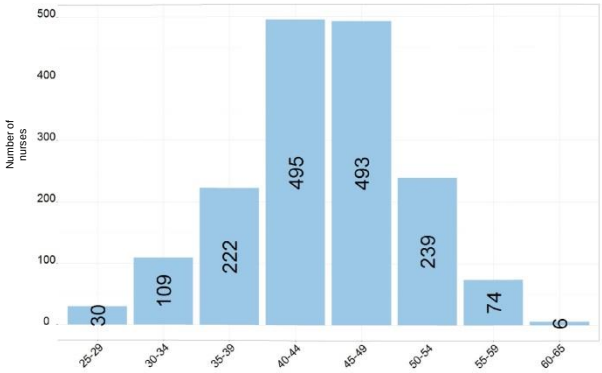
Source: compiled by DAiS based on data provided by the Central Register of Nurses and Midwives and GUS

Figure 116: Number of nurses with the specialist title in cardiology nursing per 100 thousand people in individual voivodeships in 2015



Source: compiled by DAiS based on data provided by the Central Register of Nurses and Midwives (CRPiP)

Figure 117: Age structure of nurses with the specialist title in cardiology nursing in Poland in 2015



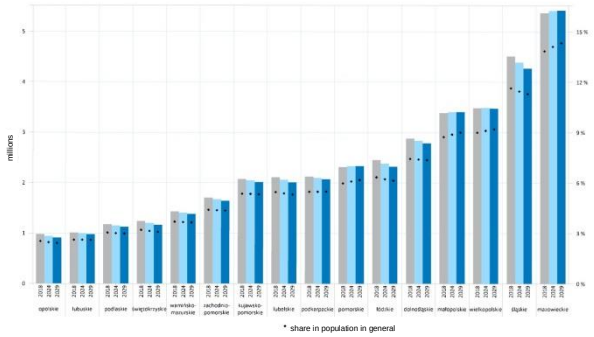
Source: compiled by DAiS based on data provided by the Center of Postgraduate Education for of Nurses and Midwives

Attachments to Part II

Healthcare Needs Forecasts

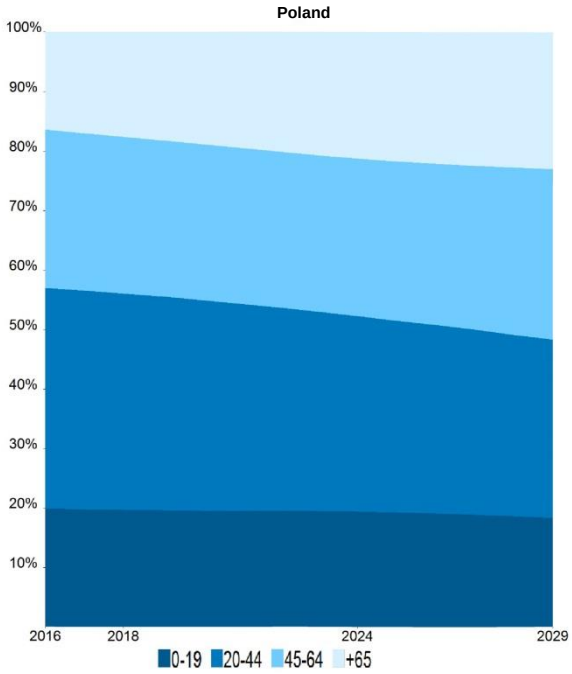
3.1 Projected Population Breakdown

Figure 118: Population in voivodeships in selected years of the prognosis (in 2018, 2024 and 2029)



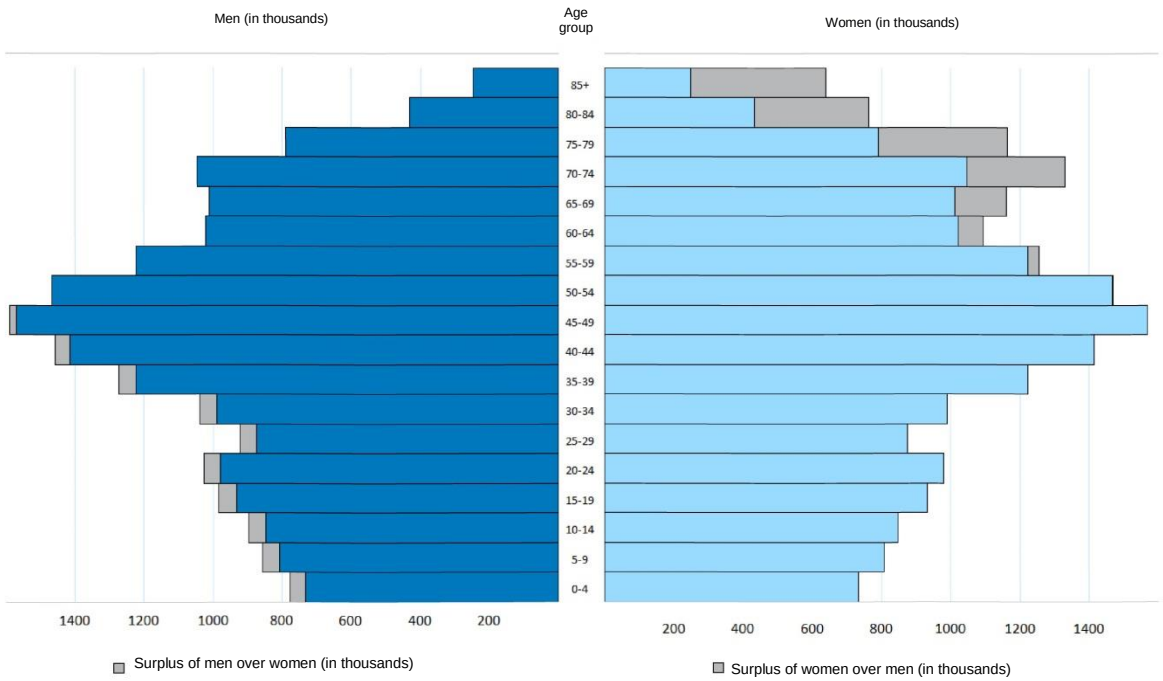
Source: compiled based on data provided by the GUS

Figure 119: Projected population breakdown by basic age groups in Poland and Pomorskie Voivodeship in years 2016-2029



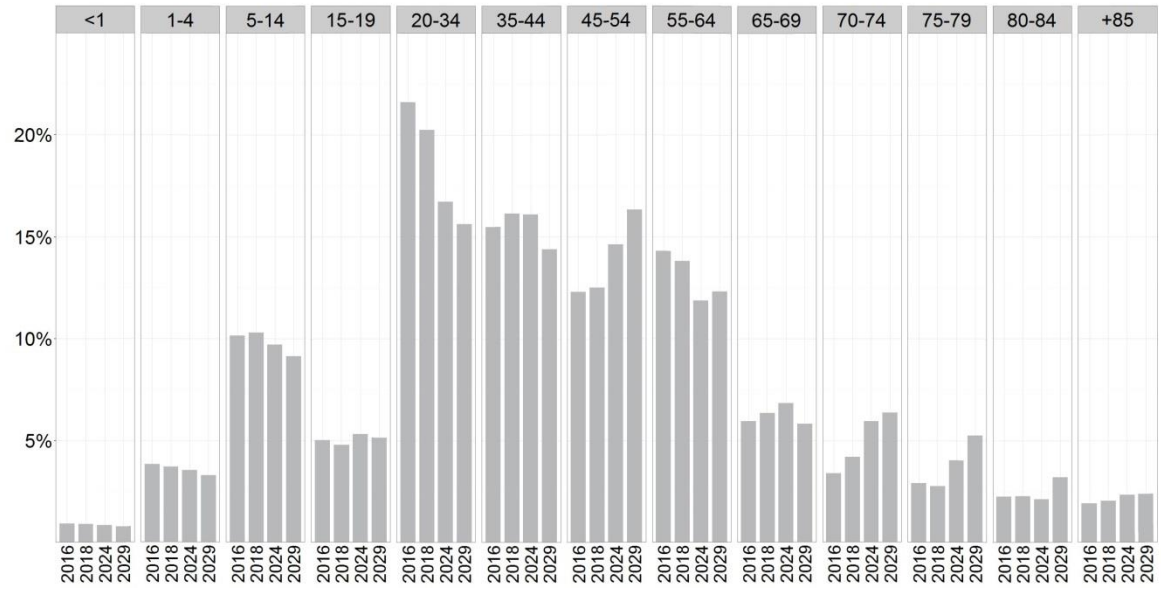
Source: compiled based on data provided by the GUS

Figure 120: Population breakdown according to sex and age in Poland (2029)



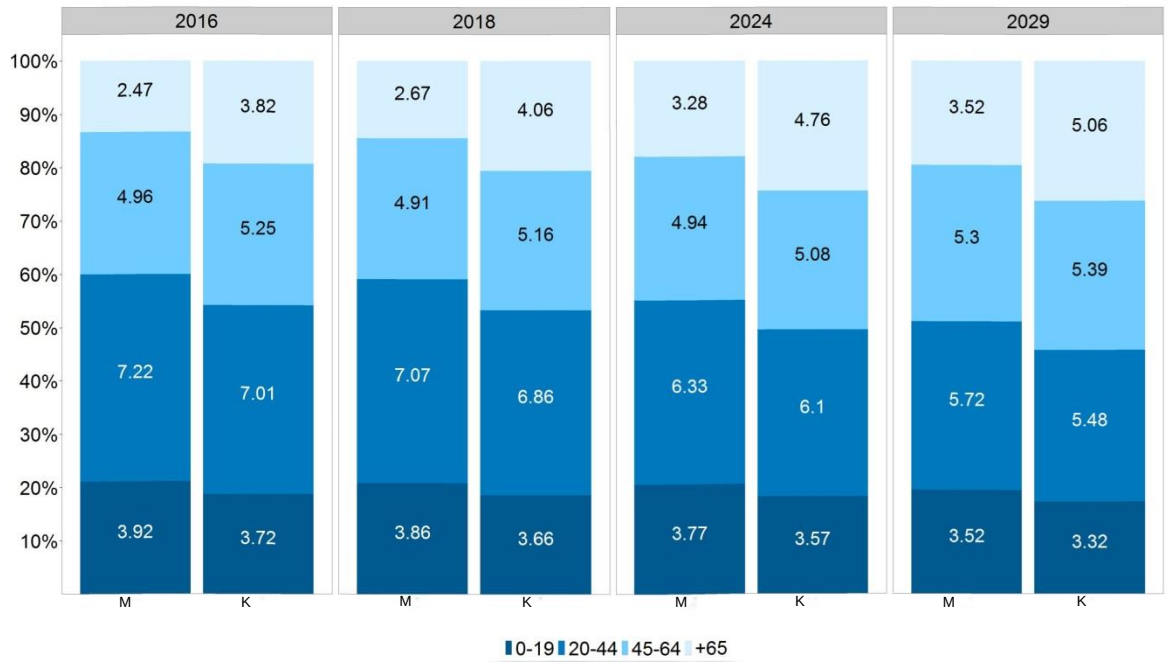
Source: compiled based on data provided by the GUS

Figure 121: Projected population breakdown by basic age groups in selected years of the prognosis (in 2016, 2018, 2024, and 2029)



