



Towards better cardiovascular health in Poland

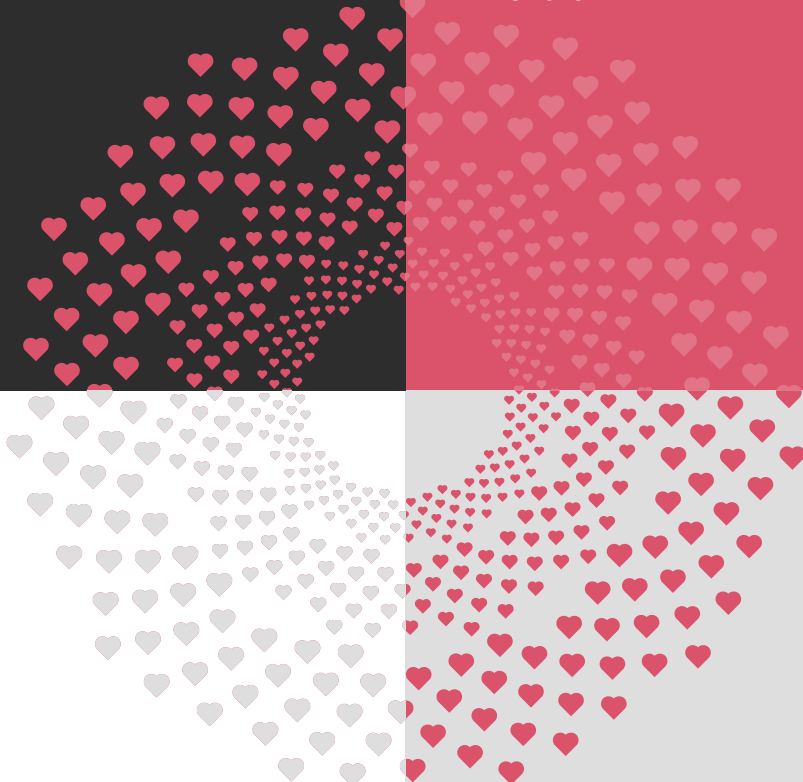
Insights from a multi-stakeholder
roundtable discussion

January 2025



Contents

Foreword	3
Introduction	4
Challenges in cardiovascular health management in Poland	9
CVD screening and prevention	11
CVD-related equity	14
Improving cardiovascular health in Poland: key recommendations	17
A. Improve screening programmes	20
B. Harmonise and strengthen access to and coordination of care after diagnosis	22
C. Unlock the power of data for decision-making	24
D. Align funding with the updated clinical evidence and changing epidemiological trends	27
Synergies with European initiatives	28
Conclusion	30
About this research	32
Acknowledgements	33
Bibliography	34



Foreword

Prof. dr hab. Robert J. Gil
President, Polish Cardiac Society

In Poland, cardiovascular (CV) healthcare is one of the key challenges for the healthcare system, with cardiovascular disease (CVD) among the leading causes of death and hospitalisation. As the number of CVD cases grows, it is essential to secure not only adequate financial resources but also to introduce population-level interventions and structural changes that enhance the effectiveness of care across all levels of the healthcare system.

The system needs harmonisation, not revolution. There is no need to overhaul the healthcare system. The focus should be on aligning existing structures, such as primary care, outpatient care and hospitals to ensure that they operate in harmony rather than in competition. This will enable CVD patients to receive appropriate support at every stage, from diagnosis to treatment and ensure a seamless cooperation, which – in the long term – will improve resource allocation and enhance efficiency.

Changes should be implemented gradually, with proper consultation and evaluation. It is crucial that the medical community has enough time to assess and provide input on proposed reforms. Changes must be introduced incrementally, with flexibility for adjustments. Given the complexity of the healthcare system and CV care, legislation cannot be rushed. Solutions should be developed in consultation with specialists and adapted to evolving conditions and patient needs.

Effective collaboration between the Ministry of Health and medical professionals is critical. Continuous dialogue and working groups are essential for regular information exchange and collaborative evaluation of proposed changes, particularly between the Ministry of Health and the medical community. Establishing permanent working groups and systematic exchanges of expertise between policymakers and specialists will help tailor healthcare policies to the rapidly changing demands.

Shifting diagnostics to outpatient care is a priority.

Modern diagnostic technologies allow for effective testing without the need for hospitalisation. Diagnostics should take place primarily in outpatient settings, with hospitals used only when necessary. Leveraging outpatient care will ensure more efficient CVD diagnosis, allowing hospital resources to be redirected towards advanced treatments for patients who need them the most.

These initiatives reflect a broader vision of a healthcare system designed to address patient needs and the challenges of CVD. Ongoing and new initiatives in Poland, such as the health education initiative launching in 2025, the Coordinated Care Programme in Primary Care (Opieka Koordynowana w POZ) and the new legislation of the National Cardiology Network (Krajowa Sieć Kardiologiczna), coupled with a greater emphasis on collaboration, prevention and efficient resource allocation, represent a promising step towards delivering more effective and patient-centred care in the future.

This document is the result of ongoing discussions on necessary reforms in CVD healthcare and aims to inspire constructive action to address current challenges. It presents an integrated view of the problem of CVD, taking into account the perspectives of various stakeholders, and summarises recommendations that can, over time, support effective strategies to improve CVD outcomes in Poland.

Introduction



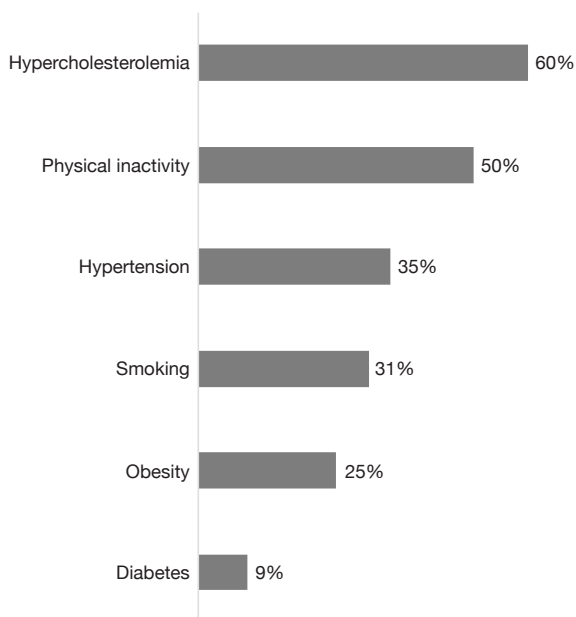
The burden of disease

Improving CV health is of paramount importance in Poland. The society is currently facing increasing demands for specialised care, driven by the high prevalence of risk factors such as hypercholesterolemia, hypertension and hyperglycemia, as well as behavioural factors including smoking, physical inactivity and the increasing rates of overweight and obesity (Figure 1a) (1, 2).

In fact, CVD is the leading cause of mortality in Poland. It accounted for approximately 34.8% of deaths in 2021 (160,000 annually), which is above the European Union (EU) average of 31.4%, and ranked highly compared with other European countries (Figure 1b) (3,4). This high mortality rate is largely related to hypertensive heart disease, ischemic heart disease and other circulatory disorders (5).

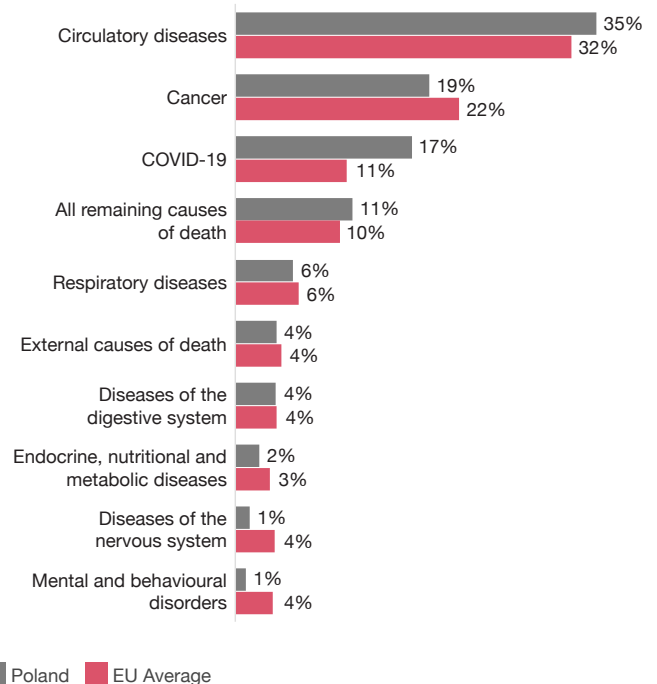
Figure 1. Prevalence of CVD risk factors and main causes of death in Poland

A. Prevalence of the most common CVD risk factors in Poland, 2024



Source: Sokolska J. M, Ponikowski P, Global Rounds: Poland (2024)

B. Main causes of death in Poland vs EU (% of all deaths), 2021



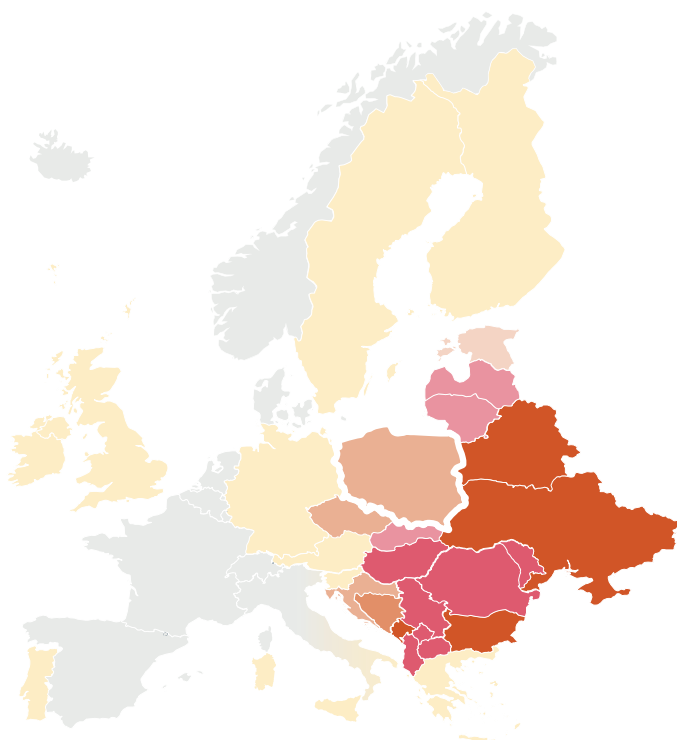
Source: Eurostat (2024), Główny Urząd Statystyczny (2022), WHO (2024)

This results in a significant economic impact of CVD in Poland. A recent report by the European Society of Cardiology on the economic burden of CVD in Europe estimated the total cost of CVD management in Poland to be approximately 13 billion EUR, or 269 EUR per capita. This estimate includes expenditures related to health and social care costs, as well as indirect costs related to informal care and productivity losses (6). Overall, the national healthcare system and society face significant pressure in relation to the CVD burden (6) (Figure 2).



Figure 2. The burden of CVD across Europe

A. CVD death rates among countries in Europe, 2022

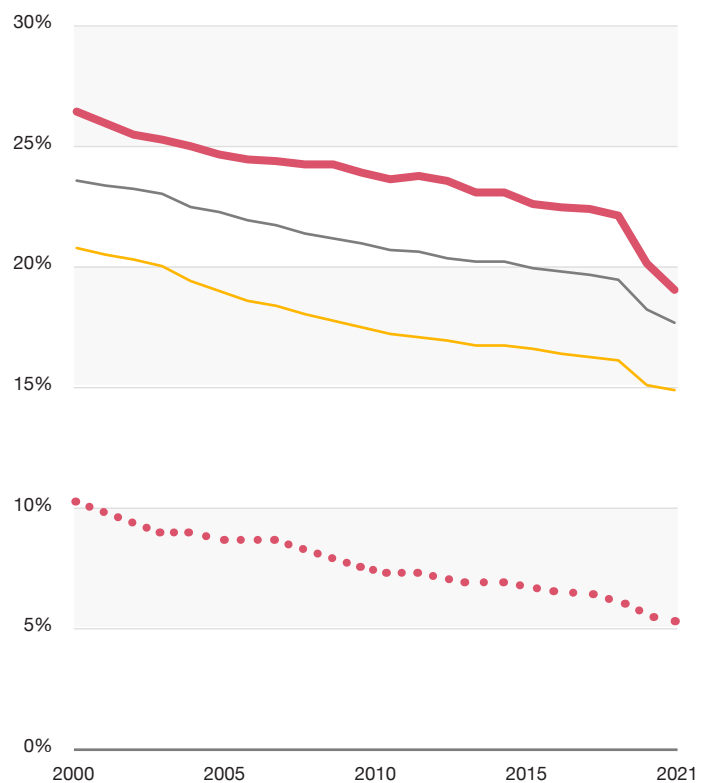


2022 age-Standardised CVD mortality rate per 100,000:

57.5 - 108.2	259.1 - 287.6
108.3 - 147.4	287.7 - 329.4
147.5 - 194.0	329.5 - 378.6
194.1 - 228.3	379.7 - 441.4
228.4 - 259.0	441.5 - 714.5

Source: George et al., JAAC (2023). 82:2350-2473; <https://www.jacc.org/doi/10.1016/j.jacc.2023.11.007>

B. CVD-related DALYs (% total DALYs), both sexes, 2000-2021



— European Union, all ages
 — Western Europe, all ages
 — Poland, all ages
 Poland, 15-49 yo

Source: GBD (2021)

The national strategy

Poland is one of the few European countries to have implemented a dedicated national strategy focused on CV health. The Polish National programme for Cardiovascular Diseases (Narodowy Programme Chorób Układu Krążenia, NPChUK) is a comprehensive programme aimed at reducing the burden of CVD through a multifaceted approach emphasising prevention, early detection and effective treatment (7). Spanning from 2022 to 2032 with a budget of approximately 700m EUR, the NPChUK aims to reduce CVD morbidity and mortality, improve patients' quality of life and align Poland's health indicators with EU averages. The programme is centred on five key areas and includes initiatives such as implementing systematic screening programmes, securing appropriate funding, improving care coordination and innovation through specialised centres, reducing disparities across regions and enhancing public

education efforts (7) (Figure 3). This strategy is supported by major national organisations including the Ministry of Health, the National Health Fund (Narodowy Fundusz Zdrowia, NFZ), the Agency for Health Technology Assessment and Tariff System (Agencja Oceny Technologii Medycznych i Taryfikacji, AOTMiT) and the National Institute of Cardiology and other leading scientific institutions in the country, ensuring a coordinated and well-supported effort (7). The programme has great potential and high expectations for the long-term improvement of CV health in Poland and throughout Eastern Europe.