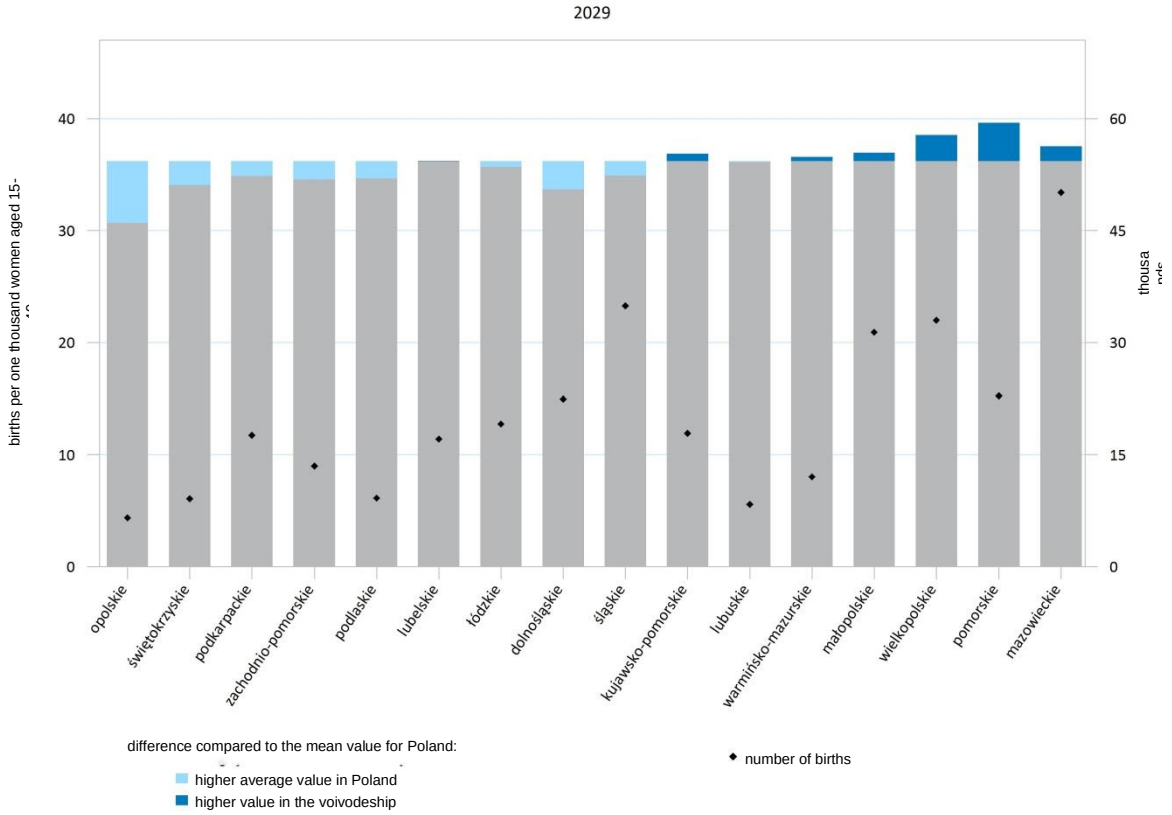
Source: compiled based on data provided by the GUS

Figure 122: Projected population breakdown by sex and basic age groups in Poland (share and number of people in millions) in selected years of the prognosis (in 2016, 2018, 2024, and 2029)



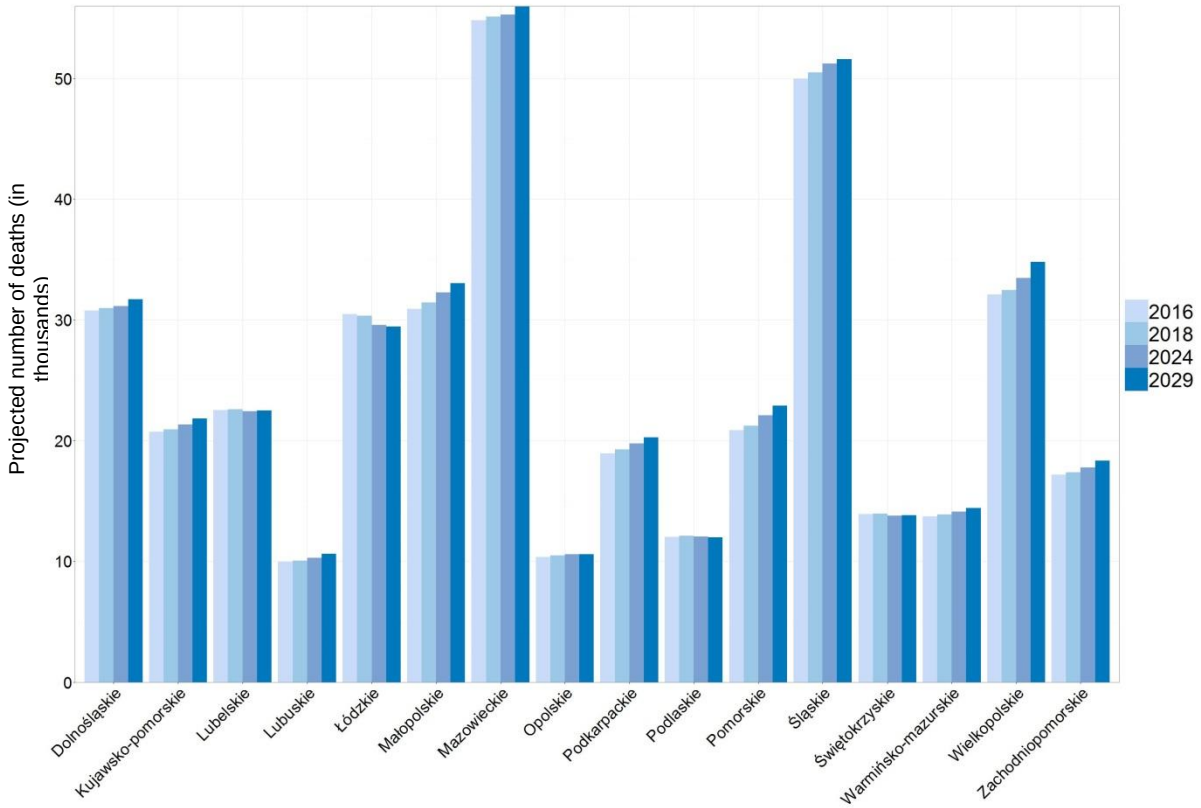
Source: compiled based on data provided by the GUS

Figure 123: Projected fertility rate and live births in Polish voivodeships in 2029



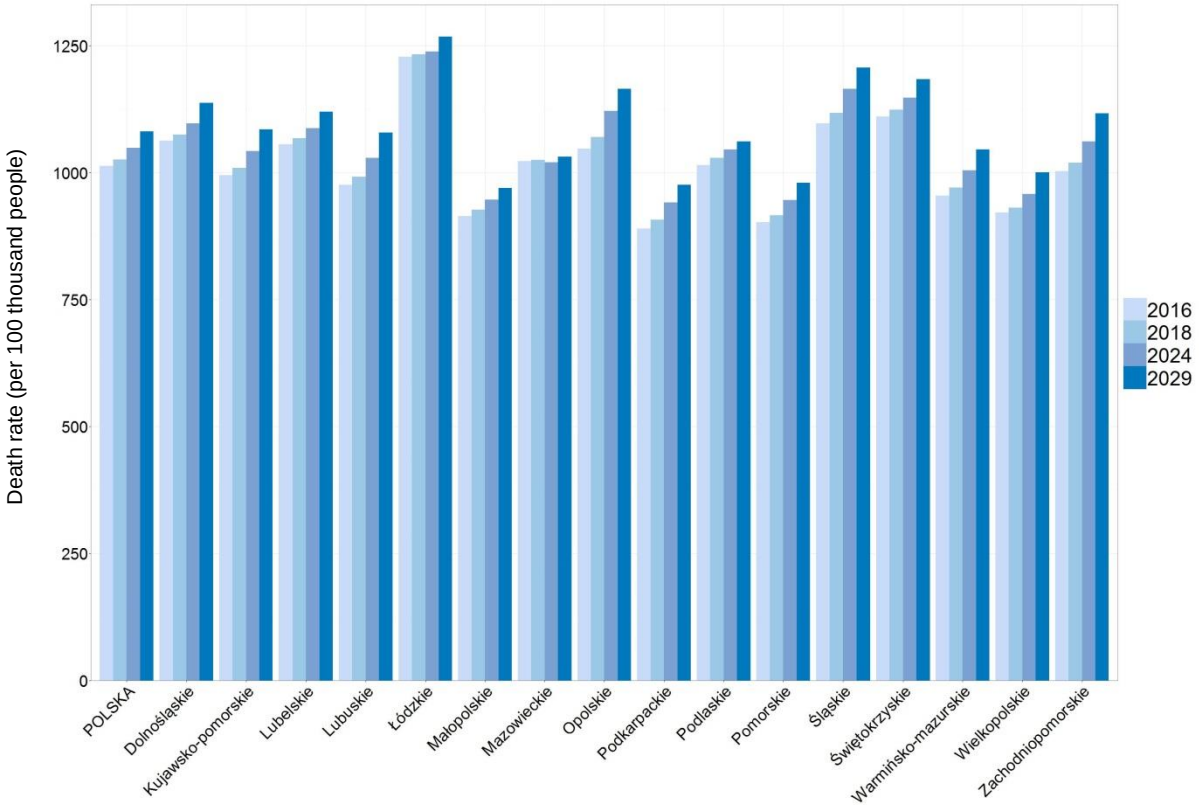
Source: compiled based on data provided by the GUS

Figure 124: Projected number of deaths (in thousands) by voivodeships in selected years of prognosis (2016, 2018, 2024 and 2029)



Source: compiled based on data provided by the GUS

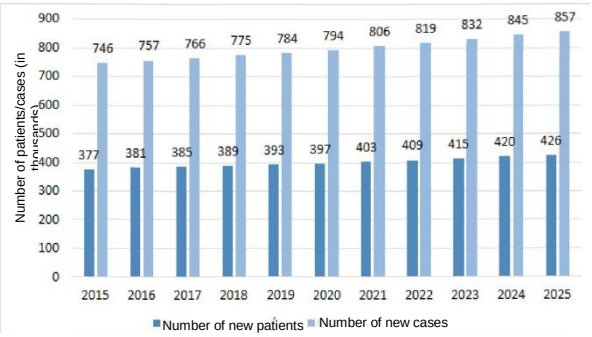
Figure 125: Projected death rates (per 100 thousand people) by voivodeships in selected years of prognosis (2016, 2018, 2024 and 2029)



Source: compiled based on data provided by the GUS

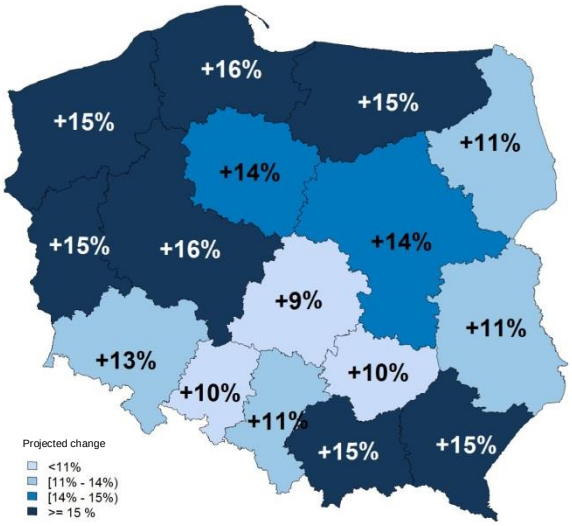
3.2 Incidence Forecast for the years 2015-2025

Figure 126: Projected total number of new cardiac cases in 2015-2025



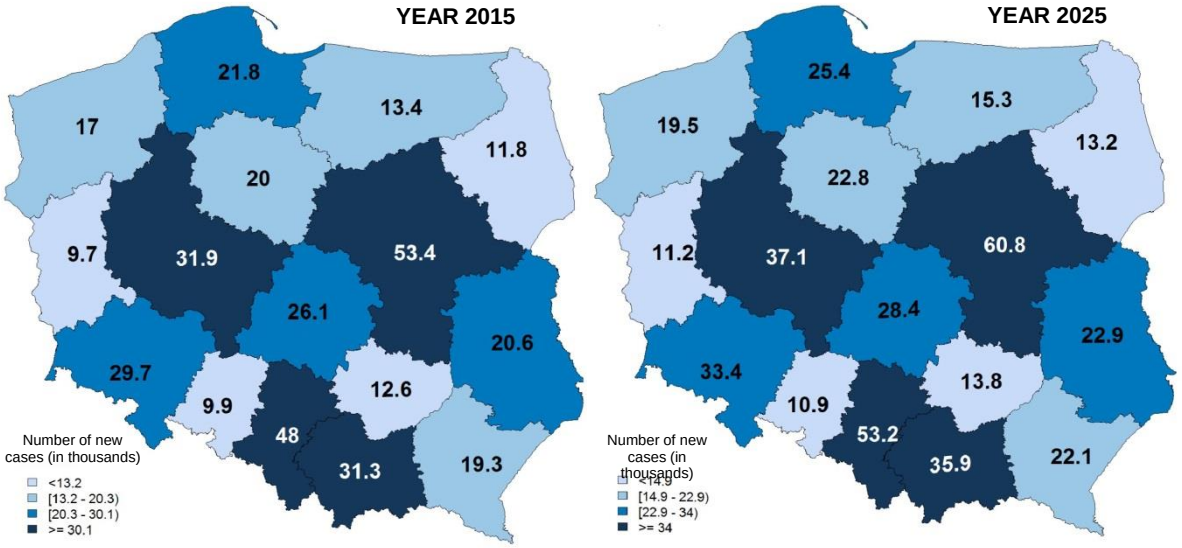
Source: compiled based on data provided by the NFZ.