Figure 3. The National Programme on Cardiovascular Diseases (NPChUK)

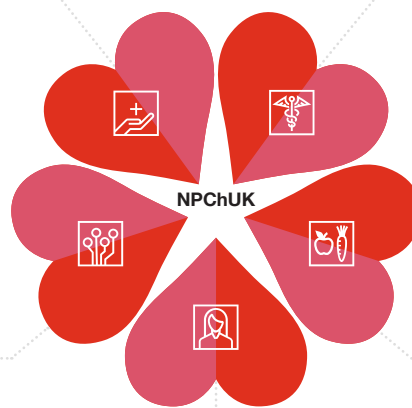
National Programme on Cardiovascular Diseases (NPChUK) – five strategic areas

V. Investment in CVD management

- Increasing access of CVD patients to **coordinated cardiovascular care**
- Improving the **quality of life of CVD patients during and after** cardiac treatment, including better access to rehabilitation
- Increasing access to **modern medical equipment** through funding programmes
- Supporting the development of **palliative and hospice care**

IV. Investment in research and innovation

- Increasing **participation of CVD patients in clinical trials**
- Improving the **organisation and funding** of the **scientific research** system in cardiology
- Facilitating **access to innovative therapies** in cardiology and fields related to CVD



I. Investment in workforce

- **Increasing the number of medical professionals** specialising in the area of CVD
- Boosting the knowledge and **preventive, diagnostic and therapeutic skills** of the broader medical staff

II. Investment in education, prevention and lifestyle

- Supporting **pro-health education** and **promotion of healthy lifestyles** (physical activity, diet and the fight against obesity)
- Improving **adults' and children's awareness** of the impact of health-promoting attitudes on CVD
- Implementing regulations supporting healthy eating and anti-tobacco policies

III. Investment in patient

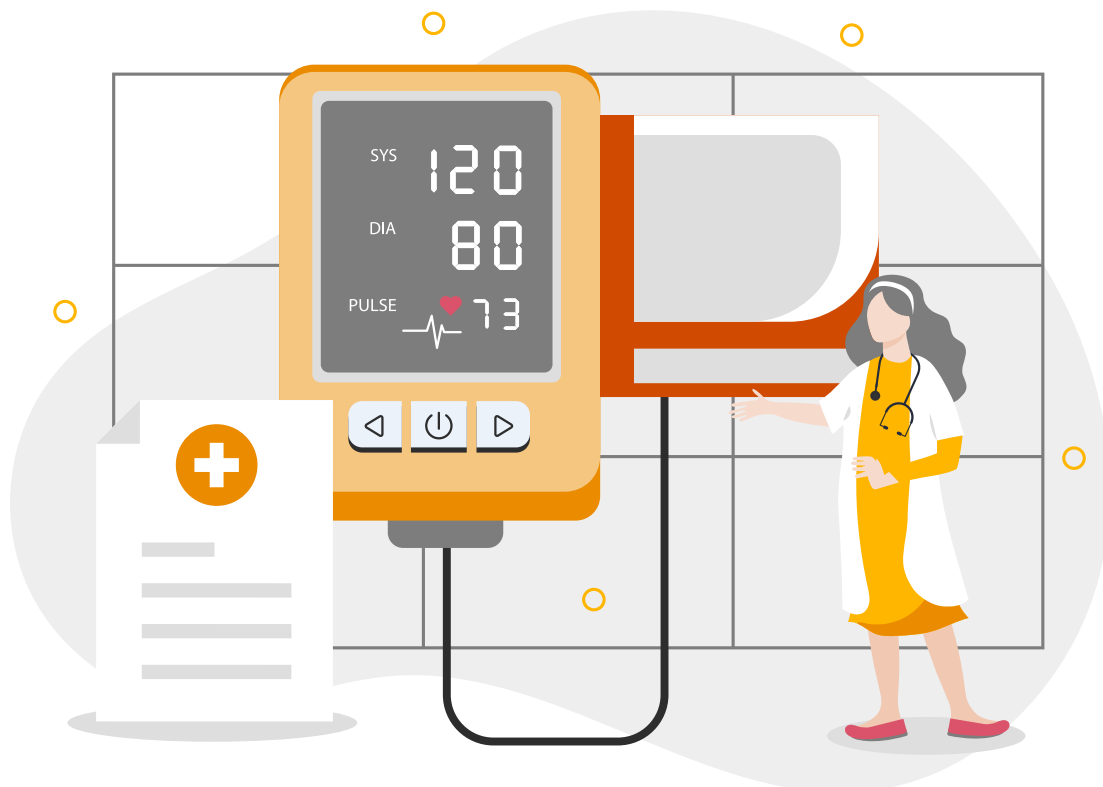
- Facilitating access to **preventive screening** to detect CVD at early stages
- Engaging **primary care and occupational health doctors** in identification and assessment of CVD risk factors
- Enhancing the quality of care for **patients with high and very high CV risk** or patients requiring specialised care

Source: Ministry of Health of Poland (2022)

Call to action

This document builds on previous findings and recommendations developed by the European Federation of Pharmaceutical Industries and Associations (EFPIA) and PwC on CV health in Europe and highlights the critical role of improving CV health as a foundation for resilient and equitable health systems (8). In light of ongoing discussions on the next steps in the implementation of the NPChUK strategy, a multi-stakeholder roundtable was convened on in Warsaw on 5 June 2024. This event brought together representatives from the Polish Ministry of Health, public institutions, patient organisations, academia, professional societies and the pharmaceutical industry. The objective was to identify and prioritise critical areas that require attention, either within or supplementary to those already highlighted in the NPChUK.

Drawing on insights from the roundtable and a thorough review of published scientific literature, this paper examines key challenges related to systematic CV screening and prevention, awareness of CVD, use of data and equitable access to quality care. By integrating perspectives of different stakeholders and examining the interconnections between CVD policies in Poland and the broader EU context, this paper summarises actionable recommendations for policymakers that will support the development of effective CV health strategies. These strategies aim to improve health outcomes and strengthen the resilience of the Polish healthcare system. In the context of the Polish Presidency of the European Council in the first semester of 2025, this report also serves as a call to action, urging extensive discussion and swift implementation of these recommendations to advance CV health across the nation.





Challenges in cardiovascular health management in Poland

CVD is a public health challenge across Europe and particularly in the Central and Eastern region, where CV outcomes lag behind the rest of the continent. In addition, there is emerging evidence of a slowdown in the control of the CVD burden in younger populations after the COVID-19 pandemic (Figure 2b) (8,9).

While the NPChUK comprehensively captures the main drivers of the ongoing CVD trends in Poland, some challenges remain unaddressed. The following sections discuss the key challenges in CVD management highlighted during the roundtable discussion, particularly in the areas of screening and prevention, as well as equity of access to care (Figure 4).

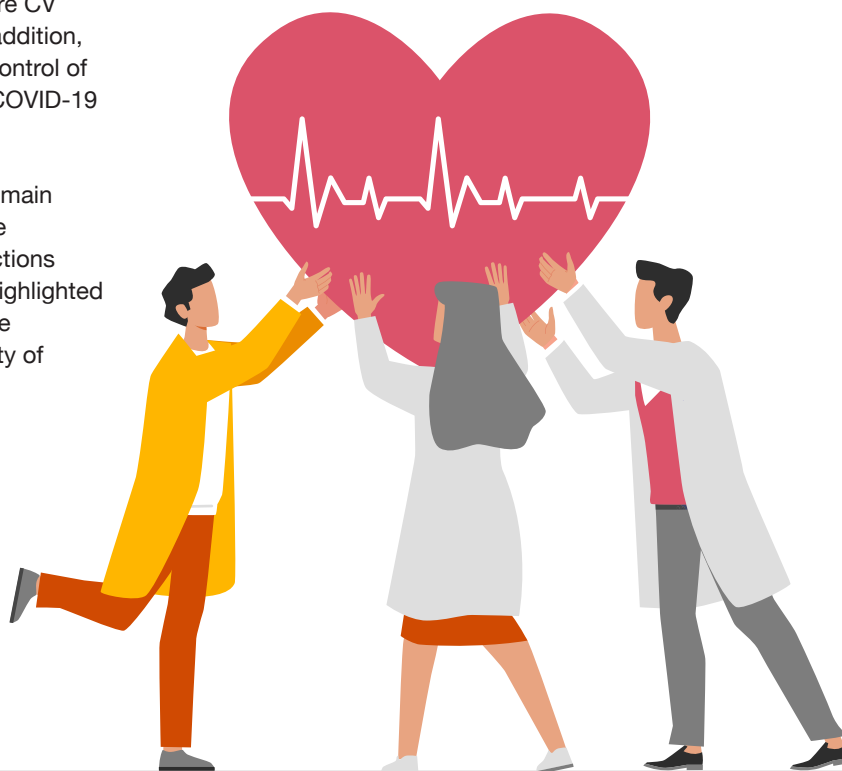








Figure 4. Overview of key challenges

CVD screening and prevention

-  Lack of systematic screening aimed at detecting risk factors
-  Discontinuation of national programmes and initiatives
-  Ineffective coordination of cardiovascular care following screening and diagnosis
-  Suboptimal use of data and analytics for decision-making

CVD-related equity

-  Regional differences in access to and coordination of cardiovascular care
-  Unequal access to treatment and innovative therapies

CVD screening and prevention

Achieving effective CVD control through primary and secondary prevention¹ has been a longstanding challenge in Poland, as evidenced by the persisting high prevalence of CVD risk factors across the population (Figure 1), as well as ill health and premature mortality (Figure 2) (2). Similarly to other European countries, the management of CVD in Poland has traditionally focused more on treating the disease and acute events rather than preventing their occurrence (10). This is underlined by the fact that only 2% of the NFZ budget is allocated to preventive measures (11).



Challenge 1:

Lack of systematic screening aimed at detecting risk factors

As in most European countries, there is no systematic, population-level screening for CVD symptoms and risk in Poland at present. Initiatives such as 'Profilaktyka 40 PLUS', which was launched in 2021 with the goal of providing preventive screening to 20 million people, have shown low participation, with only 3.5 million participants as of June 2024. This is probably due to factors such as limited public awareness and logistical challenges (12). Moreover, the programme did not include a structured and consistent follow-up to ensure coordination between diagnosis, lifestyle changes and initiation of therapy, thus limiting its effectiveness in CVD prevention. This gap in screening is of particular concern because many individuals remain unaware of their risk status, as demonstrated by the LIPIDOGRAM cohort study (2004–2015) - the largest of its kind in Europe - which found a staggering 84% prevalence of dyslipidemia among primary care patients in Poland (14). The WOBASZ II 2013–2014 (15) study and the NATPOL 2011 national survey also reported similar findings, showing that most people were unaware of their condition (16). While there has been some improvement in recent years with more Poles now undergoing checks for cholesterol, blood sugar and other key health indicators, the current approach still fails consistently to reach the population at large (13). Moreover, even when at-risk individuals are identified, effective risk control is achieved in only a fraction of cases.

These alarming statistics underscore the critical need for enhanced screening and public awareness efforts to identify and manage these prevalent risk factors at an early stage. There is an urgent need for a more comprehensive approach to the diagnosis and management of comorbidities in patients with CVD (17). The lack of a holistic approach can have serious consequences. For example, renal and metabolic disorders, which are often detectable with simple blood and urine tests, may go undetected and silently progress alongside CVD (18). More specifically, chronic kidney disease (CKD) is strongly associated with heart diseases, which are the leading cause of death among CKD patients. This condition affects one in ten people in Poland, yet most are unaware of it because it develops asymptotically in its early stages. Low detection rates in the initial phases of CKD significantly limit the effectiveness of prevention and treatment of CV complications. Therefore, early diagnosis of CKD is crucial, as delayed diagnosis can significantly increase the risk of adverse health outcomes and premature mortality (19).

Finally, when it comes to the detection of genetically-driven CVD, the ability to test target individuals in Poland is often challenged by limited accessibility to diagnostics, shortage of clinical geneticists and inconsistent reimbursement practices (20).

¹ In general, primary prevention efforts are designed to reduce the risk of disease onset through population-level education and awareness initiatives that primarily focus on managing risk exposure, especially by targeting behavioural determinants of health, as well as metabolic risk factors. Robust evidence shows that early screening and detection of CVD are more cost-effective than later-stage detection and diagnosis (73). Similarly, secondary prevention aims to reduce the risk of recurrent acute events and complications in individuals already diagnosed with CVD, utilising lifestyle changes, therapeutic management and regular monitoring (46).

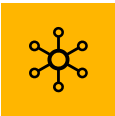


Challenge 2:

Discontinuation of national programmes and initiatives

Experts emphasise that a lack of awareness, as well as the inconsistent implementation and discontinuation of screening and therapeutic management programmes, such as POLKARD (2017-2021), Kordian (2019-2023) and have led to significant fragmentation in CVD management (21, 22, 23). These disruptions have undermined the continuity of care and increased inequity in access to essential services among different regions and population segments, particularly impacting vulnerable communities including those living in

low-income and rural areas. It is reasonable to think that these service disruptions may have caused preventable gaps, especially in early CVD detection and treatment, thus compromising the long-term success of CVD prevention and management efforts.



Challenge 3:

Ineffective coordination of cardiovascular care following screening and diagnosis

Effective coordination of long-term CV care is a challenge in most European countries, and Poland is no exception. Long-term management of chronic CVD can pose challenges at different stages of the patient journey, from diagnosis to post-hospital care (24). For example, when patient pathways are not clearly defined, individuals with a new diagnosis may be unsure of what to do next, largely due to a lack of clear information and guidance (25). Similarly, after an acute event requiring hospitalisation, the lack of a standardised discharge process can result in patients experiencing fragmented access to specialist care and poor coordination across healthcare professionals working in different settings, increasing the risk of complications and rehospitalisation (26). In Poland, this is particularly true for patients treated outside the structured framework of the National Cardiology Network (Krajowa Sieć Kardiologiczna, KSK) – a system

designed to enhance coordination between primary care physicians, cardiologists and specialised centres, currently being piloted in select regions (27) (Figure 5). Outside the National Cardiology Network, coordinated cardiological care is currently available only through the KOS-Zawał programme to patients who have had a heart attack.

In addition, limited access to daytime CV rehabilitation constitutes a significant barrier to improving patient outcomes in Poland (28). Systemic issues, such as high hospitalisation costs and underutilisation of outpatient care, further exacerbate the impact that ineffective coordination of chronic CV conditions can have on the healthcare system (29).

Figure 5. National Cardiology Network centre across Poland

7 out of 16 regions included in the National Cardiology Network Pilot Programme



Source: Narodowy Instytut Kardiologii (2024), Sieć Kardiologiczna (2024)



Challenge 4:

Suboptimal use of data and analytics for decision-making

Despite improvements in the availability of patient data in Poland, significant gaps remain (30). While the Central Statistical Office of Poland (Główny Urząd Statystyczny, GUS) collects national health data, including CVD statistics, experts highlight a lack of integration and standardisation across various data sources, such as hospital records, outpatient care data and patient registries (31).

In particular, experts highlight regional discrepancies in data reporting, insufficient utilisation of electronic health records to track CVD outcomes and the lack of comprehensive national

CVD registries that can provide real-time data on patient outcomes, treatment efficacy and the prevalence of risk factors. The existing infrastructure, including the P1 e-health system² and Individual Patient Accounts³, is not yet fully optimised to capture the detailed data necessary for effective CVD management (32). This fragmented approach results in significant gaps that impede a comprehensive understanding of CVD trends, quality treatment and effective monitoring, and evidence-based policymaking.



² The P1 System (e-zdrowie P1) is an electronic platform for collecting, analysing and sharing digital resources on medical events, which is funded, maintained and overseen by the NFZ.

³ An Individual Patient Account (Indywidualne Konto Pacjenta, IKP) is an online system that allows patients to access and manage their medical records and healthcare-related information.

CVD-related equity

In Poland, the management of CVD can have a significant impact on equitable access to prevention, diagnosis and treatment across the country. Disparities often arise from regional differences, such as the availability of specialised CV care in urban versus rural areas, where residents may have limited access to healthcare facilities and specialists. Socioeconomic factors including income levels and education also play a critical role in health outcomes by influencing an individual's ability to seek medical care and afford treatment. Additionally, the allocation of healthcare resources, including funding for preventive programmes and access to innovative therapies, plays an important role in determining the overall effectiveness of CVD management.



Challenge 5:

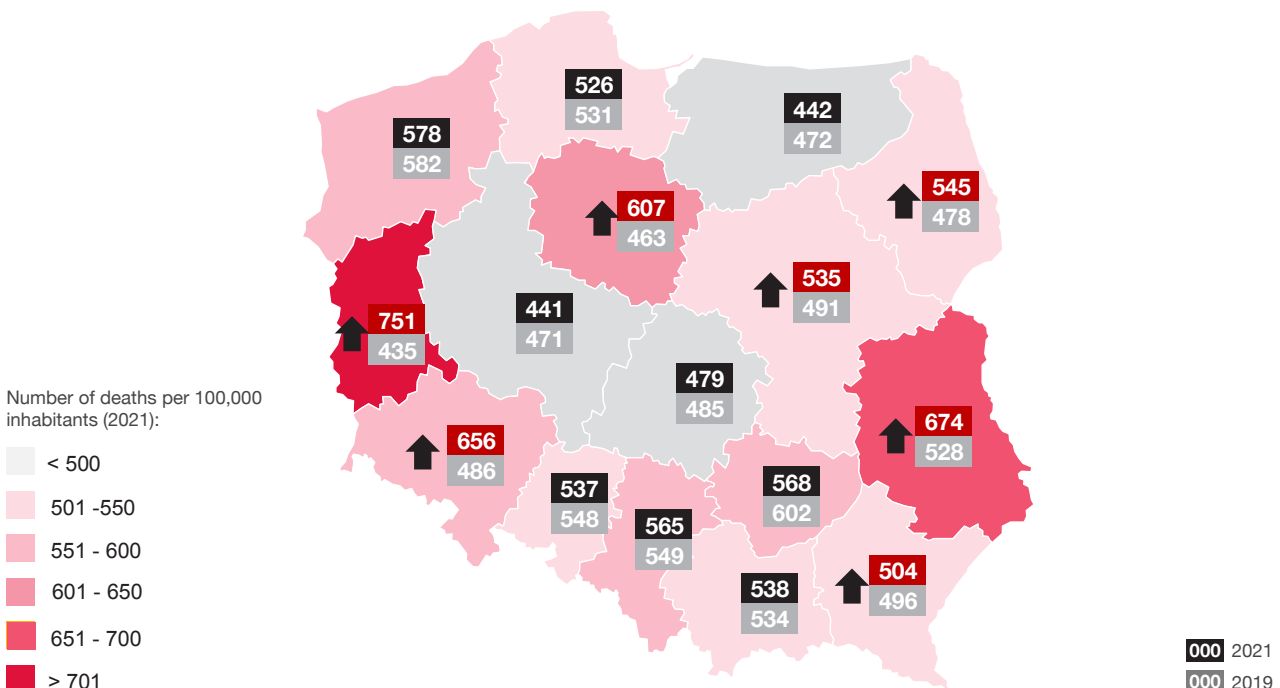
Regional differences in access to and coordination of CV care

Uneven access to healthcare is a critical challenge in Poland, resulting in significant regional disparities in mortality and hospitalisation rates. Even before the COVID-19 pandemic, some regions had higher CV mortality rates than others. Discrepancies in the quality of CV rehabilitation infrastructure were also noted (7). These variations persisted, and in some cases worsened, during the pandemic, significantly disrupting the coordination and accessibility of CV care across different regions (3,33) (Figure 6). While variations may be partly explained by different rules or practices for

assigning causes of death in different voivodships (34), there is also a likely effect related to differences in resources and availability of structured care pathways, especially outside the National Cardiology Network (27). Inequities are particularly evident in eastern Poland, an area that would benefit from new excellence centres and increased availability of trained specialists. Overall, the dynamics related to unequal access to quality care have the potential to create and sustain inequalities across the country.

Figure 6. Evolving patterns in regional mortality rates over time

Change in deaths from CVD by region between 2019 and 2021 (death rate per 100,000 inhabitants)



Additionally, there is a significant disparity between rural and urban areas in Poland (35). Rural communities face a complex web of challenges that hinder access to quality care. These include a shortage of healthcare professionals, limited awareness and education about the latest diagnostic and therapeutic innovations, long travelling distances to major hospitals, limited access to specialised and preventive services, and compromised effectiveness of emergency care (36). Financial barriers, lower income levels and higher transportation costs due to peripheral location exacerbate these challenges (37). Patients in particular perceive the shortage of CVD specialists as a pain point, as confirmed by the 2021 'Patient's Heart' Forum survey conducted by the Polish Cardiac Society (Polskie Towarzystwo Kardiologiczne, PTK). The survey revealed that over 40% of CVD patients are unsatisfied with access to specialists, expressing concerns about the availability of specialist consultations and treatments (38). Access to cardiologists varies widely, even in large cities, leading to waiting times of up to four months for an appointment at an outpatient CV clinic (39).

Taken together, these observations further emphasise the gap between patient needs and the current healthcare system's capacity to meet those needs.





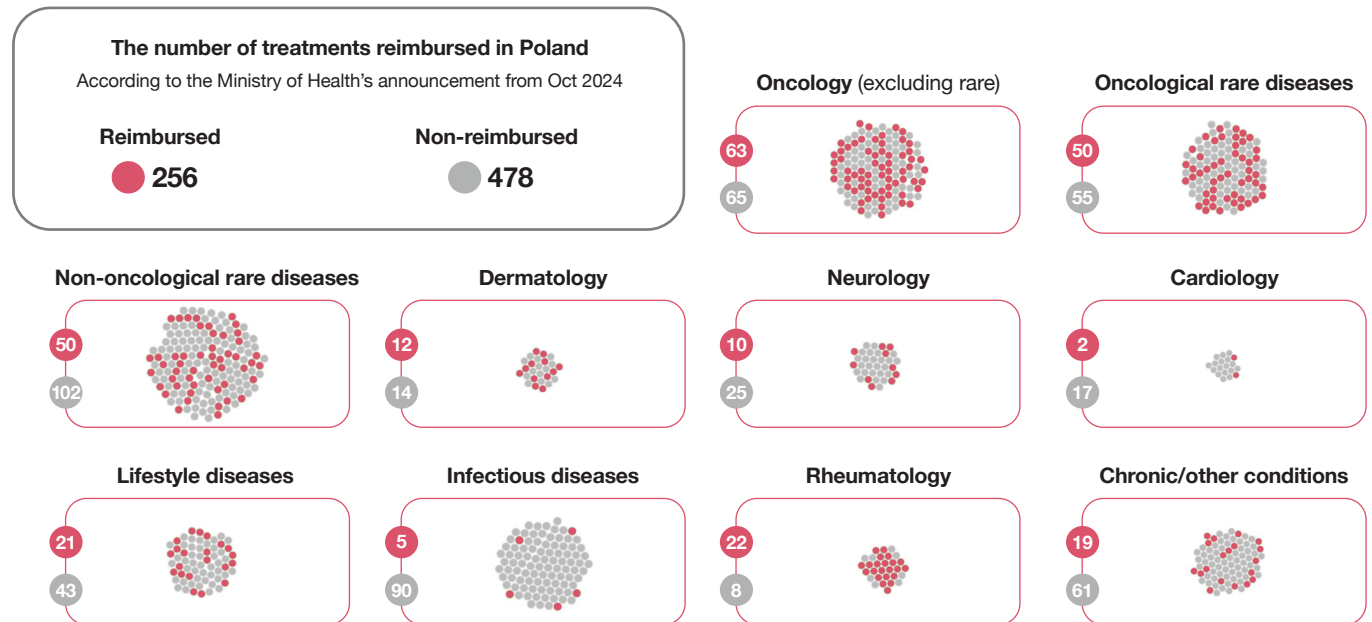
Challenge 6:

Unequal access to treatment and innovative therapies

Despite recent progress, access to reimbursed medicines remains a challenge in Poland. Although the country has improved its ranking to 20th out of 36 European countries in the W.A.I.T. survey, it still faces the longest reimbursement waiting times in the EU, with an average of 804 days from drug registration to reimbursement (40). Although this represents a slight improvement over previous years, it highlights the complexity and duration of the reimbursement process in the country (41). In addition, of the 167 innovative drug technologies registered in the EU between 2019 and 2022, 69 are currently reimbursed in Poland. However, 83% of these technologies are available only to specific patient groups, which limits their access for others who could benefit (74). When it comes to cardiological treatments, the data indicate that, since 2015, only two out of 19⁴ registered therapies have been approved for reimbursement in Poland - one of the lowest rates among all therapeutic areas (Figure 7) (42). The resulting financial burden on patients is significant, with the Polish Cardiac Society survey showing that 65.8% of respondents take two or more fully paid medications a month and 24.2% spend more than 50 0PLN (equivalent to 115 EUR) per month on medications (38).

Finally, experts highlight how differences in health literacy across the population exacerbate systemic challenges. Some individuals, particularly those in the most vulnerable populations, may lack the ability to understand and use health-related information, especially when it comes to making decisions about their own health and navigating the healthcare system. While most patients rate their knowledge of heart and vascular disease as 'average' or 'good,' many still depend on cardiologists for reliable information (38). This highlights the need to improve the way health information is shared to better educate and support patients. Existing patient organisations such as EcoSerce are striving to bridge this gap by empowering CV patients through targeted communication, education and advocacy initiatives (43).

Figure 7. Distribution of reimbursed treatments across disease areas



Source: Polish Reimbursement Radar (PRR) (2024)

⁴ Based on data from the Polish Reimbursement Radar (PRR), covering therapeutic areas such as oncology (excl. rare diseases), oncological rare diseases, non-oncological rare diseases, rheumatology, dermatology, lifestyle diseases, neurology, chronic and other conditions, infectious diseases and cardiology. Within cardiology, indications include angina pectoris, atrial fibrillation, heart failure and other cardiological conditions.



Improving
cardiovascular
health in Poland:
key recommendations



Although a decreasing trend has been observed since the early 1990s, the risk of developing CVD in Poland remains significantly higher than in most Western European countries. Cardiovascular management in Poland deserves critical attention to improve population health and well-being, build a resilient society in the face of future crises and close the gap with the rest of Europe – especially for the younger generations.

Nationwide strategic efforts, such as NPChUK, are paving the way for better outcomes, improved patient experience and effective resource management – particularly by addressing the challenges described in the previous pages. Systematic programmes, such as the ‘KOS – zawał’ (**Case study 1**) and

other pilot programmes, allow the health system to focus on prevention. Moreover, their sustainability has the potential to help address the critical prevalence of CVD and related risk factors in the population (44).