Figure 127: Increase (%) in the total number of new cardiac cases in 2015-2025



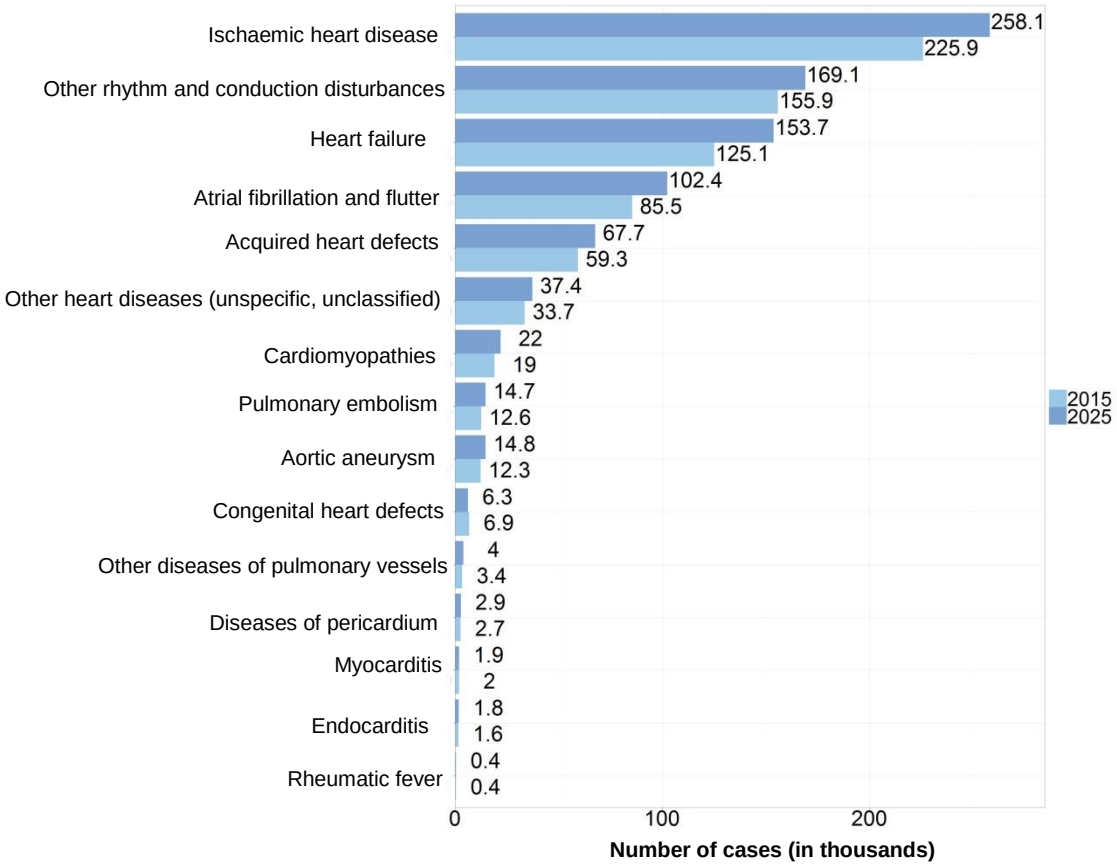
Source: compiled based on data provided by the NFZ.

Figure 128: Projected cardiac diseases incidence by voivodeships in years 2015 and 2025



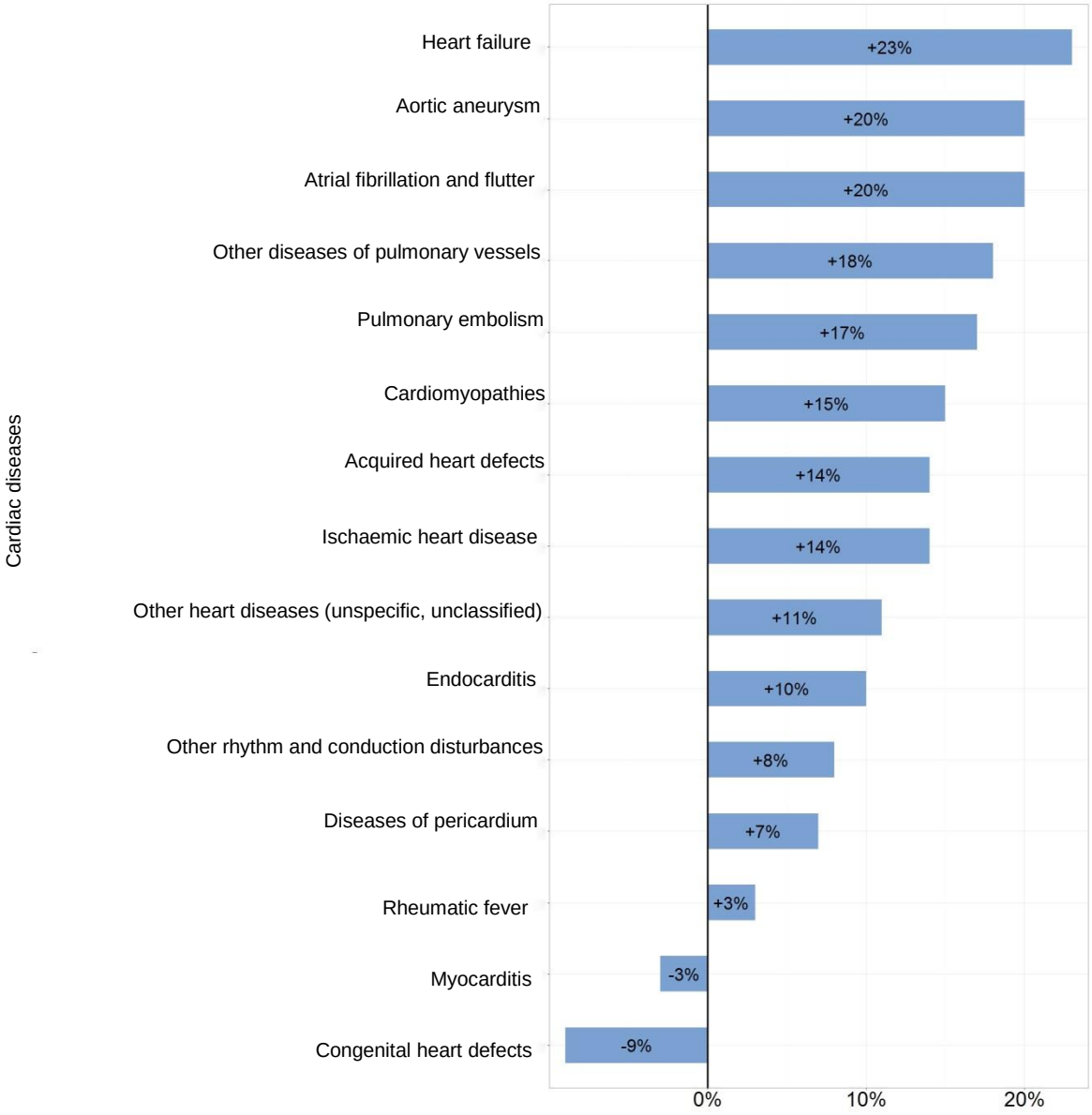
Source: compiled based on data provided by the NFZ.

Figure 129: Projected number of new cardiac cases per disease



Source: compiled based on data provided by the NFZ

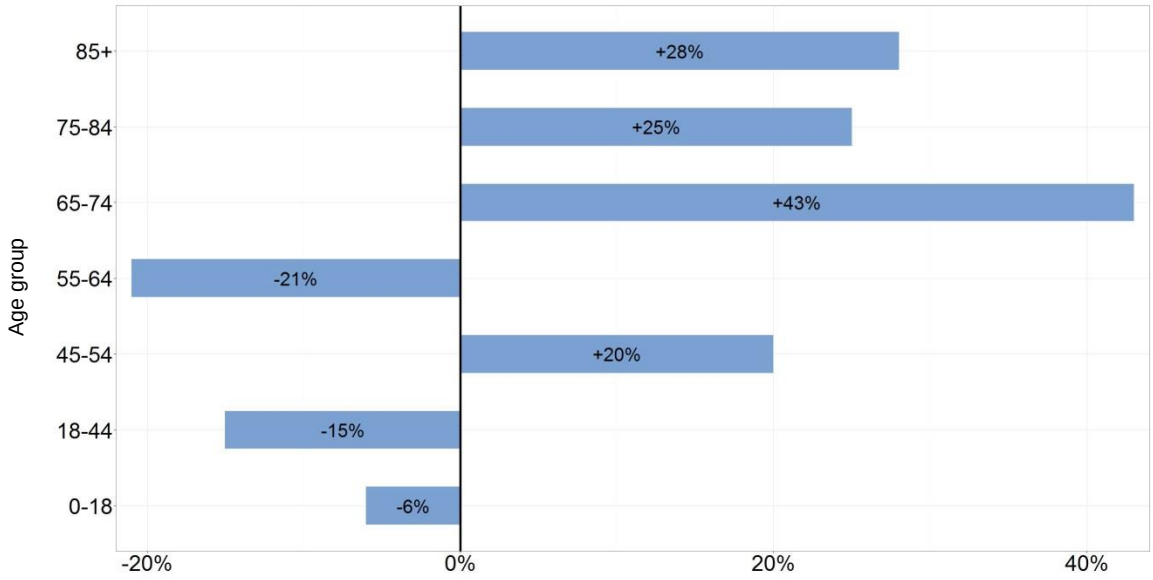
Figure 130: Changes in cardiac diseases incidence between 2015 and 2025



An increase in the number of new cases between 2015 and 2025

Source: compiled based on data provided by the NFZ.

Figure 131: Changes in patients' age structure between 2015 and 2025



An increase in the number of new cases between 2015 and 2025

Source: compiled based on data provided by the NFZ.