At this stage, Poland has the opportunity to prioritise the implementation of a multi-pronged approach that addresses holistic health policies, investments, financing and education. Experts have come together to agree on a set of recommendations and identify priority areas that are consistent with the actions outlined in the NPChUK. The implementation of these recommendations, discussed below, have the potential to significantly enhance efforts in the fight against CVD (Figure 8).



Case study 1

Polish Managed Care in Acute Myocardial Infraction programme (‘KOS-zawał’)

This secondary prevention programme was established in 2017. Although it remains optional rather than mandatory, it focuses on a fully reimbursed, best-practice pathway to improve post-discharge care for patients with myocardial infarction and to prevent recurrence. The initiative optimises acute intervention, CV rehabilitation and 12-month follow-up care in an outpatient setting. Patient participation in the programme is fully financed by the National Health Fund. The entire treatment process is supervised by a coordinator who supports the patient throughout the programme. Initial results indicate a significant increase in patient participation in CV rehabilitation (from 14% to 98%), a reduction in major CVD events by 40% and high levels of patient satisfaction. Additionally, the KOS-Lipid initiative integrated within the KOS-Zawał programme aims to support the achievement of specific LDL cholesterol reduction levels. This effort promotes more effective treatment of hyperlipidemia (44,70).





Figure 8. Overview of key recommendations

A Improve screening programmes

1. Apply a systematic and long-term approach to contain disease and save lives
2. Ensure continued funding, coordination and monitoring in cardiovascular health management

B Harmonise and strengthen access to and coordination of care after diagnosis

3. Leverage the opportunity provided by the National Cardiology Network to harmonise patient pathways
4. Boost care coordination to improve outcomes

C Unlock the power of data for decision-making

5. Establish a centralised body for CVD data oversight
6. Use real-world data for policymaking

D Align funding with the updated clinical evidence and changing epidemiological trends

7. Ensure regular review and update of reimbursement guidelines
8. Ensure equitable access to all people in need

Improve screening programmes

1. Apply a systematic and long-term approach to contain disease and save lives

Experts agree that Poland needs to prioritise population-level CVD screening programmes, such as the Cardiovascular Disease Prevention Programme (Profilaktyka chorób układu krążenia, CHUK), which aims to reduce morbidity and mortality by 20% through early detection, risk factor reduction and promoting healthy lifestyles (**Case study 2**) (45). Another interesting programme is the planned screening programme for familial hypercholesterolemia (FH)⁵, which will be the second most common programme after the Slovenian programme (75). In fact, when a systematic and long-term approach to screening and prevention is applied nationwide, a population-level effect on health outcomes and people's well-being can be achieved. A recent study conducted by the London School of Economics (46) estimated that achieving risk factor control in 70% of patients with atherosclerotic disease⁶ – for example, by implementing diabetes and heart health checks in primary care, community or workplace settings – would prevent 6,548 fatal CV events each year in Poland, and even up to 9,393 cases if tobacco use was stopped. In addition, an integrated approach involving coordinated efforts by primary care providers, occupational health teams and specialised centres may be particularly effective in achieving better outcomes.

To further increase the potential impact of such initiatives, it is important to enhance awareness and interest in CVD risk management by investing in early CVD education in schools, in line with the NPChUK objectives to implement pro-health education and promote healthy lifestyles among primary and secondary school students. This focus also aligns with the National Health Programme (2021-2025) and the National Oncology Strategy (2020-2030), which include the development of educational materials and pilot programmes to encourage healthy behaviours. An important step forward is the introduction of a dedicated health education curriculum in Polish schools, launching in September 2025. This curriculum will cover key aspects of healthy living, such as risk factor identification, preventive measures and disease awareness, with the aim of effectively embedding these concepts in young minds (47). Furthermore, in October 2024, the Senate of the Republic of Poland adopted a resolution declaring 2025 the Year of Health Education and Prevention. This initiative aims to strengthen efforts to raise public health awareness and promote preventive screenings, physical activity, healthy nutrition and mental hygiene (77).



Case study 2

Cardiovascular Disease Prevention Programme (CHUK)

The Cardiovascular Disease Prevention Programme (CHUK) in Poland is a screening initiative designed to reduce the incidence and mortality of CVD by targeting individuals aged 35 to 65 years who are at risk of CVD but have not yet been diagnosed. Offered through primary care centres without the need for referral, the programme provides accessible, comprehensive care by assessing lifestyle factors, performing anthropometric measurements and conducting laboratory tests to identify CV risks. Participants receive personalised guidance on lifestyle modifications or further medical intervention as needed. By facilitating early detection and prevention, CHUK plays a critical role in preventing the progression of CVDs and demonstrates how a well-structured, preventive healthcare initiative can have a significant impact on public health (45).

⁵ This programme will be introduced in 2025 as part of the so-called '6-year-old health check,' which could eventually cover up to 300,000 children annually. It is estimated that this programme could help identify up to 27,000 suspected cases of FH.

⁶ Vs a current assumed baseline of 43% and assuming a 90% adherence rate.

2. Ensure continued funding, coordination and monitoring in cardiovascular health management

To achieve sustainable outcomes, it is essential to maintain investment in screening and detection over the long term. In fact, experts emphasise the crucial need for consistent funding, effective coordination and continuous monitoring at the national level to ensure the success and sustainability of health initiatives – including of the NPChUK as a whole. It is not uncommon for CVD screening programmes to be piloted on a relatively small scale and for a limited period, as was recently the case in Poland (**Case study 3**). In this context, the reintroduction of discontinued CVD screening programmes, such as POLKARD and Kordian would be beneficial, especially if they are adapted using evidence from monitoring and evaluation activities. This would enable these programmes to evolve by incorporating newly available evidence on epidemiologic trends and risk assessment methods, as outlined in the NPChUK (48).

The alarming prevalence of CVD requires widespread screening programmes to improve early detection and management in order to prevent costly downstream complications. For example, cardio-renal metabolic syndrome is a complex condition characterised by pathological interactions between obesity, diabetes, CVD and kidney disease, which can trigger a cascade of health problems if left untreated. With up to 90% of the Polish population at risk, proactive screening is crucial to identify those who would benefit from early intervention and lifestyle changes as well as therapeutic interventions (49).

Planned population screening studies under the NPChUK, such as WOBASZ III and WOBASZ-Dzieci Children, as well as genetic testing for children to detect FH, are a step in the right direction and offer hope for significant improvements in this area.



Case study 3

Examples of recent population-level awareness, screening and therapeutic management initiatives.

PROFILAKTYKA 40 PLUS

Profilaktyka 40 PLUS (2023-2025) is a programme of free, preventive examinations for all Poles over the age of 40. It has benefited over 2.5 million people as of July 2023. The diagnostic package offered as part of the programme consists of a series of tests (including blood, glucose and cholesterol), facilitating detection of CVD risk factors among the population.

KORDIAN

The main goal of the *KORDIAN* programme (2019–2023) was to increase awareness of CVD through education and active prevention. Between 2019 and 2023, fifty hospitals participated in the project realised by the Cardinal Stefan Wyszyński Institute of Cardiology in cooperation with the Medical University of Warsaw and the WE Patients Foundation. The programme covered 8 voivodeships divided into 3 macroregions.

POLKARD

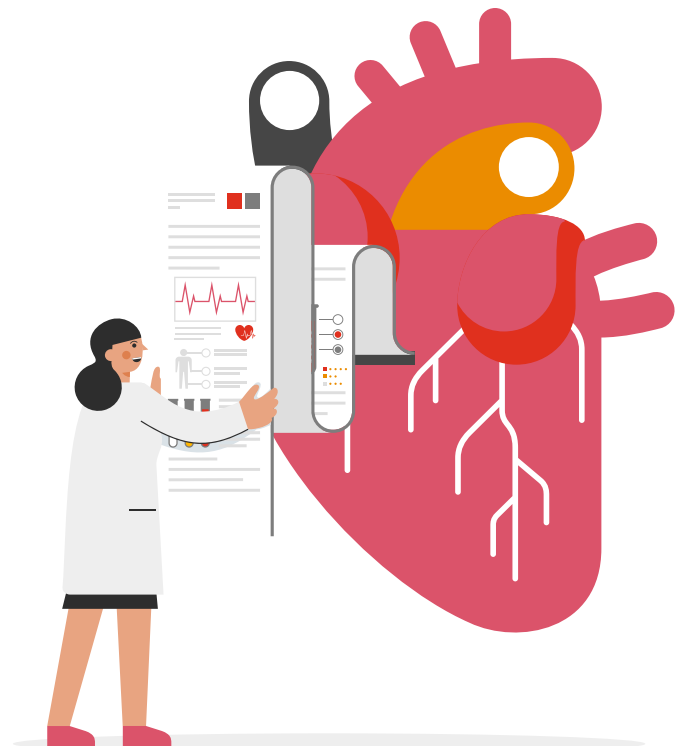
POLKARD (2017-2021), funded by the Ministry of Health, was the sixth edition of the national programme focused on reducing CVD-related mortality in Poland. The programme included funding of medical equipment, prevention, screening, access to treatment and diagnosis, and data collection.

Harmonise and strengthen access to and coordination of care after diagnosis

3. Leverage the opportunity provided by the National Cardiology Network to harmonise patient pathways

The National Cardiology Network, as outlined by the NPChUK, is currently being piloted in several regions to create clear patient pathways by linking primary care physicians, cardiologists and specialised centres (27) (Figure 6). This network streamlines referrals and diagnostic processes, particularly for patients with heart failure or those recovering from a myocardial infarction. The programme's implementation, which was started in 2021 in the Mazowieckie voivodship, has already proved effective, with over 3,800 patients qualifying for specialised CV care - reflecting strong participation and engagement from those needing such services (50). Experts emphasise the importance of leveraging the opportunities provided by the National Cardiology Network to establish standardised patient pathways for newly diagnosed and chronic patients across all regions. The draft amendment to the National Cardiology Network was introduced in October 2024. The proposed amendment to the programme aims to implement the Cardiology Network throughout the country by January 2026 and introduce a new organisational structure and a new model of managing CVD health, which could ultimately accelerate the improvement of coordination in the provision of healthcare services related to CVD. An important element for the new law is also the establishment of the National Cardiology Council, which will be responsible for overseeing the functioning of the National Cardiology Network and recommending key actions aimed at improving the quality of CV care in Poland (78).

Importantly, the NPChUK also plans to establish Centres of Cardiological Excellence (Centra Doskonałości Kardiologicznej) within the National Cardiology Network, i.e. specialised centres focused on providing advanced CV care, research and education. These centres can significantly improve access to CV rehabilitation and quality care across different regions and help reduce disparities in healthcare access and outcomes by standardising practices and facilitating collaboration with local facilities.



4. Boost care coordination to improve outcomes

Integrated care allows various connecting healthcare services to provide patient-centred care. The benefits of integrated care include enhanced communication between providers, timely treatment and improved patient outcomes, which in turn lead to more efficient use of resources and reduced hospital readmissions. This approach is crucial for managing chronic conditions such as CVD, which requires continuous and complex care (51,52).

Evidence of benefits from an integrated care approach to CV health is starting to emerge across Europe. In Sweden, for instance, a coordinated approach centred around primary care providers, with the involvement of specialised cardiology services and long-term care facilities, led to a 10% increase in blood pressure control. This model also led to improvements in lipid control and smoking cessation, highlighting the effectiveness of comprehensive, integrated care in improving CVD outcomes (**Case study 4**) (53). In Slovenia, the successful implementation of integrated care models involving primary care physicians led to a demonstrated reduction in CVD events and mortality by over 50% within 10 years⁷

Recognising the critical importance of integrated care in improving patient outcomes, Poland has initiated efforts to implement such models in various healthcare settings, as evidenced by the establishment of the National Cardiovascular Network. Another recently launched and promising model is Coordinated Care in Primary Care (Opieka Koordynowana w POZ), which assigns a coordinator to each patient to streamline access to specialists. While currently implemented in only 30% of facilities (54), early pilot data show encouraging results for CV patients, including reduced reliance on specialised care, increased use of primary care and shorter waiting times for initial consultations (55). Expanding the reach of such integrated care models could be vital to improving CV health outcomes across Poland.

Overall, Poland has an opportunity to leverage existing resources and programmes to achieve a truly integrated system: effective coordination of the upcoming Healthcare Education programme, the new screening program My Health,⁸ coordinated care initiatives in primary care, the National Cardiology Network and other planned and ongoing initiatives can pave the way towards a streamlined and effective patient journey.



Case study 4

The Impact of Integrated Care in Sweden's QregPV Register

The QregPV register in Sweden demonstrates significant benefits of integrated care in the management of CV risk factors in patients with hypertension. The integrated care model links primary care providers, specialised CV services and long-term care facilities through shared electronic health records, ensuring continuous, personalised care and enhancing treatment adherence. The programme resulted in improved management of CVD and better adherence to treatment protocols, with an increase in blood pressure control from 38.9% to 49.1% between 2010 and 2017. This highlights the effectiveness of integrated care in improving patient outcomes. It is worth noting that, in addition to pharmacological treatment of patients with hypertension, this study demonstrated that primary care also plays an important role in promoting lifestyle modifications. This includes smoking cessation, regular physical activity, weight control and healthy diet, which are key components in reducing the CVD burden (53).

⁷ As reported by experts

⁸ The screening program for adults "My Health" replaces the Profilaktyka 40 PLUS programme starting from May 2025, as communicated by the Ministry of Health in January 2025.

5. Establish a centralised body for CVD data management

Reliable and accessible CVD data are crucial for informed policymaking and effective public health strategies. However, despite some progress, Poland's current approach to CVD data collection remains fragmented and inconsistent, hindering effective analysis and decision-making. To address this issue, experts agree on the need to establish a dedicated, centralised agency for CVD data management. This body would be responsible for collecting, analyzing and disseminating health-related data and statistics throughout

the country. Similar initiatives are taking place in other European countries; for example, the Institute of Health Information and Statistics of the Czech Republic adopts a model that provides public access to health-related data through a centralised portal (**Case study 5**).