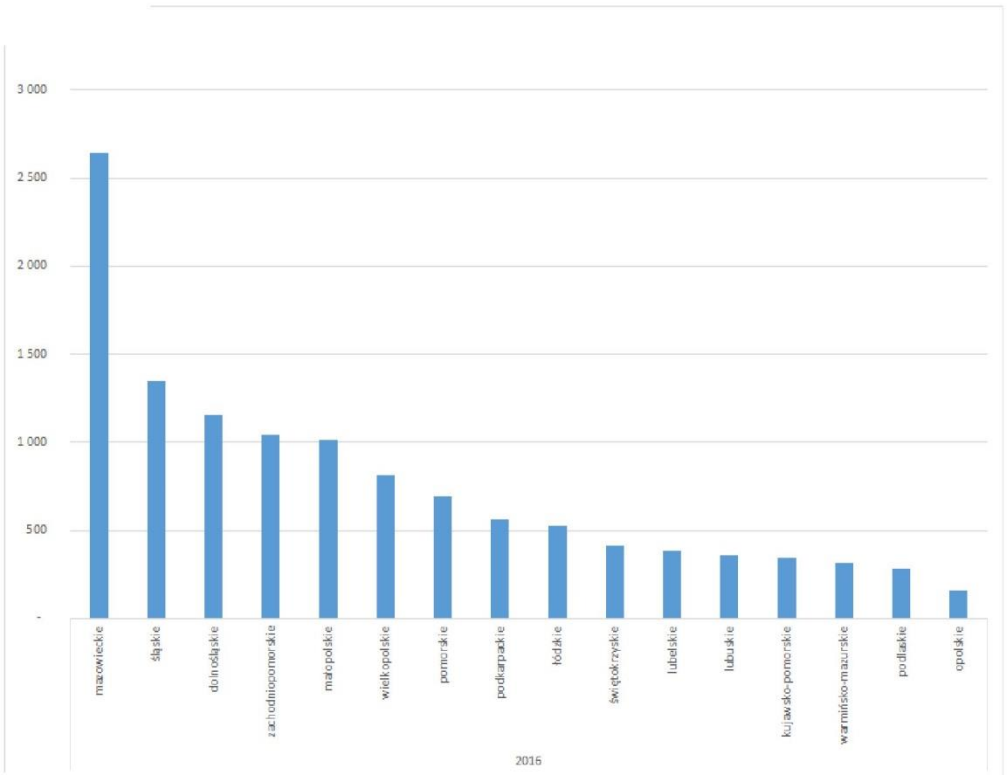
Cardiac Treatment Forecast

Table 32: Projected demand for procedures in cadiological treatment in Poland (2016 and 2029)

Poland	Projected procedures (in thousands)							
	PCI	implantation/exchange			ablation	EPS	Valve surgery	CABG
Projected year		ICD	CRT	of a				
2016	132.20	3.37	3.52	32.24	12.04	3.13	3.35	13.63
2018	136.09	3.61	3.64	33.36	12.13	3.21	9.14	19.33
2024	148.77	9.35	4.02	33.64	12.39	3.33	9.93	21.07
2029	159.22	9.33	4.30	43.65	12.46	3.36	10.55	22.19

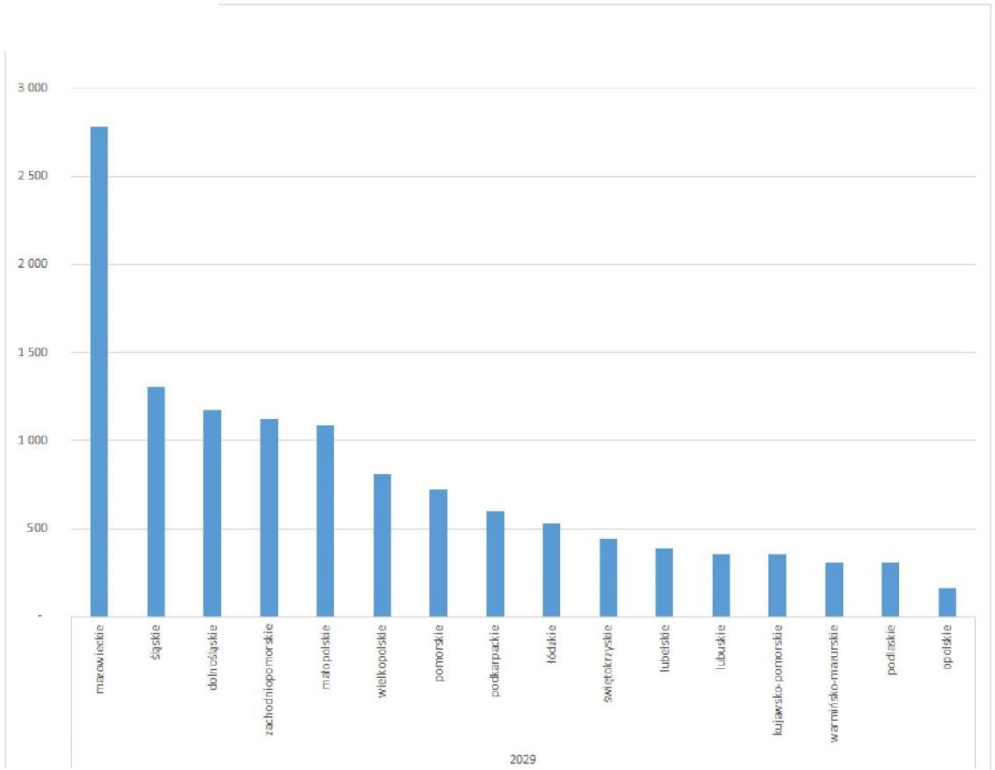
Source: compiled by DAiS based on data provided by the NFZ.

Figure 132: Projected demand for ablations in cardiological treatment per voivodeship (2029)



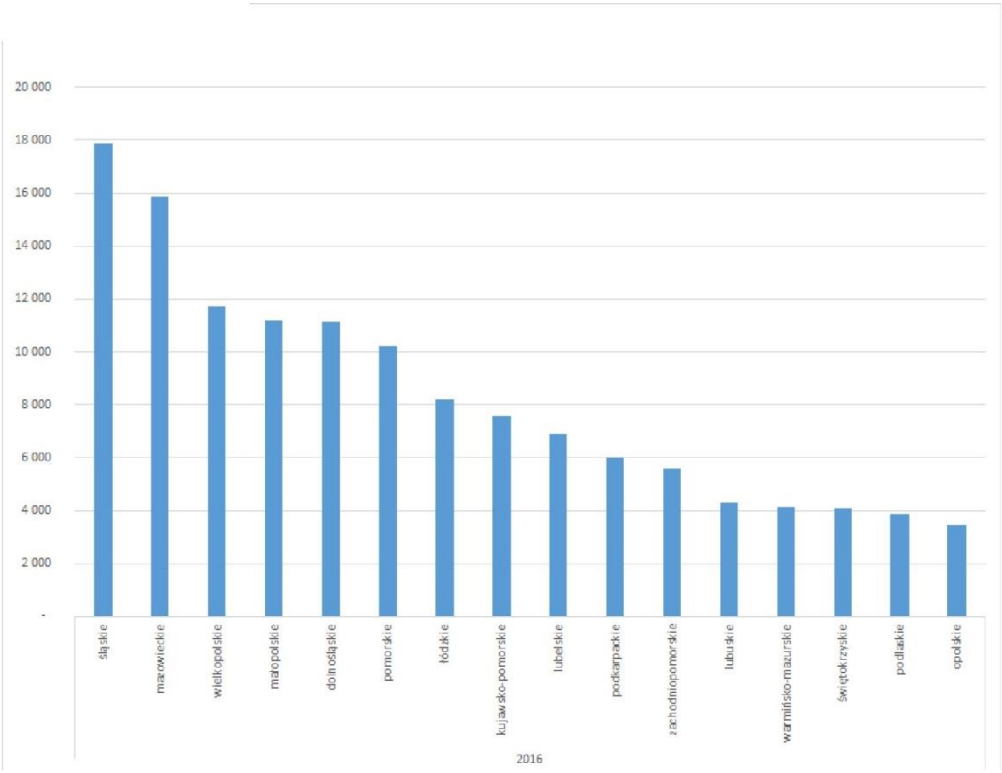
Source: compiled by DAiS based on data provided by the NFZ.

Figure 133: Projected demand for ablations in cardiological treatment per voivodeship (2029)



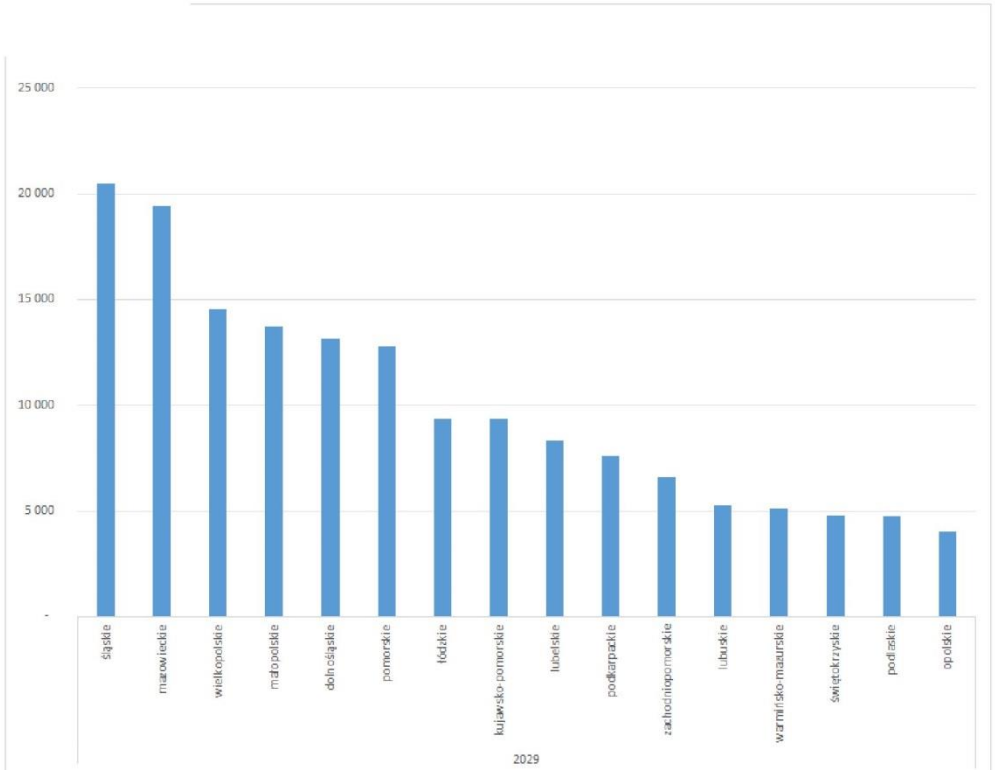
Source: compiled by DAiS based on data provided by the NFZ.

Figure 134: Projected demand for PCI in cardiological treatment per voivodeship (2016)



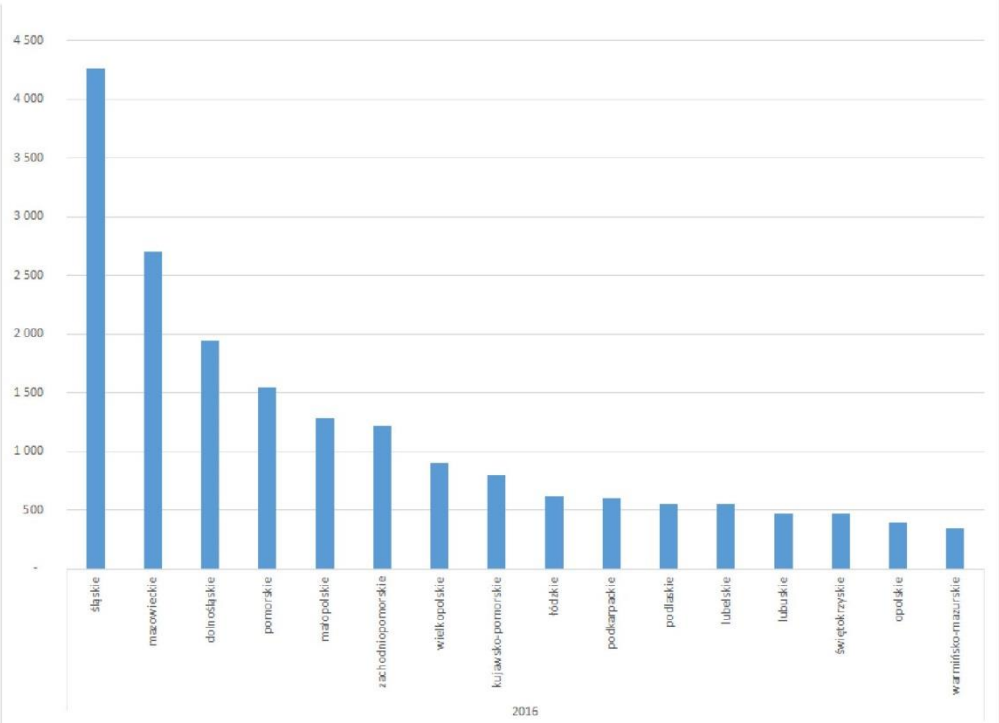
Source: compiled by DAiS based on data provided by the NFZ.