Case study 5

Institute of Health Information and Statistics of the Czech Republic

The Institute of Health Information and Statistics of the Czech Republic (IHIS CR) is responsible for collecting, analysing and disseminating health-related data and statistics in the country. Some of the unique features of the IHIS CR include:

- **Comprehensive Data Collection:** IHIS CR collects a wide range of health-related data, including information on healthcare facilities, healthcare professionals, health expenditures, health outcomes and health determinants. This comprehensive data collection allows a holistic understanding of the healthcare system's performance.
- **National Health Information System:** IHIS CR operates the National Health Information System (NHIS), which serves as a central repository for health data in the country. The NHIS integrates data from various sources, such as health insurance companies, healthcare providers and public health agencies, ensuring a unified and standardised approach to data collection and management.
- **Health Information Access:** the IHIS CR provides access to health-related information primarily through reports and statistical publications that are made available to the public, healthcare professionals, policymakers and researchers. It also ensures that aggregated and anonymised data are accessible for research and public health analysis, aligning with strict data protection regulations.
- **Research and Analysis:** the IHIS CR conducts research on various health topics, aiming to generate evidence-based insights to support healthcare decision-making. This includes monitoring health trends, evaluating healthcare interventions and conducting health surveys and studies.
- **International Collaboration:** the IHIS CR actively participates in international collaborations and initiatives, such as with the World Health Organisation and the Organisation for Economic Cooperation and Development. This allows for the exchange of knowledge and best practices, and the harmonisation of health information systems across countries.

Overall, the IHIS CR plays a crucial role in providing accurate and up-to-date health information and statistics in the Czech Republic, supporting evidence-based decision-making as well as promoting transparency and accountability in the healthcare system (71,72).

Initial efforts in this direction in Poland are exemplified by the recently piloted Regional Centres for Digital Medicine, supported by the Medical Research Agency (Agencja Badań Medycznych, ABM). These centres aim to create a network of repositories and a nationwide database of resources to ensure consistent data collection and processing across various institutions (56).

In the context of CV health, the Polish National Register of Familial Hypercholesterolemia (FH) stands out as a prime example of an efficient and effective registry. This registry successfully collects comprehensive patient data from different medical institutions across Poland and has significantly advanced the understanding of this condition (**Case study 6**).

Additionally, the aforementioned draft of National Cardiology Network legislation proposes the introduction of an electronic Cardiology Care Card (elektroniczna Karta Opieki Kardiologicznej eKOK), intended to serve as a universal and standardised source of information for patients with CVD.

In summary, a centralised repository would ensure consistency in how data are collected and analysed across regions and healthcare providers, thereby improving the reliability and comparability of CVD statistics nationwide. It would also improve access to data for researchers, policymakers and other relevant stakeholders, fostering innovation, knowledge sharing and ultimately informed decision-making.



Case study 6

National Register of Familial Hypercholesterolemia (FH)

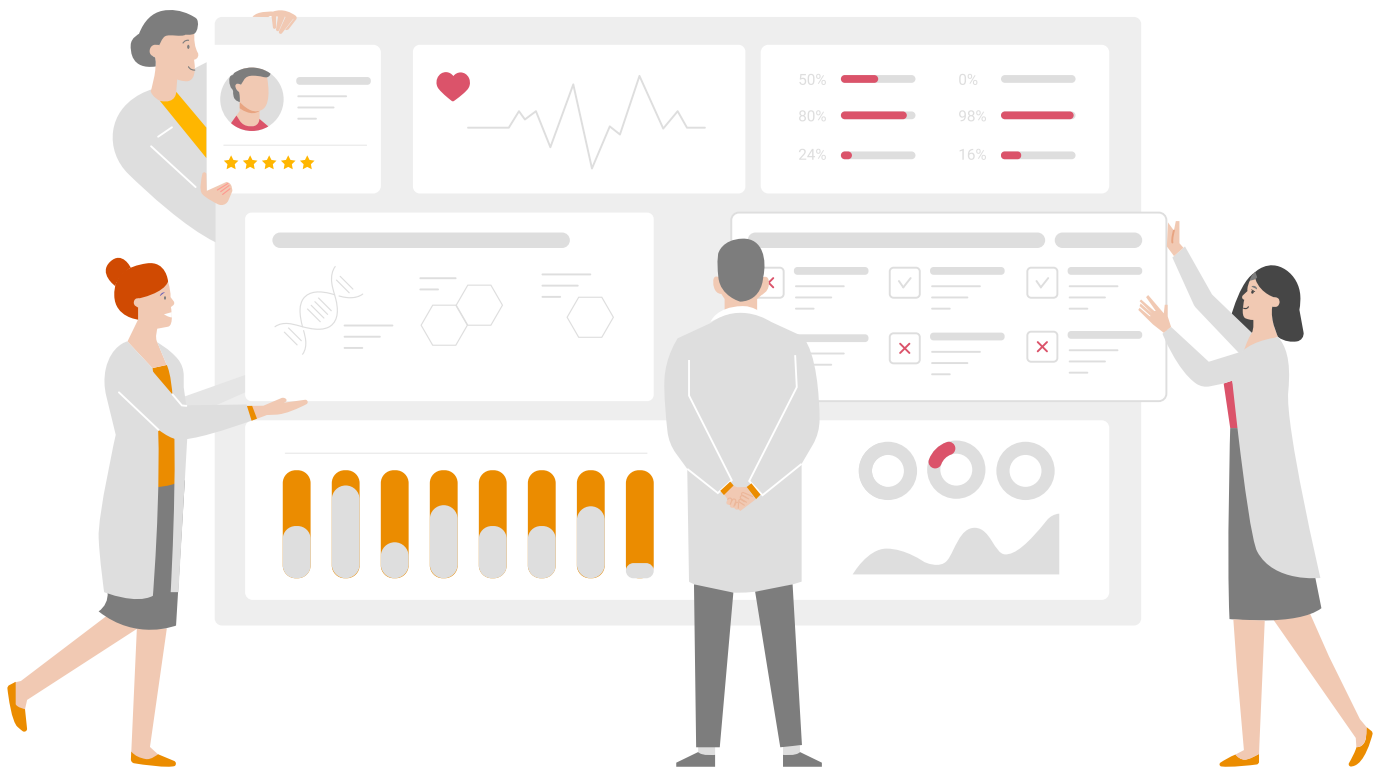
The National Register of Familial Hypercholesterolemia (*Krajowy Rejestr Hipercholesterolemii Rodzinnej*) at the University Clinical Center in Gdańsk is a comprehensive and well-functioning system that collects detailed, patient-specific data from various medical institutions across Poland. This registry compiles information on patients diagnosed with FH, an inherited condition leading to dangerously high cholesterol levels. The data collected provides valuable insights into the natural history of the disease, the effectiveness of treatments and the overall management of FH. The registry is critical to improving the diagnosis, treatment and long-term care of patients with FH by focusing on clinical data. This is particularly important given the low diagnosis rate of FH in Poland – currently estimated at 6%, despite concerted efforts over the past 15 years (62).



6. Use real-world data for policymaking

Evidence-based policymaking involves using the best available research, data and evaluations to inform and guide policy decisions. This process entails systematically gathering and analysing relevant information to assess the potential impacts and effectiveness of various policy options. In CV health especially, evidence generation may prove complex and resource-intensive, as CVDs are largely invisible and the risk of severe sickness builds up slowly over time – unlike in other disease areas where disease may progress in a rapid and debilitating fashion. Population-level evidence is now emerging supporting the benefits of systemic initiatives, early detection and sustained secondary prevention.

Therefore, close collaboration and exchange between various stakeholders, such as policymakers, researchers, and healthcare professionals, is crucial to improve the effectiveness of refined healthcare policies. Additionally, when comprehensive, integrated data are available, policymakers can consider both historical and predictive data related to epidemiology, socioeconomic determinants and population health behaviours to make informed policy decisions that ultimately improve public health outcomes and enhance the effectiveness of CVD management strategies.



Align funding with the updated clinical evidence and changing epidemiological trends

7. Ensure regular review and updating of reimbursement guidelines

Regular review of guidelines and the growing body of health economic data on CVD therapies is critical to efficient resource allocation and maximising patient benefit. By integrating the latest evidence and best practices, healthcare providers can optimise treatment strategies and improve patient outcomes.

Experts recommend a regular review of the existing body of evidence, potentially in combination with a benchmarking of access and reimbursement status against other European countries. This approach would help ensure that patients in Poland benefit from optimal access to primary and secondary prevention, as well as key treatments, especially when updated and tailored clinical guidelines are made available to physicians. From this perspective, an interesting example comes from the Polish Lipid Association, which regularly develops updated clinical guidelines in collaboration with other scientific societies (57). Similar initiatives are being undertaken by the Polish Cardiac Society in collaboration with the European Society of Cardiology (ESC). Moreover, as

part of the NPChUK, diagnostic and therapeutic standards for selected conditions have been developed and will be applied in the diagnosis and treatment of patients within the new National Cardiology Network programme. Overall, these initiatives aim to improve patient access to effective and safe treatments, while also helping to manage healthcare costs through regular review and evaluation.

The NPChUK programme highlights the need to expand the list of reimbursed CVD drugs (which currently lags behind other European countries) (40,42), implement innovative health services and improve the overall quality of cardiac care. In addition, the NPChUK's efforts to improve CVD care include upgrading medical equipment, modernising healthcare facilities and investing in state-of-the-art procedures and telemedicine. These initiatives highlight the urgent need for increased public funding to improve access to advanced treatments, raise standards of care and reduce regional disparities in CVD care.

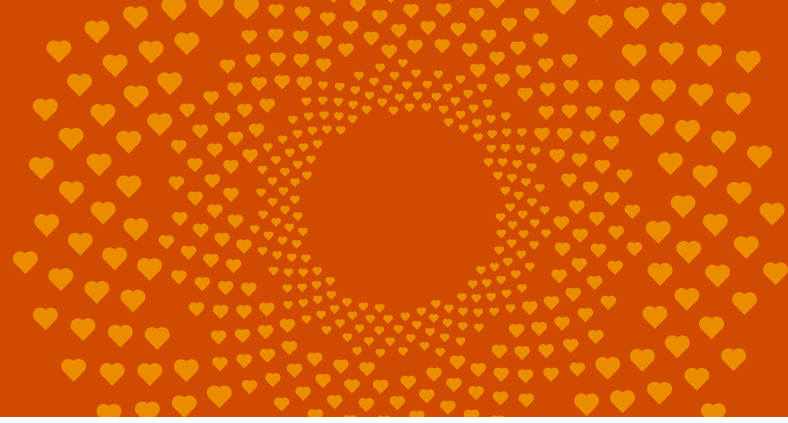
8. Ensure equitable access to all people in need

Experts recognise that many people in Poland face high out-of-pocket costs for treatment (38). Limited funding creates significant barriers to accessing care, especially for vulnerable patients with comorbidities or low health literacy. The 'Decalogue of Polish Cardiology for 2023-2025,' issued by the Polish Cardiac Society, advocates for essential changes, including timely reimbursement for proven procedures and establishing a fast-track process for

new medical devices and drug technologies. Additionally, the Polish Cardiac Society, in coordination with the Polish Lipid Association, is calling for expanded access to genetic testing, which currently faces limitations and inconsistent reimbursement policies in Poland. This was also highlighted in 2023, which was the Year of the Fight Against Hypercholesterolemia (76).

Synergies with European initiatives





CVD is a major public health challenge both in Poland and across Europe. EU-wide initiatives play a pivotal role in shaping the local implementation of improved screening and prevention strategies across member states. The goal of the EU's health strategy, the EU4Health Programme 2021-2027, is to reduce premature mortality from non-communicable diseases, including CVDs, by 30% by 2030. This strategy emphasises prevention, health promotion and the strengthening of health systems, targeting modifiable risk factors such as smoking, physical inactivity, unhealthy diet, obesity and excessive alcohol consumption, which together contribute to a significant proportion of deaths in Europe (58).

European stakeholders and multilateral alliances support broadly the enhancement of investments around CVH, as summarized by the 2024 Council conclusions on the improvement of CVH in the EU, which call on EU Member States to adopt CVH measures from screening to treatment and rehabilitation. As part of the recommendations, the Council of the EU encourages to focus on both primary and secondary prevention, also through cardiovascular health checks. This may include the coverage of evidence-based screenings aimed detecting key modifiable risk factors and therefore enhancing "early detection of conditions such as hypertension, heart rhythm disturbances, diabetes, kidney disease, or lipid metabolism disorders" (59). In addition, initiatives such as the European Health Data Space aim to create a secure ecosystem of rules, standards, and practices that will enable individuals, healthcare professionals and decision makers across EU countries to utilise health data effectively (60). In the CV space, the expansion of the EuroHeart project is essential to generate relevant data, improve surveillance, foster cross-country collaboration and establish common standards to improve CVD care (61).

Poland's NPChUK, spanning from 2022 to 2032, aligns closely with these EU goals, aiming to reduce CVD morbidity and mortality, enhance the quality of life for patients and bring Polish health indicators closer to EU averages. Poland's commitment to improving patient outcomes, integrating various aspects of care and addressing prevention at all stages of CVD is evident in its initiatives. A key example is the Acute Myocardial Infarction programme ('KOS-zawał'), which optimises acute intervention, CV rehabilitation and 12-month follow-up care in an outpatient setting. This programme serves as a model for other European countries in tackling the challenge of equitable access to CVD prevention and care.

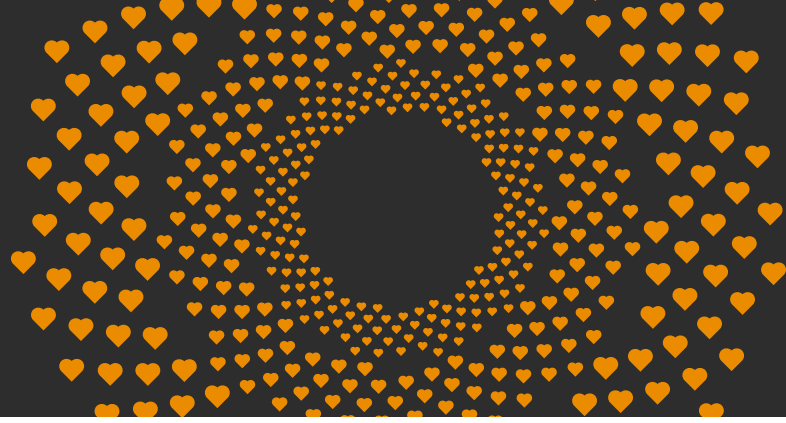
In addition, Poland's comprehensive approach to FH management, exemplified by the National Register of Familial Hypercholesterolemia and participation in the European Atherosclerosis Society FH-Study Collaboration, sets a benchmark in Europe (62). Moreover, the Polish Lipid Association demonstrated leadership by being among the first in Europe and the first in Central and Eastern Europe to recommend lipoprotein(a) measurements in 2021 for specific patient groups at risk of CVD (63,64).

While different approaches coexist in different European countries, Poland focuses on detailed patient management and genetic diagnosis, aiming to strengthen its position in these areas. (65,66).

In light of the Polish presidency of the European Council, Polish stakeholders have a unique opportunity to promote CVD prevention and care on the EU agenda (67), as urged by all those actors supporting the for the development and implementation of the European Cardiovascular Plan (68). In this context, Polish experts will present a proposal for a European Plan for Prevention during Poland's EU presidency. This plan aims to leverage the best practices from healthcare systems in Central and Eastern European countries, with a particular focus on optimising the model for CVD prevention (69).

The current alignment between Polish health initiatives and EU priorities presents a significant potential for further integration of national and EU health strategies, particularly in the area of CVD. This alignment could lead to more cohesive and impactful policies across the region, with Poland potentially taking a leading role in piloting and implementing these initiatives, thereby setting a precedent for other member states.

Conclusion



This report has identified the multifaceted challenges in the management of CVD in Poland, highlighting both the commonalities with broader EU trends and country-specific issues. Like many EU countries, Poland faces a high prevalence of CVD risk factors, inequitable access to healthcare services and significant regional disparities in health outcomes. These challenges have been further exacerbated by the COVID-19 pandemic, which disrupted the coordination and accessibility of CV care.

A common theme in Poland is the struggle to achieve effective disease prevention and early detection, with systemic gaps in screening and public awareness continuing to impede progress. Additionally, the management of chronic CVD conditions remains suboptimal, with a continued

focus on treating acute events rather than implementing comprehensive preventive strategies. Poland also faces unique challenges. Significant regional disparities in healthcare infrastructure and outcomes are particularly pronounced, as is the fragmentation of health data systems. The inconsistency of healthcare delivery across the country, with some regions lagging behind in both prevention and quality of care, highlights the need for targeted interventions to address these specific weaknesses.

In response to these challenges, many initiatives and programmes have been implemented in recent years. To support and accelerate the implementation of these initiatives and mitigate these challenges, experts recommend developing health policies focusing on four key goals:

A Improve screening programmes

1. Apply a systematic and long-term approach to reducing disease and saving lives by introducing multi-year programmes with planned strategic objectives. It is important to ensure the legal stability of these plans to avoid changes due to political factors.
2. Ensure continued funding, coordination and monitoring of CV health management.

B Harmonise and strengthen access to and coordination of care after diagnosis

3. Leverage the opportunity provided by the National Cardiology Networks to harmonise patient pathways.
4. Boost care coordination to improve outcomes.

C Unlock the power of data for decision-making

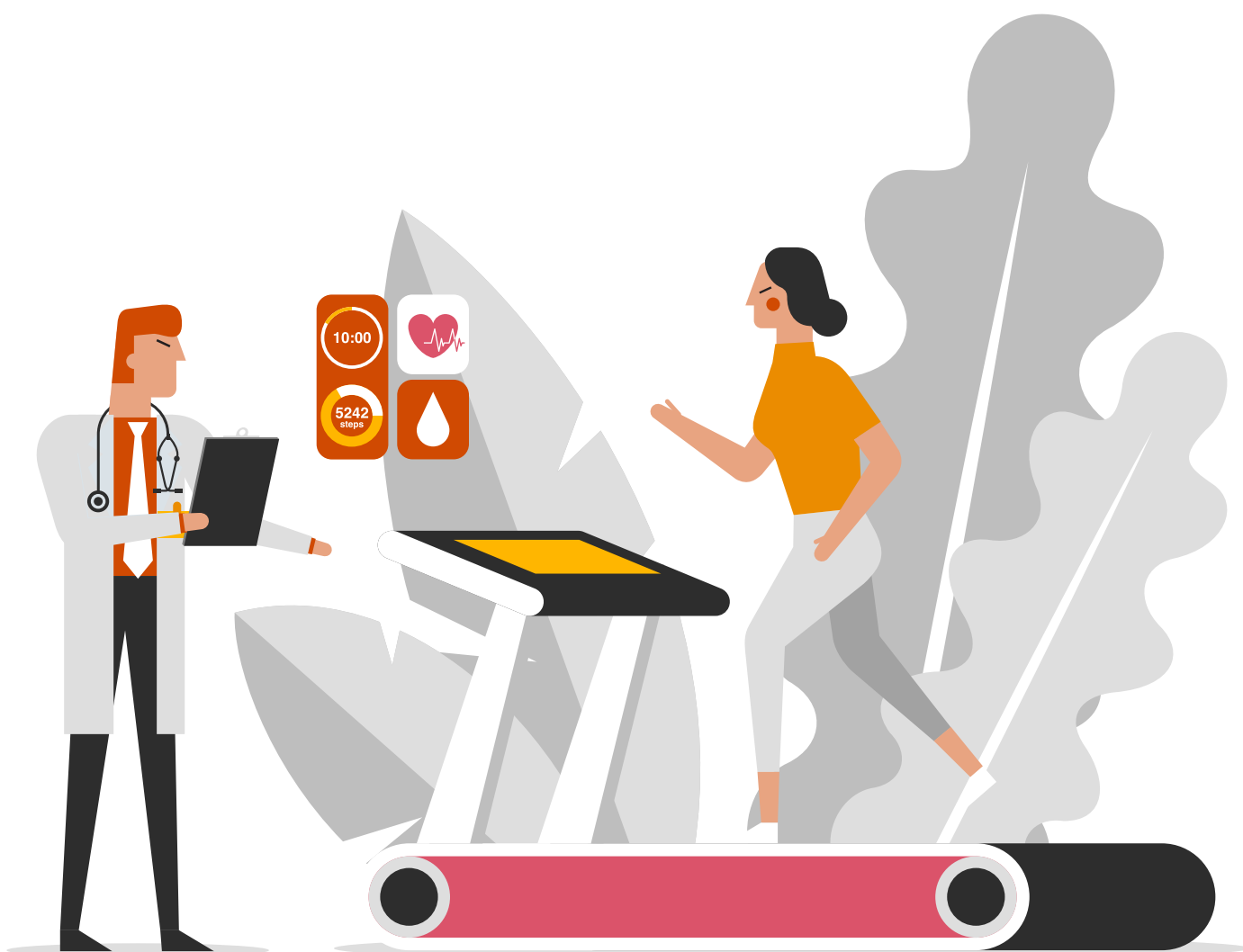
5. Establish a centralised body for CVD data management. Create institutional and financial foundations for the continuous collection and updating of real-world data.
6. Use real-world data for policymaking.

D Align funding with the updated clinical evidence and changing epidemiological trends

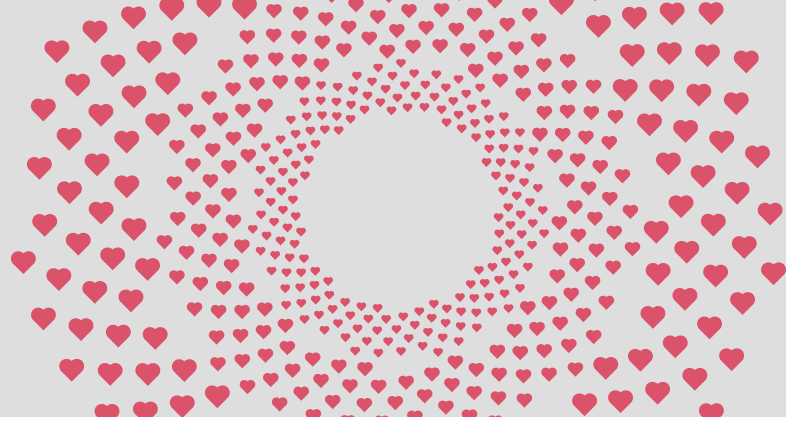
7. Ensure regular review and updating of reimbursement guidelines.
8. Ensure equitable access for all people in need. Introduce full transparency in the decision-making process concerning the reimbursement policy for medications and medical devices.

By adopting these recommendations, Poland can optimise the National Cardiology Network under the NPChUK and ensure equitable access to high-quality CV care across all regions. Enhanced integration of health data, expanded screening programmes and improved CV infrastructure, particularly in underserved areas, are key to bridging the current gaps. In addition, Poland has a unique opportunity to use its presidency of the European Council to promote the development of evidence-based and transformative CVD policies that will benefit all Europeans.

In conclusion, while Poland shares many of the CVD-related challenges that are common across the EU, its unique healthcare landscape requires tailored solutions that address regional disparities and systemic weaknesses. By tackling both the shared and specific challenges outlined in this report, Poland can significantly improve CV health outcomes and better align its healthcare system with EU standards.



About this research



This report documents the results of an expert roundtable discussion held in Warsaw on 5 June 2024. The roundtable was made possible with the support of the EFPIA Cardiovascular Health Platform in collaboration with the Polish Employers' Union of Innovative Pharmaceutical Companies – INFARMA. The roundtable brought together a diverse group of stakeholders, including representatives from the Polish Ministry of Health, public institutions, patient organisations, academia, professional societies and the pharmaceutical industry (see Acknowledgements).

Before the roundtable, two key issues were identified as priorities through secondary research and initial expert consultations conducted by PwC: 1. CVD screening and prevention; and 2. CVD-related equity.

Following the roundtable, PwC consolidated the discussion outcomes and identified key areas and recommendations for future action. These recommendations were jointly validated by representatives from EFPIA and INFARMA, as well as the experts attending the roundtable. Additionally, relevant scientific and grey literature was consulted to further support the validation process.

The final draft of this report was developed by PwC, and then reviewed and finalised in October 2024 by incorporating feedback from all roundtable participants, EFPIA and INFARMA representatives.



Acknowledgements

This report has been written by:

Natalia Bilo, Health Industries, PwC Switzerland

Claudia Vittori, Health Industries, PwC Switzerland

We thank the following experts for their contribution to the roundtable discussion and assessment of cardiovascular health in Poland:

Prof. Maciej Banach

Polish Lipid Association

Maciej Miłkowski

Formerly of the Ministry of Health

Prof. Krzysztof Chlebun

Medical University Gdańsk

Prof. Agnieszka Pawlak

Polish Heart Failure Society

Prof. Robert Gil

Polish Cardiac Society

Prof. Piotr Pruszczyk

Medical University of Warsaw

Monika Kaczmarek

Polish Diabetes Association

Prof. Krystian Wita

Medical University of Silesia

Prof. Magdalena Krajewska

Polish Nephrological Society

Prof. Adam Witkowski

Polish Institute of Cardiology

Prof. Rajmund Michalski

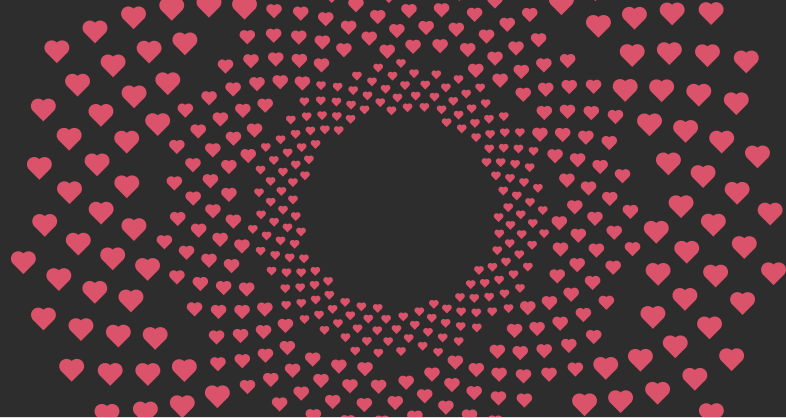
Polish Nephrological Association 'My Kidney'

Agnieszka Wołczenko

Polish Heart and Vascular Diseases Association 'EcoSerce'

We are grateful to EFPIA and INFARMA representatives for their input and support throughout the study. In addition, we thank Paweł Oleszczuk, Julia Otwinowska, and Przemysław Kurlandt for the support in research and the fruitful collaboration as well as Mariusz Ignatowicz for the roundtable moderation, and PwC Poland overall for the kind hospitality.