Figure 135: Projected demand for PCI in cardiological treatment per voivodeship (2029)



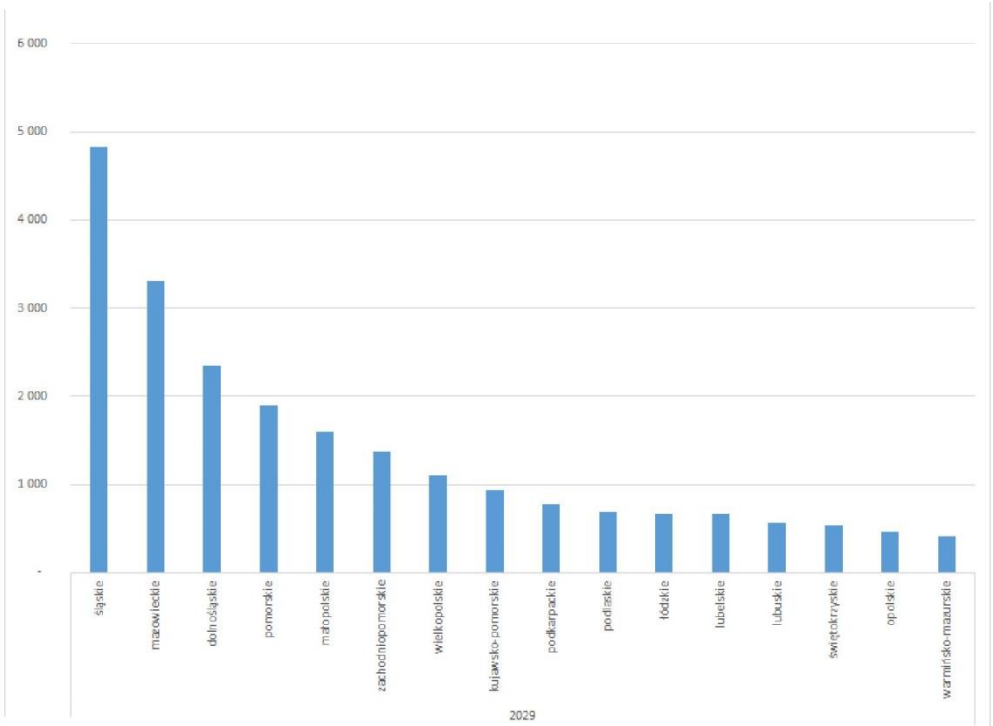
Source: compiled by DAiS based on data provided by the NFZ.

Figure 136: Projected demand for PCI in cardiological treatment per voivodeship (2016)



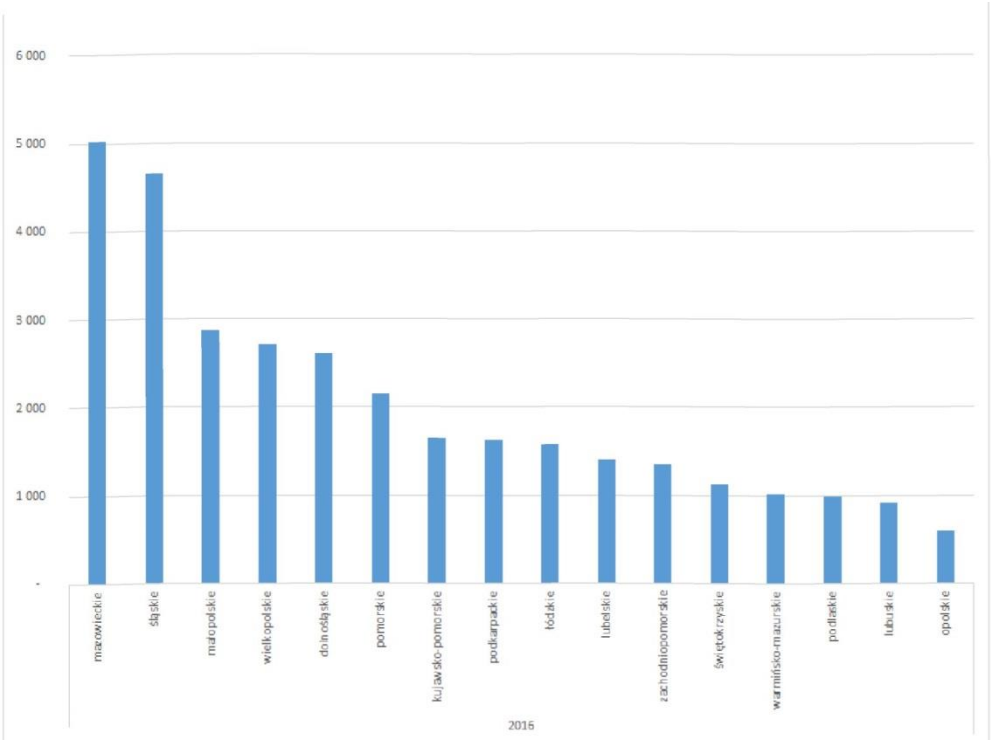
Source: compiled by DAiS based on data provided by the NFZ.

Figure 137: Projected demand for CABG in cardiological treatment per voivodeship (2029)



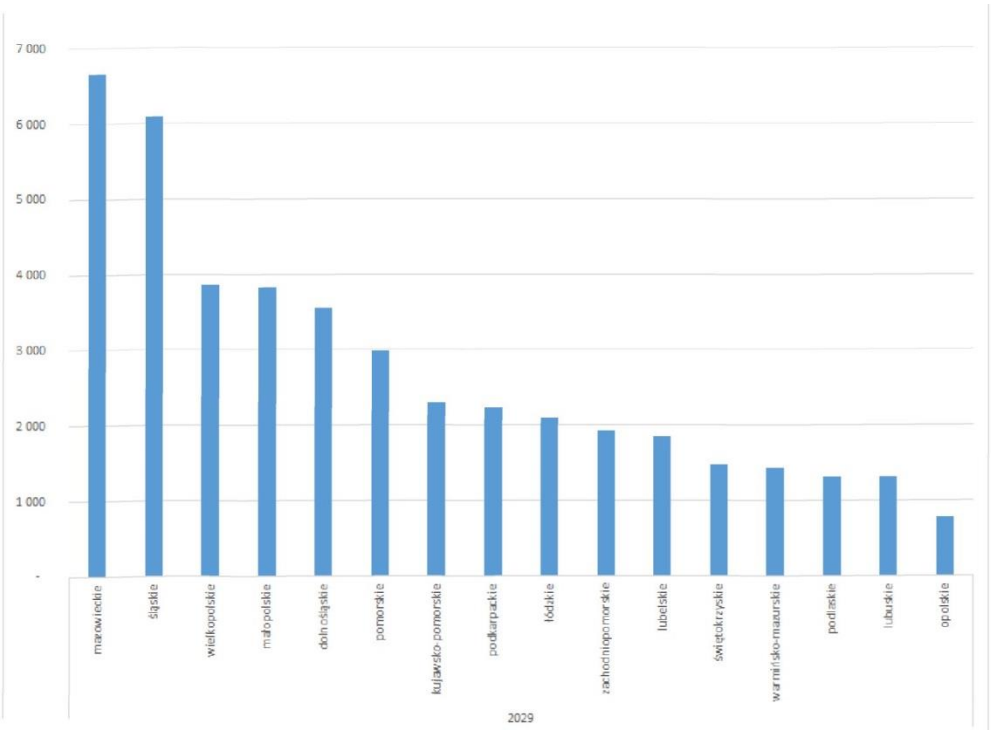
Source: compiled by DAiS based on data provided by the NFZ.

Figure 138: Projected demand for implantation/exchange of a pacemaker in cardiological treatment per voivodeship (2016)



Source: compiled by DAiS based on data provided by the NFZ.

Figure 139: Projected demand for implantation/exchange of a pacemaker in cardiological treatment per voivodeship (2029)



Source: Compiled byDAiS based on data provided by the NFZ.

Table 33: Projected demand for procedures requiring haemodynamic laboratories and tables in cadiological treatment in Poland (2016, 2018, 2024 and 2029)

Projected year	Projected number of procedures (in thousands)		Demand for tables with the number of assumed treatments per table	
	coronary angiography	PCI	3000 per year	2000 per year
2016	210.8	134.1	115	172
2018	216.9	138.0	118	177
2024	236.1	151.0	129	194
2029	251.7	162.1	138	207

Source: compiled by DAiS based on data from the NFZ database and the demographic forecast of the GUS

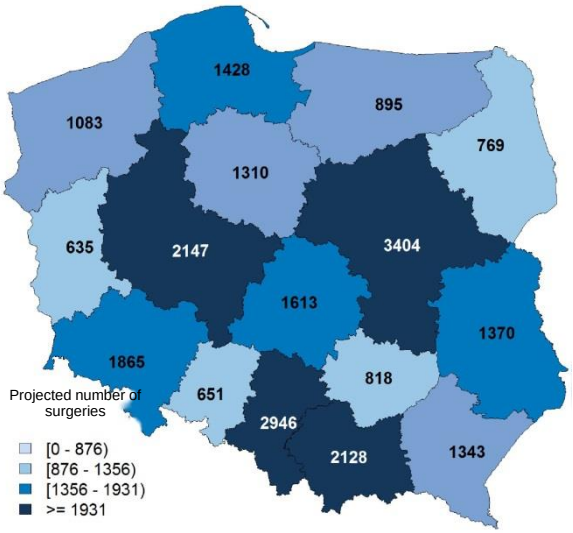
3.3 Adult Cardiac Surgery Forecast

Table 34: Projected number of cardiosurgical procedures (2016-2029)

Year	2016	2020	2025	2029
Projected number of	24,405	24,314	24,881	25,622

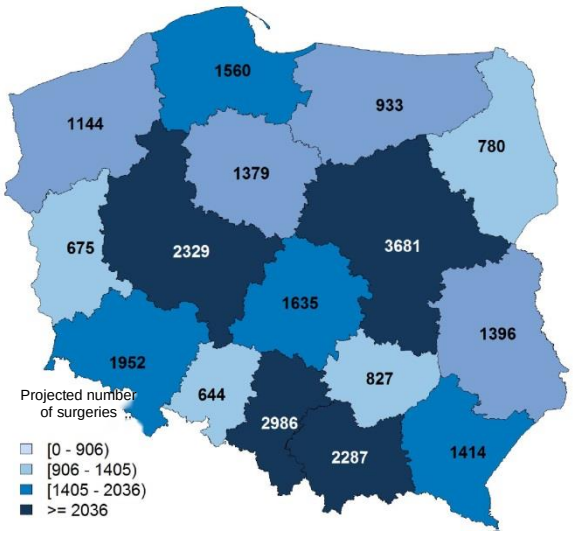
Source: compiled based on data from "Kardiochirurgia Polska 2014" report and data provided by the BDL GUS