Bibliography



1. Poland: Country Health Profile 2023. 2023 Dec 15 [cited 2024 Aug 5]; Available from: https://www.oecd-ilibrary.org/social-issues-migration-health/poland-country-health-profile-2023_f597c810-en
2. Sokolska JM, Ponikowski P. Global Rounds: Poland. *Circulation* [Internet]. 2024 Jan 16 [cited 2024 Aug 5];149(3):174–6. Available from: <https://www.ahajournals.org/doi/10.1161/CIRCULATIONAHA.123.063673>
3. Statistics | Eurostat [Internet]. [cited 2024 Aug 5]. Available from: https://ec.europa.eu/eurostat/databrowser/view/demo_mlexpec/default/table?lang=en
4. Główny Urząd Statystyczny / Obszary tematyczne / Ludność / Statystyka przyczyn zgonów / Umieralność w 2021 roku. Zgony według przyczyn - dane wstępne [Internet]. [cited 2024 Aug 5]. Available from: <https://stat.gov.pl/obszary-tematyczne/ludnosc/statystyka-przyczyn-zgonow/umieralnosc-w-2021-roku-zgony-wedlug-przyczyn-dane-wstepne,10,3.html>
5. Mensah GA, Habtegiorgis Abate Y, Abbasian M, Abd-Allah F, Abdollahi A, Abdollahi M, et al. Global Burden of Cardiovascular Diseases and Risks, 1990-2022. *J Am Coll Cardiol* [Internet]. 2023 Dec 19 [cited 2024 Oct 1];82(25):2350–473. Available from: <https://pubmed.ncbi.nlm.nih.gov/38092509/>
6. Luengo-Fernandez R, Walli-Attaei M, Gray A, Torbica A, Maggioni AP, Huculeci R, et al. Economic burden of cardiovascular diseases in the European Union: a population-based cost study. *Eur Heart J*. 2023;44(45).
7. Narodowy Programme Chorób Układu Krążenia na lata 2022-2032 - Ministerstwo Zdrowia - Portal Gov.pl [Internet]. [cited 2024 Aug 5]. Available from: <https://www.gov.pl/web/zdrowie/narodowy-programme-chorob-ukladu-krazenia2>
8. Towards a new normal | PwC Switzerland [Internet]. [cited 2024 Aug 5]. Available from: <https://www.pwc.ch/en/insights/health-industries/towards-a-new-normal.html>
9. Roth GA, Mensah GA, Johnson CO, Addolorato G, Ammirati E, Baddour LM, et al. Global Burden of Cardiovascular Diseases and Risk Factors, 1990-2019: Update From the GBD 2019 Study. *J Am Coll Cardiol* [Internet]. 2020 Dec 22 [cited 2024 Aug 5];76(25):2982–3021. Available from: <https://pubmed.ncbi.nlm.nih.gov/33309175/>
10. Kotseva K, Wood D, De Backer G, De Bacquer D, Pyörälä K, Keil U. Cardiovascular prevention guidelines in daily practice: a comparison of EUROASPIRE I, II, and III surveys in eight European countries. *The Lancet*. 2009;373(9667).
11. Cowzdrowiu - Wydatki NFZ 2023: na świadczenia wydano o 7 mld zł mniej niż planowano. Kuleje profilaktyka, stomatologia i... [Internet]. [cited 2024 Oct 9]. Available from: <https://cowzdrowiu.pl/aktualnosci/post/wydatki-nfz-2023-na-swiadczenia-wydano-o-7-mld-zl-mniej-niz-planowano>
12. Centrala NFZ - Aktualności / Aktualności / Narodowy Fundusz Zdrowia (NFZ) – finansujemy zdrowie Polaków [Internet]. [cited 2024 Aug 19]. Available from: <https://www.nfz.gov.pl/aktualnosci/aktualnosci-centrali/poradnik-pacjenta-profilaktyka-40-plus-bezplatne-badania-bez-skierowania,8632.html>
13. Siedem rzeczy, których nie wiecie, a które pokazał Narodowy Test Zdrowia Polaków 2023 [Internet]. [cited 2024 Aug 19]. Available from: <https://www.medonet.pl/narodowy-test-zdrowia-polakow,siedem-rzeczy--ktorych-nie-wiecie--a-ktore-pokazal-narodowy-test-zdrowia-polakow-2023,artykul,65170865.html>
14. Józwiak JJ, Studziński K, Tomasiak T, Windak A, Mastej M, Catapano AL, et al. The prevalence of cardiovascular risk factors and cardiovascular disease among primary care patients in Poland: results from the LIPIDOGRAm2015 study. *Atheroscler Suppl*. 2020;42.
15. Pająk A, Szafraniec K, Polak M, Polakowska M, Kozela M, Piotrowski W, et al. Changes in the prevalence, treatment, and control of hypercholesterolemia and other dyslipidemias over 10 years in Poland: The WOBASZ study. *Pol Arch Med Wewn*. 2016;126(9).
16. Zdrojewski T, Solnica B, Cybulska B, Bandosz P, Rutkowski M, Stokwiszewski J, et al. Prevalence of lipid abnormalities in Poland. the NATPOL 2011 survey. *Kardiol Pol*. 2016;74(3).
17. CKM Syndrome is a cascade of diseases that feed off each other. “It all starts with diet and lifestyle” [Internet]. [cited 2024 Sep 26]. Available from: <https://www.rynekzdrowia.pl/Polityka-zdrowotna/Syndrom-CKM-to-kaskada-wzajemnie-napedzajacych-sie-chorob-Wszystko-zaczyna-sie-od-diety-i-stylu-zycia,256173,14.html>
18. de Boer IH, Khunti K, Sadusky T, Tuttle KR, Neumiller JJ, Rhee CM, et al. Diabetes Management in Chronic Kidney Disease: A Consensus Report by the American Diabetes Association (ADA) and Kidney Disease: Improving Global Outcomes (KDIGO). *Diabetes Care*. 2022;45(12).

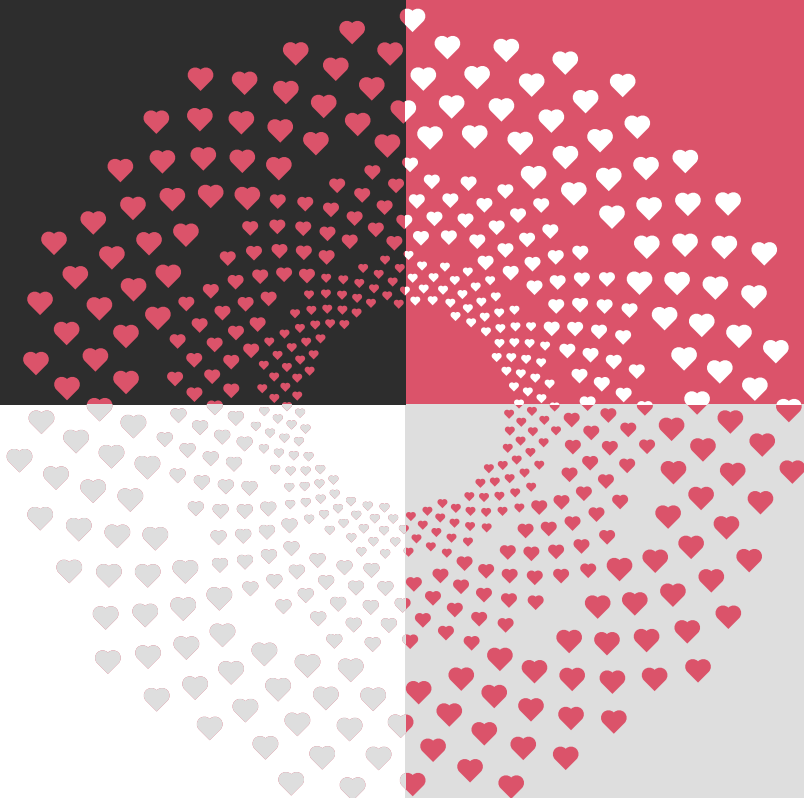
-
19. Levin A, Stevens PE, Bilous RW, Coresh J, De Francisco ALM, De Jong PE, et al. Kidney disease: Improving global outcomes (KDIGO) CKD work group. KDIGO 2012 clinical practice guideline for the evaluation and management of chronic kidney disease. Vol. 3, Kidney International Supplements. 2013.
-
20. Biernacka EK, Osadnik T. Rola badań genetycznych w kardiologii. Kwartalnik NAUKA [Internet]. 2024 Jul 5 [cited 2024 Aug 5];(2). Available from: <https://www.nauka-pan.pl/index.php/nauka/article/view/1075>
-
21. Narodowy Instytut Kardiologii - Państwowy Instytut Badawczy - Informacja o zakończeniu realizacji Programu Kordian [Internet]. [cited 2024 Aug 5]. Available from: <https://www.ikard.pl/instytut/aktualnosci/informacja-o-zakonczeniu-realizacji-programu-kordian.html>
-
22. POLKARD Cardiovascular Disease Prevention and Treatment Programme for 2017-2021 - Ministry of Health - Gov.pl Portal [Internet]. [cited 2024 Aug 5]. Available from: <https://www.gov.pl/web/zdrowie/programme-profilaktyki-i-leczenia-chorob-ukladu-sercowo-naczyniowego-polgard-na-lata-2017-2020>
-
23. Programme Profilaktyka 40 PLUS | Pacjent [Internet]. [cited 2024 Aug 27]. Available from: <https://pacjent.gov.pl/programme-profilaktyczny/programme-profilaktyka-40-plus>
-
24. Nessler J, Kozierkiewicz A, Gackowski A, Ponikowski P, Straburzyńska-Migaj E, Uchmanowicz I, et al. Kompleksowa opieka nad chorymi z niewydolnością serca w Polsce: propozycje rozwiązań organizacyjnych. Kardiologia Pol. 2018;76(2).
-
25. W medycynie pracy królują "papier i pieczęć". Eksperti apelują o zmiany i więcej obowiązkowych badań [Internet]. [cited 2024 Aug 19]. Available from: <https://www.rynekzdrowia.pl/Polityka-zdrowotna/W-medycynie-pracy-kroluja-papier-i-pieczatka-Eksperti-apeluja-o-zmiany-i-wiecej-obowiazkowych-badan,258907,14.html?mp=promo>
-
26. Failure Policy Network H. Heart failure policy and practice in Europe: Poland. [cited 2024 Aug 27]; Available from: www.hfpolicynetwork.org/
-
27. Krajowa Sieć Kardiologiczna już w 7 województwach - Ministerstwo Zdrowia - Portal Gov.pl [Internet]. [cited 2024 Aug 5]. Available from: <https://www.gov.pl/web/zdrowie/krajowa-siec-kardiologiczna-juz-w-7-wojewodztwach>
-
28. Paweł Kaźmierczak: barierą w opiece nad pacjentami po zawale jest dostępność do rehabilitacji [Internet]. [cited 2024 Aug 27]. Available from: <https://www.rynekzdrowia.pl/Polityka-zdrowotna/Pawel-Kazmierczak-bariera-w-opiece-nad-pacjentami-po-zawale-jest-dostepnosc-do-rehabilitacji,256501,14.html>
-
29. Hospitalizacje w niewydolności serca generują najwyższe koszty. Co może to zmienić? – debata i komentarz wiceministra Macieja Miłkowskiego ► - Menedżer Zdrowia – Termedia [Internet]. [cited 2024 Aug 27]. Available from: <https://www.termedia.pl/mz/Hospitalizacje-w-niewydolnosc-serca-generuja-najwyzsze-koszty-Co-moze-to-zmienic-debata-i-komentarz-wiceministra-Macieja-Milkowskiego-,42636.html>
-
30. Countries covered by the HSPM platform [Internet]. [cited 2024 Aug 27]. Available from: <https://eurohealthobservatory.who.int/monitors/health-systems-monitor/countries-hspm/hspm/poland-2019/organisation-and-governance/patient-empowerment>
-
31. Sowada C, Sagan A. Health Systems in Transition Poland Health system review. 2019 [cited 2024 Aug 5];21(1). Available from: www.healthobservatory.eu
-
32. System e-zdrowie (P1) | Centrum e-Zdrowia [Internet]. [cited 2024 Aug 5]. Available from: <https://www.cez.gov.pl/pl/nasze-produkty/e-zdrowie-p1>
-
33. Moryson W, Kalinowski P, Kotecki P, Stawińska-Witoszyńska B. Changes in the Level of Premature Mortality in the Polish Population Due to Selected Groups of Cardiovascular Diseases before and during the Pandemic of COVID-19. J Clin Med [Internet]. 2023 Apr 1 [cited 2024 Aug 27];12(8):2913. Available from: [/pmc/articles/PMC10144974/](https://pubmed.ncbi.nlm.nih.gov/4144974/)
-
34. Wojtyński B, Jankowski K, Zdrojewski T, Opolski G. Regional differences in determining cardiovascular diseases as the cause of death in Poland: Time for change. Kardiologia Pol. 2012;70(7).
-
35. Studziński K, Tomasiak T, Windak A, Banach M, Wójtowicz E, Mastek M, et al. The differences in the prevalence of cardiovascular disease, its risk factors, and achievement of therapeutic goals among urban and rural primary care patients in Poland: Results from the LIPIDOGRAM 2015 study. J Clin Med. 2021;10(23).
-
36. Prusaczyk A, Karczmarsz S, Bogdan M, Żuk P, Oberska J. Family medicine in rural areas-perspectives and development opportunities Medycyna rodzinna obszarów wiejskich-perspektywy i możliwości rozwoju. 2022 [cited 2024 Aug 20]; Available from: <http://dx.doi.org/10.12775/JEHS.2022.12.11.008>
-
37. Ucieklak-Jeż P, Bem A. Availability of health care in rural areas in Poland. Problems of Small Agricultural Holdings / Problemy Drobnych Gospodarstw Rolnych. 2018;4:117–31.
-
38. Cowzdrowiu - Kardiologii nadal brakuje koordynowanej opieki i skuteczniejszych narzędzi diagnostycznych [Internet]. [cited 2024 Aug 14]. Available from: <https://cowzdrowiu.pl/aktualnosci/post/pacjenci-kardiologiczni-ocenili-system-opieki-medycznej-jak>
-
39. Najnowsze dane z NFZ. Kolejki rosną: 153 dni do gastroenterologa, 190 do endokrynologa [Internet]. [cited 2024 Oct 1]. Available from: <https://www.rynekzdrowia.pl/Finanse-i-zarządzanie/Najnowsze-dane-z-NFZ-Kolejki-rosna-153-dni-do-gastroenterologa-190-do-endokrynologa,262235,1.html>
-
40. Newton M, Stoddart K, Travaglio M, Troein P. EFPIA Patientes W.A.I.T. Indicator 2022 Survey. IQVIA. 2023;
-
41. Poland rises from 21st to 20th place in European WAIT survey - MedExpress.pl [Internet]. [cited 2024 Aug 27]. Available from: <https://www.medexpress.pl/en/events-campaigns/poland-promoted-from-21-to-20-place-in-european-survey-wait/>

-
42. Polski Radar Refundacji [Internet]. [cited 2024 Aug 27]. Available from: <https://gapv4.eu/polskiradar/>
-
43. HOME PAGE - Ogólnopolskie Stowarzyszenie Pacjentów ze Schorzeniami Serca i Naczyn" EcoSerce" [Internet]. [cited 2024 Oct 1]. Available from: <https://ecoserce.pl/>
-
44. Programme KOS – zawał - Scanmed [Internet]. [cited 2024 Aug 5]. Available from: <https://scanmed.pl/badania/programme-kos-zawal/>
-
45. Profilaktyka chorób układu krążenia (CHUK) | Pacjent [Internet]. [cited 2024 Aug 5]. Available from: <https://pacjent.gov.pl/programmey-profilaktyczne/programme-profilaktyki-chorob-ukladu-krazenia-chuk>
-
46. Gill J, Miracolo A, Politopoulou K, Jayawardana S, Carter A, Apostolou E, et al. How can we Improve Secondary Prevention of CVD? 2024 [cited 2024 Aug 14]; Available from: <https://doi.org/10.21953/lse.f81e9y7znu1>
-
47. Edukacja zdrowotna w szkołach od 2025 roku. Ruszają prace przygotowawcze - Ministerstwo Edukacji Narodowej - Portal Gov.pl [Internet]. [cited 2024 Oct 9]. Available from: <https://www.gov.pl/web/edukacja/edukacja-zdrowotna-w-szkolach-od-2025-roku-ruszaja-prace-przygotowawcze>
-
48. Narodowy Instytut Kardiologii - Państwowy Instytut Badawczy - Karta ryzyka score [Internet]. [cited 2024 Aug 28]. Available from: <https://www.ikard.pl/karta-ryzyka-score.html>
-
49. Czy potrafimy skutecznie leczyć zespół sercowo-nerkowo-metaboliczny? | Choroby układu krążenia - mp.pl [Internet]. [cited 2024 Oct 1]. Available from: <https://www.mp.pl/pacjent/choroby-ukladu-krazenia/aktualnosci/355255,czy-potrafimy-skutecznie-leczyc-zespol-sercowo-nerkowo-metaboliczny>
-
50. Narodowy Instytut Kardiologii - Państwowy Instytut Badawczy - Prezes Rady Ministrów Mateusz Morawiecki i Minister Zdrowia Adam Niedzielski w Narodowym Instytucie Kardiologii [Internet]. [cited 2024 Aug 28]. Available from: <https://www.ikard.pl/instytut/aktualnosci/pilotaz-krajowej-sieci-kardiologicznej-kolejne-województwa-w-programmeie.html>
-
51. Johri M, Beland F, Bergman H. International experiments in integrated care for the elderly: a synthesis of the evidence. *Int J Geriatr Psychiatry* [Internet]. 2003 Mar 1 [cited 2024 Aug 29];18(3):222–35. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK69752/>
-
52. Ski CF, Cartledge S, Foldager D, Thompson DR, Fredericks S, Ekman I, et al. Integrated care in cardiovascular disease: a statement of the Association of Cardiovascular Nursing and Allied Professions of the European Society of Cardiology. *European Journal of Cardiovascular Nursing* [Internet]. 2023 Jul 19 [cited 2024 Aug 29];22(5):e39–46. Available from: <https://dx.doi.org/10.1093/eurjcn/zvad009>
-
53. Bager JE, Mourtzinis G, Andersson T, Nätman J, Rosengren A, Björck S, et al. Trends in blood pressure, blood lipids, and smoking from 259 753 patients with hypertension in a Swedish primary care register: results from QregPV. *Eur J Prev Cardiol* [Internet]. 2022 Feb 19 [cited 2024 Aug 29];29(1):158–66. Available from: <https://dx.doi.org/10.1093/eurjpc/zwab087>
-
54. Ponad 60 proc. POZ-ów nie realizuje opieki koordynowanej. "NFZ musi ułatwiać nawiązywanie współpracy z innymi specjalistami" - Puls Medycyny [Internet]. [cited 2024 Sep 26]. Available from: <https://pulsmedycyny.pl/medycyna/medycyna-rodzinna/ponad-60-proc-poz-ow-nie-realizuje-opieki-koordynowanej-nfz-musi-ulatwiac-nawiazywanie-wspolpracy-z-innymi-specjalistami/>
-
55. 3.2 Raport okresowy POZ Plus nr 4 Analiza wdrożenia programu zarządzania chorobą POZ Plus w grupie rodzinowej kardiologia.
-
56. Poland joins league of world leaders in digital medicine - News Medical Research Agency [Internet]. [cited 2024 Aug 20]. Available from: <https://abm.gov.pl/en/news/255,Poland-joins-league-of-world-leaders-in-digital-medicine.html>
-
57. Banach M, Burchardt P, Chlebus K, Dobrowolski P, Dudek D, Dyrbuś K, et al. PoLA/CFPiP/PCS/PSLD/PSD/PSH guidelines on diagnosis and therapy of lipid disorders in Poland 2021. Vol. 17, *Archives of Medical Science*. 2021.
-
58. EU4Health programmeme 2021-2027 – a vision for a healthier European Union - European Commission [Internet]. [cited 2024 Aug 5]. Available from: https://health.ec.europa.eu/funding/eu4health-programmeme-2021-2027-vision-healthier-european-union_en
-
59. Council of the European Union, Conclusions 15315/24 on the improvement of cardiovascular health in the European Union (Approved by the General Secretariat of the Council on 14 November 2024). Available from: <https://data.consilium.europa.eu/doc/document/ST-15315-2024-INIT/en/pdf>
-
60. European Health Data Space - European Commission [Internet]. [cited 2024 Aug 20]. Available from: https://health.ec.europa.eu/ehealth-digital-health-and-care/european-health-data-space_en
-
61. Wallentin L, Gale CP, Maggioni A, Bardinet I, Casadei B. EuroHeart: European Unified Registries On Heart Care Evaluation and Randomized Trials: An ESC project to develop a new IT registry system which will encompass multiple features of cardiovascular medicine. *Eur Heart J* [Internet]. 2019 Sep 1 [cited 2024 Aug 20];40(33):2745–9. Available from: <https://dx.doi.org/10.1093/eurheartj/ehz599>
-
62. Lewek J, Konopka A, Starostecka E, Penson PE, Maciejewski M, Banach M. Clinical Features of Familial Hypercholesterolemia in Children and Adults in EAS-FHSC Regional Center for Rare Diseases in Poland. *Journal of Clinical Medicine* 2021, Vol 10, Page 4302 [Internet]. 2021 Sep 22 [cited 2024 Aug 29];10(19):4302. Available from: <https://www.mdpi.com/2077-0383/10/19/4302/htm>
-
63. Dyrbuś K, Kułaczowska Z, Konsek K, Nowowiejska-Wiewióra A, Trzeciak P, Skrzypek M, et al. Lipoprotein(a) and its impact on cardiovascular disease – the Polish perspective: design and first results of the Zabrze-Lipoprotein(a) Registry. *Archives of Medical Science* [Internet]. 2024 Aug 4 [cited 2024 Oct 1];20(4):1069–76. Available from: <https://www.archivesofmedalscience.com/Lipoprotein-a-and-its-impact-on-cardiovascular-disease-the-Polish-perspective-design,188294,0,2.html>

-
64. Sosnowska B, Lewek J, Adach W, Mierczak K, Bielecka-Dąbrowa A, Szosland K, et al. The prevalence, patients' characteristics, and hyper-Lp(a)-emia risk factors in the Polish population. The first results from the PMMHRI-Lp(a) Registry. *Prog Cardiovasc Dis*. 2024 Aug 25;
-
65. Cífková R, Bruthans J, Wohlfahrt P, Hrubeš Krajčoviechová A, Šulc P, Jozifová M, et al. Longitudinal Trends in Severe Dyslipidemia in the Czech Population: The Czech MONICA and Czech Post-MONICA Study. *J Cardiovasc Dev Dis* [Internet]. 2023 Aug 1 [cited 2024 Aug 29];10(8). Available from: <https://pubmed.ncbi.nlm.nih.gov/37623341/>
-
66. Raslova K, Donicova V, Gonova K, Klabnik A, Tichy L, Bridges I, et al. Detecting familial hypercholesterolemia: An observational study leveraging mandatory universal pediatric total cholesterol screening in Slovakia. *J Clin Lipidol*. 2024 Mar 29;
-
67. European Commission unblocks funds for Poland from the National Recovery Plan - Ministry of Justice - Gov.pl website [Internet]. [cited 2024 Aug 20]. Available from: <https://www.gov.pl/web/justice/european-commission-unblocks-funds-for-poland-from-the-national-recovery-plan>
-
68. Cardiovascular health: urgent action needed on EU's #1 killer [Internet]. [cited 2024 Oct 9]. Available from: <https://www.efpia.eu/news-events/the-efpia-view/blog-articles/cardiovascular-health-urgent-action-needed-on-eu-s-1-killer/>
-
69. Co będzie zawierać Europejski Plan dla Prewencji? O inicjatywie mówi prof. Maciej Banach - Polskie Towarzystwo Lipidologiczne [Internet]. [cited 2024 Oct 1]. Available from: <https://ptlipid.pl/blog/2024/09/09/co-bedzie-zawierac-europejski-plan-dla-prewencji-o-inicjatywie-mowi-prof-maciej-banach/>
-
70. Wita K, Wilkosz K, Wita M, Kułach A, Wybraniec MT, Polak M, et al. Managed Care after Acute Myocardial Infarction (MC-AMI) – a Poland's nationwide programme of comprehensive post-MI care - improves prognosis in 12-month follow-up. Preliminary experience from a single high-volume center. *Int J Cardiol*. 2019 Dec 1;296:8–14.
-
71. Homepage - ÚZIS ČR [Internet]. [cited 2024 Aug 5]. Available from: <https://www.uzis.cz/index-en.php>
-
72. Healthcare, incapacity for work statistics methodology | Statistics [Internet]. [cited 2024 Aug 20]. Available from: <https://csu.gov.cz/healthcare-incapacity-for-work-statistics-methodology>
-
73. Oude Wolcherink MJ, Behr CM, Pouwels XGLV, Doggen CJM, Koffijberg H. Health Economic Research Assessing the Value of Early Detection of Cardiovascular Disease: A Systematic Review. Vol. 41, *PharmacoEconomics*. 2023.
-
74. Verbeeck N, Mozolewska P, Angouridi V, Location, location, location – European access to new medicines is a national postcode lottery, 2024 [Internet]. [cited 2024 Oct 1]. <https://www.euractiv.com/section/health-consumers/news/location-location-location-europeans-access-to-new-medicines-is-a-national-postcode-lottery/>
-
75. Kurowska A., Badanie dzieci: w POZ będzie przesiew hipercholesterolemii rodzinnej; 2024 [Internet]. [cited 20.10.2024]. <https://cowzdrowiu.pl/aktualnosci/post/badanie-dzieci-w-poz-bedzie-przesiew-hipercholesterolemii-rodzinnej>
-
76. Krupiński M., 2023 rokiem walki z hipercholesterolemią; 2023. [Internet] [cited 30.10.2024] <https://ptlipid.pl/blog/2023/01/30/2023-rokiem-walki-z-hipercholesterolemia/>
-
77. Senat RP uchwalił rok 2025 Rokiem Edukacji Zdrowotnej i Profilaktyki; 2024; [Internet] [cited 30.10.2024] <https://www.loia.pl/news/4153-senat-rp-uchwalil-rok-2025-rokiem-edukacji-zdrowotnej>
-
78. Krajowa Sieć Kardiologiczna – nowy projekt ustawy zmienia opiekę kardiologiczną w Polsce, 2024 [Internet] [cited 30.10.2024] <https://serwiszoz.pl/aktualnosci-prawne/krajowa-siec-kardiologiczna-nowy-projekt-ustawy-zmienia-opieke-kardiologiczna-w-polsce-8634.html>

About PwC

At PwC, our purpose is to build trust in society and solve important problems. We're a network of firms in 149 countries with more than 370,000 people who are committed to delivering quality in assurance, advisory and tax services. Find out more and tell us what matters to you by visiting us at www.pwc.ch.



Contacts



Dominik Hotz
Managing Partner, Advisory and
Consulting Leader
PwC Switzerland
dominik.hotz@pwc.ch



Claudia Vittori, PhD MPH
Senior Manager
Advisory Health Industries
PwC Switzerland
claudia.vittori@pwc.ch



Paweł Oleszczuk , PhD
Director
Public Sector & Economics
PwC Poland
pawel.oleszczuk@pwc.com

www.pwc.ch/pharma

This publication includes information obtained or derived from a variety of publicly available sources and expert opinions. PricewaterhouseCoopers AG has not sought to establish the reliability of those sources or verified such information. PricewaterhouseCoopers AG does not give any representation or warranty of any kind (whether expressed or implied) as to the accuracy or completeness of the information contained in this publication. This publication has been prepared solely for general informational and discussion purposes. Nothing in this publication should be construed as advice to set up a topic-related project. Recipients of this publication must conduct their own appraisals. Accordingly, regardless of the form of action, whether in contract, tort or otherwise, and to the extent permitted by applicable law, PricewaterhouseCoopers AG, its members, employees and agents do not accept or assume any liability, responsibility or duty of care for any consequences of any person acting, or refraining to act, in reliance on the information contained in this presentation or for any decision based on it.

© 2024 PwC. All rights reserved. In this document "PwC" refers to PricewaterhouseCoopers AG which is a member firm of PricewaterhouseCoopers International Limited, each member firm of which is a separate legal entity.