Figure 140: Projected number of patients requiring cardiosurgical procedures per voivodeship (2016)



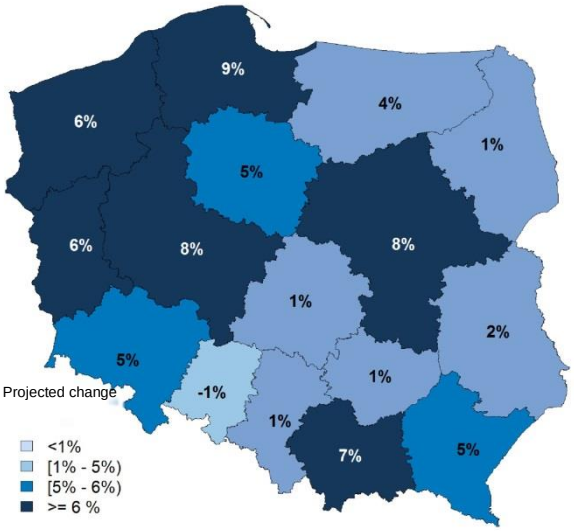
Source: compiled based on data from "Kardiochirurgia Polska 2014" report and data provided by the BDL GUS

Figure 141: Projected number of patients requiring cardiosurgical procedures per voivodeship (2029)



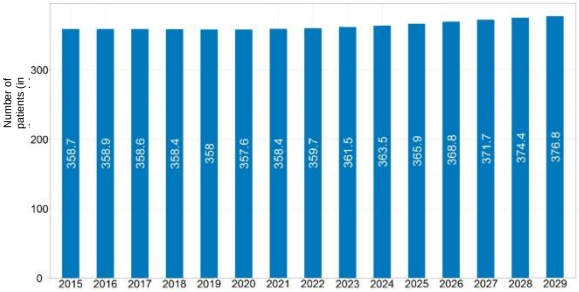
Source: compiled based on data from "Kardiochirurgia Polska 2014" report and data provided by the BDL GUS

Figure 142: Projected number of surgeries in years 2016-2029 by voivodeships



Source: compiled based on data from "Kardiochirurgia Polska 2014" report and data provided by the BDL GUS

Figure 143: Projected number of patients requiring cardiosurgical procedures per 1 operating theatre (2015-2029)



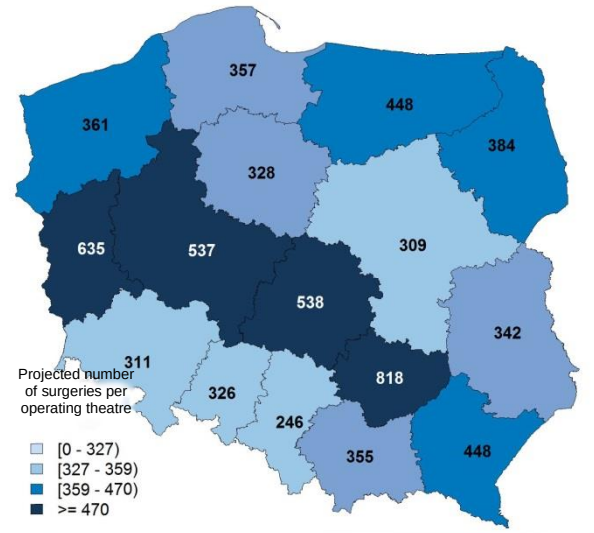
Source: compiled based on data from "Kardiochirurgia Polska 2014" report and data provided by the BDL GUS

Table 35: Projected number of cardiac surgeries and unexploited potential (2016-2029)

Year	2016	2020	2025	2029
Projected number of	24.4	24.4	24.9	25.6
Unexploited max. potential	14.3	14.4	13.8	13

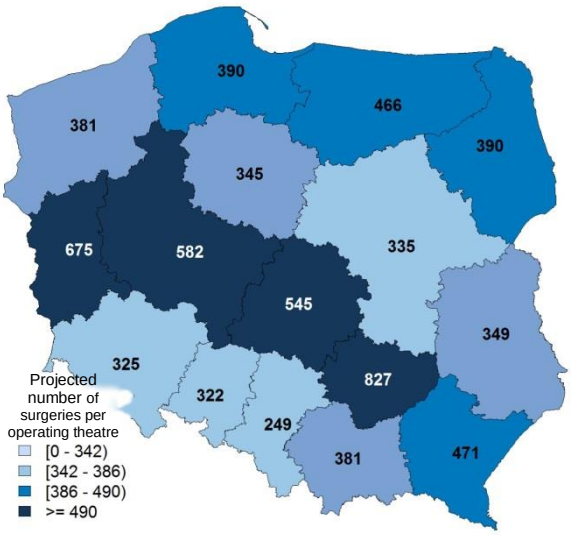
Source: compiled based on data from "Kardiochirurgia Polska 2014" report and data provided by the BDL GUS

Figure 144: Projected number of patients requiring cardiosurgical procedures per 1 operating theatre in selected voivodeships (2016)



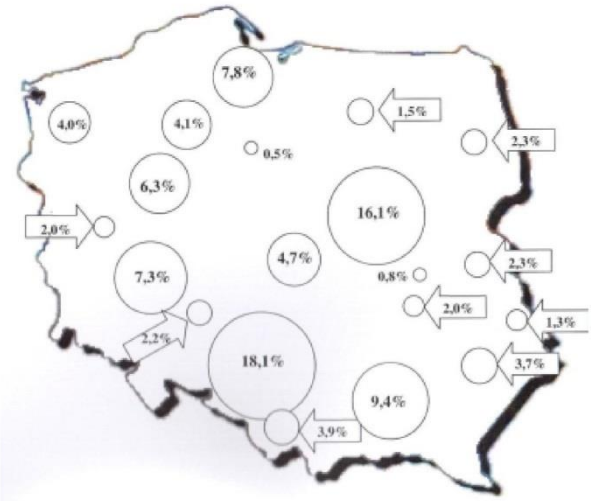
Source: compiled based on data from "Kardiochirurgia Polska 2014" report and data provided by the BDL GUS

Figure 145: Projected number of patients requiring cardiosurgical procedures per 1 operating theatre in selected voivodeships (2029)



Source: compiled based on data from "Kardiochirurgia Polska 2014" report and data provided by the BDL GUS

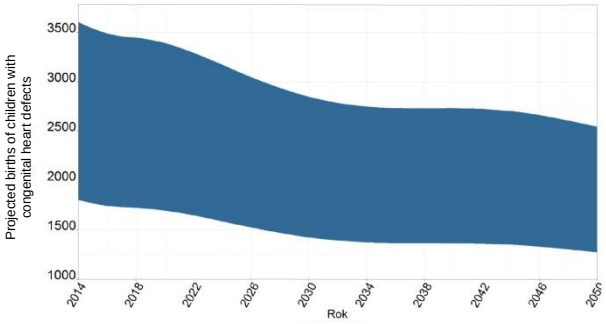
Figure 146: Geographic distribution of cardiac surgeries in Poland (2014)



Source: "Kardiochirurgia Polska 2014" report authored by: B. Maruszewski, Z. Tobota, consulted by M. Zembala (www.krok.org.pl).

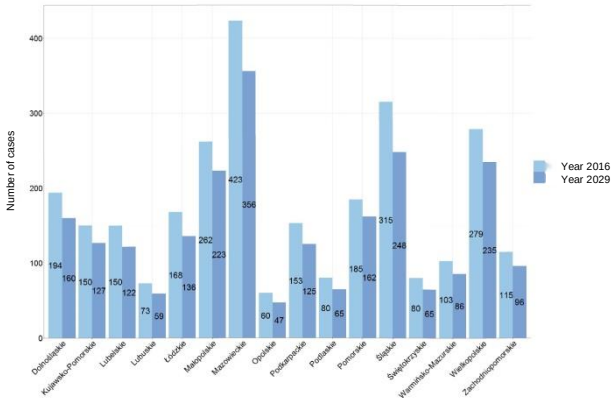
3.4 Paediatric Cardiology and Cardiac Surgery – Prognosis

Figure 147: Projected births of children with congenital heart defects



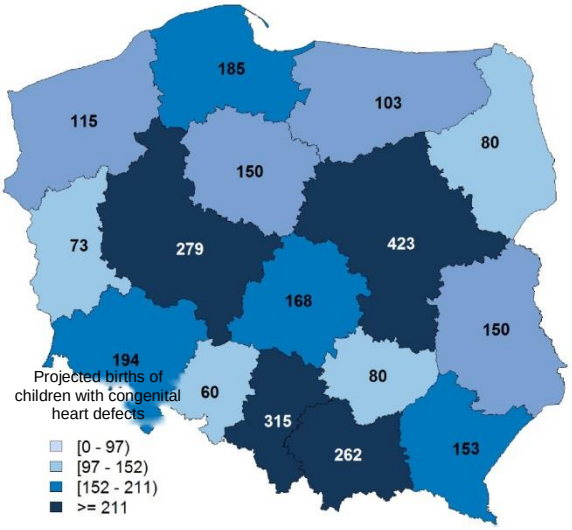
Source: compiled based on data provided by the NFZ

Figure 148: Projected births of children with congenital heart defects per voivodeship



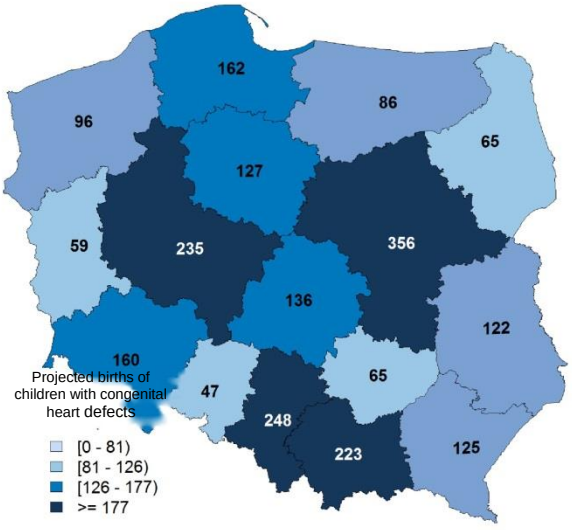
Source: compiled based on data provided by the NFZ

Figure 149: Projected births of children with congenital heart defects per voivodeship (2016)



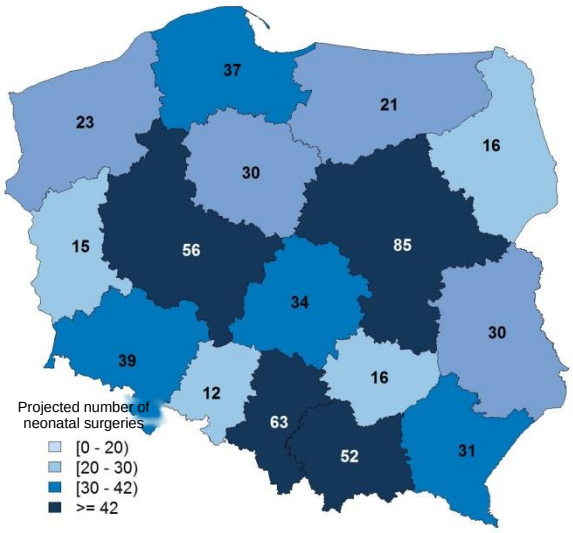
Source: compiled based on data provided by the NFZ

Figure 150: Projected births of children with congenital heart defects per voivodeship (2029)



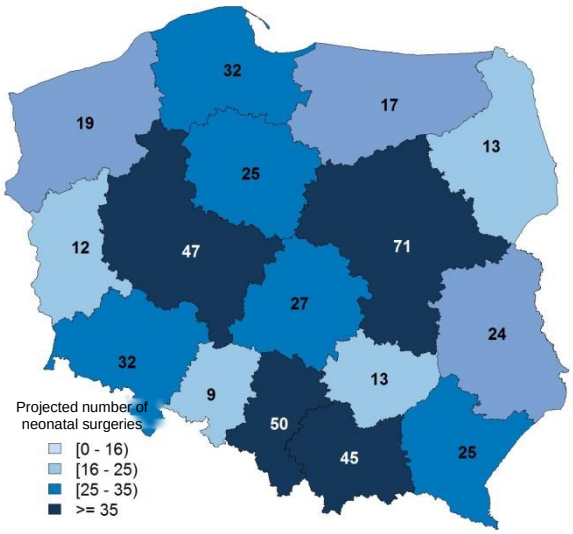
Source: compiled based on data provided by the NFZ

Figure 151: Projected number of surgeries in newborns with congenital heart defects requiring surgery per voivodeship (2016)



Source: compiled based on data provided by the NFZ

Figure 152: Projected number of surgeries in newborns with congenital heart defects requiring surgery per voivodeship (2029)



Source: compiled based on data provided by the NFZ

Table 36: Number of tables in haemodynamic and electrophysiological laboratories in Poland (2013)

Provincial Branch of the NFZ (OWNFZ)	Hospital	City/town	tables in haemo laboratories (used in haemo laboratories)*	tables in haemo laboratories	separate electrophysiological laboratory	separate pacemaker implantation laboratory, ICD, CRT	implantations performed in haemo laboratories	ablations in haemo laboratories
DOLNOŚLĄSKI	Jan Mikulicz–Radecki University Teaching Hospital in Wrocław	Wrocław	2	2	1			
DOLNOŚLĄSKI	REGIONAL SPECIALIST HOSPITAL IN WROCŁAW	WROCŁAW	1	1	1	1		
DOLNOŚLĄSKI	4 Military Clinical Hospital with Specialist Outpatient Clinic Independent Public Healthcare Centre in Wrocław	Wrocław	2	2	1	1		
DOLNOŚLĄSKI	Complex of Healthcare Facilities in Kłodzko	Kłodzko	1	1			1	1
DOLNOŚLĄSKI	Tadeusz Marciniak Lower Silesian Specialist Hospital – Emergency Medical Centre	Wrocław	2	2	1		1	
DOLNOŚLĄSKI	Kotlina Jelenionórska Regional Hospital Centre	Jelenia Góra	1	1				
DOLNOŚLĄSKI	"Miedziowe Centrum Zdrowia" S.A. Hospital in Lubin	Lubin	2	2			1	1
DOLNOŚLĄSKI	ALFRED SOKOŁOWSKI SPECIALIST HOSPITAL	WROCŁAW	1	1				
DOLNOŚLĄSKI	General Independent Public Healthcare Complex in Zgorzelec	Zgorzelec	1	1				
DOLNOŚLĄSKI	Regional Specialist Hospital in Legnica	Legnica	1	1		1		
DOLNOŚLĄSKI	American Heart of Poland, Centre of Cardiology and Angiology of Sudety	Polanica–Zdrój	1	1			1	1
KUJAWSKO–POMORSKI	Antoni Jurasz University Hospital No. 1 in Bydgoszcz	Bydgoszcz	2	2	1			
KUJAWSKO–POMORSKI	Jan Biziel University Hospital No. 2 in Bydgoszcz	Bydgoszcz	2	2			1	
KUJAWSKO–POMORSKI	10 Military Clinical Hospital with Specialist Outpatient Clinic Independent Public Healthcare Centre in Bydgoszcz	Bydgoszcz	2	2	1			
KUJAWSKO–POMORSKI	Ludwik Błażek General Hospital in Inowrocław	Inowrocław	1	1		1		
KUJAWSKO–POMORSKI	Emil Warmiński Memorial Municipal Hospital – Independent Public Healthcare Centre	Bydgoszcz	1	1			1	
KUJAWSKO–POMORSKI	Jerzy Popiełuszko Regional Specialist Hospital in Włocławek	Włocławek	1	1		1		
KUJAWSKO–POMORSKI	Ludwik Rydygier Regional Polyclinical Hospital in Toruń	Toruń	1	1		1		
KUJAWSKO–POMORSKI	Władysław Biegański Regional Specialist Hospital	Grudziądz	2	2	1			
	Nicolaus Copernicus Specialist Municipal Hospital	Toruń	1	1			1	
KUJAWSKO–POMORSKI	ESKULAP Hospital, Centre for Heart and Vascular Disease Treatment	Osielsko	1	1				
KUJAWSKO–POMORSKI	CARDINOX SPÓŁKA Z OGRANICZONĄ ODPOWIEDZIALNOŚCIĄ	TUCHOLA	1	1			1	
TUCHOLA	Independent Public Clinical Hospital No. 4 in Lublin	Lublin	2	2	1	1		
	JOHN PAUL II INDEPENDENT PUBLIC PROVINCIAL HOSPITAL	ZAMOŚĆ	2	2	1	1		
LUBELSKI	Regional Specialist Hospital in Biała Podlaska	Biała Podlaska	1	1	1	1		
LUBELSKI	Cardinal Stefan Wyszyński Regional Specialist Hospital Independent Public Publiczny Healthcare Centre	Lublin	1	1	1	1		
LUBELSKI	INDEPENDENT PUBLIC HEALTHCARE CENTRE OF THE MINISTRY OF INTERNAL AFFAIRS IN LUBLIN	LUBELSKI	1	1				
LUBELSKI	Independent Public Healthcare Centre in Puławy	Puławy	1	1				
LUBELSKI	Non-Public Invasive Cardiology Centre "Ikardia" Nałęczów	Nałęczów	1	1			1	
LUBELSKI	1 Military Clinical Hospital with Specialist Outpatient Independent Public Healthcare Centre in Lublin	Lublin	1	1				
LUBELSKI	Cardiology Centre Chełm – Inpatient Healthcare	Chełm	1	1				1
LUBUSKI	General Hospital in Nowa Sól	Nowa Sól	2	2	1	1		
LUBUSKI	Wielospecjalistyczny Szpital Wojewódzki w Gorzowie Wlkp. spółka z ograniczoną odpowiedzialnością	Gorzów Wielkopolski	1	1	1	1		
LUBUSKI	Provincial Hospital Karol Marcinkowski Independent Public Healthcare Centre in Zielona Góra	Zielona Góra	1	1	1		1	1
LUBUSKI	105 Military Hospital and Clinic Independent Public Healthcare Centre	Żary	1	1				
LUBUSKI	Independent Public Healthcare Centre Military Memorial Medical Academy – Central Veterans' Hospital in Łódź	Łódź	5	5	2	1		
ŁÓDZKI	NICOLAUS COPERNICUS PROVINCIAL SPECIALIST KOPERNIKA HOSPITAL IN ŁÓDŹ	Łódź	1	1				1
ŁÓDZKI	WŁADYSŁAW BIEGAŃSKI REGIONAL SPECIALIST HOSPITAL IN ŁÓDŹ	Łódź	3	3	1			1
ŁÓDZKI	Nicolaus Copernicus Independent Provincial Hospital in Piotrków Trybunalski	Piotrków Trybunalski	1	1				
ŁÓDZKI	General Hospital Jagiellońska	Radomsko	1	1				1
ŁÓDZKI	AHP, 12th Department of Cardiology in Bełchatów	Bełchatów	1	1			1	
ŁÓDZKI	MED–PRO Cardiology Centre in Zgierz – Stationary and 24h inpatient treatment	Zgierz	2	2				2
ŁÓDZKI	Allenort Cardiology Centre	Kutno	1	1				
ŁÓDZKI	NZOZ Invasive Cardiology and Angiology Centre	Łęczyca	1	1			1	
ŁÓDZKI	Independent Public Healthcare Centre of the Ministry of Internal Affairs in Łódź – HOSPITAL	Łódź	2	2			2	
ŁÓDZKI	Allenort Cardiology Centre	Tomaszów Mazowiecki	2	2		1		
ŁÓDZKI	Non-Public Invasive Cardiology and Angiology Centre	Sieradz	1	1			1	
MAŁOPOLSKI	John Paul II Specialist Hospital in Kraków – Hospital Wards	Kraków– Krowodrza	4	4	1	1		
MAŁOPOLSKI	INDEPENDENT PUBLIC HEALTHCARE CENTRE UNIVERSITY HOSPITAL IN CRACOW	Cracow	3	3		1		
MAŁOPOLSKI	E. SZCZEKLIK SPECIALIST HOSPITAL IN TARNÓW	TARNÓW	1	1		1		
MAŁOPOLSKI	TYTUS CHAŁUBIŃSKI COUNTY HOSPITAL IN ZAKOPANE	ZAKOPANE	1	1	1			
MAŁOPOLSKI	University Children's Hospital in Cracow	Cracow	2	2			1	1

Provincial Branch of the NFZ (OWNFZ)	Hospital	City/town	tables in haemo laboratories (used in haemo laboratories)*	tables in haemo laboratories	separate electrophysiological laboratory	separate pacemaker implantation laboratory, ICD, CRT	implantations performed in haemo laboratories	ablations in haemo laboratories
MAŁOPOLSKI	Saint Luke's Provincial Hospital in Tarnów Independent Public Healthcare Centre – Inpatient	TARNÓW	1	1	1			
MAŁOPOLSKI	County Hospital in Chrzanów	Chrzanów	1	1	1			
MAŁOPOLSKI	INVASIVE CARDIOLOGY, ELECTROTHERAPY ANDANGIOLOGY CENTRE OF CRACOW	CRACOW	2	2			1	1
MAŁOPOLSKI	Invasive Cardiology, Electrotherapy and Angiology Centre in Nowy Sącz	Nowy Sącz	1	1			1	1
MAŁOPOLSKI	Invasive Cardiology, Electrotherapy and Angiology Centre in Nowy Targ	Nowy Targ	1	1			1	
MAŁOPOLSKI	Invasive Cardiology, Electrotherapy and Angiology Centre in Oświęcim	Oświęcim	1	1		1		
MAŁOPOLSKI	PAKS Cardiovascular Centre in Małopolska – Chrzanów	Chrzanów	1	1	1			
MAZOWIECKI	Cardinal Wyszyński Institute of Cardiology	Warsaw	4	4	1			
MAZOWIECKI	Independent Public Central Clinical Hospital in Warsaw	Warsaw	2	2	1			
MAZOWIECKI	Central Clinical Kliniczny Hospital of the Ministry of the Interior and Administration in Warsaw	Warsaw	2	2	1			
MAZOWIECKI	Szpital Kliniczny Dzieciątka Jezus	Warszawa	1	1				
MAZOWIECKI	Central Clinical Hospital of the Ministry of Defence	Warszawa 44	2	2	1			
MAZOWIECKI	SZPITAL GROCHOWSKI IM.DR MED.RAFAŁA MASZTAKA SPÓŁKA Z OGRANICZONĄ ODPOWIEDZIALNOŚCIĄ	Warsaw	2	2	1			
MAZOWIECKI	Regional Polyclinical Hospital in Płock	Płock	1	1			1	
MAZOWIECKI	Mazowiecki Szpital Specjalistyczny Spółka z ograniczoną odpowiedzialnością	Radom	1	1	1			
MAZOWIECKI	Bródno Clinical Centre	Warsaw	1	1		1		
MAZOWIECKI	Regional Specialist Hospital in Ciechanów	Ciechanów	1	1				
MAZOWIECKI	Specialist Hospital in Siedlce	Siedlce	2	2	1			
MAZOWIECKI	Józef Psarski Mazovian Specialist Hospital in Ostrołęka stationary and 24h inpatient healthcare services	Ostrołęka	1	1			1	
MAZOWIECKI	Jerzy Popiełuszko Bielański Hospital – Independent Public Healthcare Centre	Warsaw	1	1		1		
MAZOWIECKI	Tytus Chałubiński Specialist Hospital in Radom – Inpatient Healthcare	Radom	2	2	1			
MAZOWIECKI	Anna Gostyńska Wola Hospital Independent Public Healthcare Centre	Warsaw	1	1	1			
MAZOWIECKI	John Paul II Independent Public Specialist Western Hospital	Grodzisk Mazowiecki	1	1	1			
MAZOWIECKI	Międzylesie Specialist Hospital in Warsaw	Warsaw	1	1			1	
MAZOWIECKI	MAGODENT Non-Public Healthcare Centre	Warszawa	1	1	1			
MAZOWIECKI	Independent Public Healthcare Centre in Siedlce	Siedlce	0	1			1	
MAZOWIECKI	Cardiology Centre – Hospital	Józefów	2	2	1			
MAZOWIECKI	Fryderyk Chopin European Health Centre in Otwock	Otwock	1	1				1
MAZOWIECKI	Medicover Hospital	Warsaw	1	1			1	
MAZOWIECKI	Allenort Cardiology Centre	Warsaw	1	1	1			
MAZOWIECKI	SENSOR CLINIQ HOSPITAL	Warsaw	0	1	1			
OPOLSKI	Independent Public Healthcare Centre Regional Medical Centre in Opole – Hospital	Opole	2	3	1		1	1
OPOLSKI	Specialist Hospital of the Ministry of the Interior and Administration in Głuchołazy	Głuchołazy	0	1				
OPOLSKI	American Heart of Poland, Cardiovascular Centre of Nysa	Nysa	1	2			1	1
OPOLSKI	American Heart of Poland, 4th Department of Invasive Cardiology, Electrostimulation and Angiology – Kędzierzyn Koźle	Kędzierzyn–Koźle	1	2	1		1	1
OPOLSKI		Kluczbork	1					
OPOLSKI	Provincial Hospital in Opole	Opole	0	1				
PODKARPACKI	Jadwiga Królowa Provincial Hospital No. 2 in Rzeszów	Rzeszów	2	2	1	1	1	1
PODKARPACKI	INDEPENDENT PUBLIC COMPLEX OF HEALTHCARE FACILITIES SPECIALIST COUNTY HOSPITAL	Stalowa Wola	1	1		1		1
PODKARPACKI	ST. PADRE PIO PROVINCIAL HOSPITAL IN PRZEMYŚL	PRZEMYŚL	2	2		1		1
PODKARPACKI	Independent Public Healthcare Centre of the Ministry of Internal Affairs in Rzeszów	Rzeszów	1	1				
PODKARPACKI	Saint Joseph's Heart Centre	Rzeszów	1	1	1	1		
PODKARPACKI	Cardiovascular Interventions Centre of Podkarpacie in Sanok	Sanok	1	1			1	1
PODKARPACKI	Invasive Cardiology, Electrotherapy and Angiology in Krosno	Krosno	1	1				1
PODKARPACKI	American Heart of Poland, 5th Department of Invasive Cardiology and Angiology - Mielec	Mielec	1	1				
PODLASKI	"PROCARDIA" Non-Public Healthcare Centre	Augustów	1	1			1	1
PODLASKI	Medical University of Białystok Hospital	Białystok	2	2	1			
PODLASKI	Jędrzej Śniadecki Independent Public Healthcare Centre Regional Polyclinical Hospital in Białystok	Białystok	1	1			1	1
	Cardinal Stefan Wyszyński Regional Hospital	Łomża	1	1			1	1
PODLASKI	Independent Public Healthcare Centre of the Ministry of Internal Affairs in Białystok	Białystok	1	1		1		1
POMORSKI	University Clinical Centre	Gdańsk	3	3	1	1		
	Regional Specialist Hospital in Słupsk	Słupsk	1	1		1		
POMORSKI	Saint Vincent's Hospital in Gdynia	Gdynia	1	1		1		
POMORSKI	SAINT ADALBERT'S GENERAL HOSPITAL	GDAŃSK	1	1	1	1		
POMORSKI	Swissmed Vascular Hospital	Gdańsk	1	1	difficulties in obtaining data			

OWNFZ	Hospital	City/town	tables in haemo laboratories (used in haemo laboratories)*	tables in haemo laboratories	separate electrophysiological laboratory	separate pacemaker implantation laboratory, ICD, CRT	implantations performed in haemo laboratories	ablations in haemo laboratories
POMORSKI	Jan Karol Łukowicz Specialist Hospital in Chojnice	Chojnice	1	1		1		
POMORSKI	Szpital Specjalistyczny w Kościerzynie spółka z ograniczoną odpowiedzialnością	Kościerzyna	2	2		1		
POMORSKI	American Heart of Poland, Centre of Cardiology and Angiology in Sztum	Sztum	1	1			1	
POMORSKI	Pomorskie Centra Kardiologiczne Non-Public Healthcare Centre – Starogard Gdański	Starogard Gdański	1	1				
POMORSKI	Pomorskie Centra Kardiologiczne Non-Public Healthcare Centre – Wejherowo	Wejherowo	1	1				
POMORSKI	Independent Public Healthcare Centre "Clinica Sopot"	Sopot	1	1			1	1
ŚLĄSKI	Independent Public Clinical Hospital No. 7 of the Silesian Medical University in Katowice Prof. Leszek Giec Upper-Silesian Medical Centre	Katowice	3	3	1		1	1
ŚLĄSKI	Silesian Centre of Heart Diseases in Zabrze	Zabrze	6	6	1	1		
ŚLĄSKI	Specialist Hospital Zabrze	Zabrze	1	1			1	
ŚLĄSKI	Regional Specialist Hospital No. 4 in Bytom	Bytom	1	1			1	
ŚLĄSKI	American Heart of Poland - 3rd Department of Invasive Cardiology, Angiology and Electrocardiology	Dąbrowa Górnicza	1	1			1	
ŚLĄSKI	American Heart of Poland – Serca 2nd Department of Cardiology	Bielsko–Biała	1	1			1	
ŚLĄSKI	Independent Public Healthcare Centre Provincial Specialist Hospital No. 3 in Rybnik	Rybnik	1	1			1	
ŚLĄSKI	Non-Public Hospital Polonia Świata Healthcare Centre of Polska Grupa Medyczna	Gliwice	1	1	1		1	1
	Saint Barbara's Regional Specialist Hospital No. 5 in Sosnowiec	Sosnowiec	1	1			1	1
ŚLĄSKI	American Heart of Poland 10th Department of Cardiology, Electrophysiology and	Tychy	1	1	1		1	1
ŚLĄSKI	Tomasz Ludyga EuroMedic MEDICAL CENTER Hospital	Katowice	1	1			1	1
ŚLĄSKI	Blessed Virgin Mary's Voivodeship Specialist Hospital in Częstochowa	Częstochowa	1	1			1	1
ŚLĄSKI	Non-Public Healthcare Centre RACIBORSKIE CENTRUM MEDYCZNE	Racibórz	1	1			1	
ŚLĄSKI	American Heart of Poland, 1st Department of Cardiology and Angiology	Ustroń	1	1			1	
ŚLĄSKI	Non-Public Hospital Polonia Świata Healthcare Centre of Polska Grupa Medyczna	Gliwice	1	1			1	
ŚLĄSKI	Non-Public Hospital Polonia Świata Healthcare Centre of Polska Grupa Medyczna	Gliwice	1	1			1	
ŚLĄSKI	American Heart of Poland, 15th Department of Cardiology in Myszków	Myszków	1	1				
ŚWIĘTOKRZYSKI	Regional Polyclinical Hospital in Kielce	Kielce	2	2	1	1		
ŚWIĘTOKRZYSKI	Holy Spirit Specialist Hospital in Sandomierz	Sandomierz	1	1				
ŚWIĘTOKRZYSKI	Saint Luke's Specialist Hospital	Końskie	1	1				
ŚWIĘTOKRZYSKI	County Public Healthcare Centre	STARACHOWICE	1	1			1	1
ŚWIĘTOKRZYSKI	American Heart of Poland, Wadiusza Kiesz Centre of Cardiology and Angiology	Starachowice	1	1		1		
ŚWIĘTOKRZYSKI	Invasive Cardiology, Electrotherapy and Angiology Centre in Pińczów	Pińczów	1	1			1	1
ŚWIĘTOKRZYSKI	Invasive Cardiology, Electrotherapy and Angiology Centre in Ostrowiec Świętokrzyski	Ostrowiec Świętokrzyski	1	1			1	1
WARMIŃSKO–MAZURSKI	REGIONAL SPECIALIST HOSPITAL IN OLSZTYN	Olsztyn	2	2	1		1	
WARMIŃSKO–MAZURSKI	REGIONAL POLYCLINICAL HOSPITAL IN ELBLĄG	Elbląg	2	2	1	1		
WARMIŃSKO–MAZURSKI	Allenort Cardiology Centre	Ełk	2	2	1			
WARMIŃSKO–MAZURSKI	Allenort Cardiology Centre	Iława	1	1				
WARMIŃSKO–MAZURSKI	Pomorskie Centra Kardiologiczne Non-Public Centra Healthcare Centre – Mrągowo	Mrągowo	1	1				
WIELKOPOLSKI	REHABILITATION–CARDIOLOGY HOSPITAL IN KOWANÓWKO	Oborniki Kowanówko	1	1		1		
WIELKOPOLSKI	Karol Marcinkowski University Hospital of Lord's Transfiguration in Poznań	Poznań–Stare Miasto	2	2	1	1		
WIELKOPOLSKI	Provincial Hospital in Poznań	Poznań	1	2			1	
WIELKOPOLSKI	J. Struś City Hospital	Poznań	2	2			1	1
WIELKOPOLSKI	Non-Public Healthcare Centre Zdrowotnej "Szpital w Puszczykowie im. prof. Stefana Tytusa Dąbrowskiego"– Hospital wards	Puszczykowo	1	1		1		
WIELKOPOLSKI	Ludwik Perzyna Regional Polyclinical Hospital in Kalisz – Inpatient Healthcare	Kalisz	2	2			1	1
WIELKOPOLSKI	STANISŁAW STASZIC SPECIALIST HOSPITAL IN PIŁA	Piła	1	1		1		
WIELKOPOLSKI	Regional Polyclinical Hospital in Konin	Konin	1	1		1		
WIELKOPOLSKI	"Pleszewskie Centrum Medyczne w Pleszewie" Spółka z ograniczoną odpowiedzialnością	Pleszew	1	1			1	
WIELKOPOLSKI	Heliodor Święcicki Clinical Hospital at the Karol Marcinkowski Medical University in Poznań	Poznań	1	2			1	1
WIELKOPOLSKI	Complex of Healthcare Facilities in Ostrów Wielkopolski	Ostrów Wielkopolski	1	1		1		
WIELKOPOLSKI	Centrum Medyczne HCP - Inpatient treatment	Poznań–Wilda	1	1			1	1
WIELKOPOLSKI	Complex of Healthcare Facilities in Gniezno	Gniezno	1	1			1	
WIELKOPOLSKI	Non-Public Invasive Cardiology Centre	Leszno	1	1	1	1		
ZACHODNIOPOMORSKI	Independent Public Regional Polyclinical Hospital	Szczecin	1	1	1	1		
ZACHODNIOPOMORSKI	Independent Public Clinical Hospital No. 2 of Pomeranian Medical University in Szczecin	Szczecin	2	2	1	1		
ZACHODNIOPOMORSKI	Nicolaus Copernicus Regional Hospital in Koszalin		1	1	1	1		
ZACHODNIOPOMORSKI	CARDIOVASCULAR CENTRE	DRAWSKO	1	1				
ZACHODNIOPOMORSKI	Allenort Cardiology Centre	Szczecinek	1	1			1	

Source: data provided by prof. dr hab. n. med. Jarosław Kaźmierczak, National Consultant