



WORLD **DIABETES** FOUNDATION

# National Diabetes Strategy

## Republic of Armenia

THE NATIONAL STRATEGY FOR THE PREVENTION OF DIABETES  
MELLITUS AND ITS COMPLICATIONS  
AND THE ACTION PLAN FOR ITS IMPLEMENTATION  
2022-2026

**MINISTER OF HEALTH OF THE REPUBLIC OF ARMENIA**  
**ORDER**

« 04 » March 2022. No 939 - L

Upon Approval:  
**THE NATIONAL STRATEGY FOR THE  
PREVENTION OF DIABETES MELLITUS AND ITS COMPLICATIONS  
AND THE ACTION PLAN FOR ITS IMPLEMENTATION  
2022-2026**

Based on the paragraph 1 of the Order of the Minister of Health  
No. 1458-L of April 26, 2021

I HEREBY ORDER:

- 1.** To approve:
  - 1) The National Strategy for the Prevention of Diabetes Mellitus and its Complications, in accordance with Annex 1,
  - 2) The implementation of the Program of National Strategy for the Prevention of Diabetes Mellitus and its Complications 2022-2026, in accordance with Annex 2.
- 2.** To appoint Mrs. L. Babakhanyan, the Head of the Public Relations Department of the Ministry of Health, to ensure the posting of this order on the official website of the Ministry of Health.
- 3.** To initiate this order the day after its publication.

A. AVANESYAN

# NATIONAL STRATEGY FOR THE PREVENTION OF DIABETES MELLITUS AND ITS COMPLICATIONS

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# Acronyms

<b>DM</b>	Diabetes mellitus
<b>ENMD</b>	Endocrine, nutritional and metabolic diseases
<b>EU</b>	European Union
<b>MoH</b>	Ministry of Health
<b>NCD</b>	Non-communicable diseases
<b>NGO</b>	Non-governmental organization
<b>NHIAC</b>	National Health Information Analytical Center
<b>PHC</b>	Primary health care
<b>RA</b>	Republic of Armenia
<b>SC</b>	Statistics Committee
<b>SDG</b>	Sustainable Development Goal
<b>UN</b>	United Nations
<b>WHO</b>	World Health Organization

# I. INTRODUCTION

1. Paragraph 1 of the Order No. 1458-L of the Minister of Health (April 26, 2021) defines the development of the National Strategy for the prevention of diabetes mellitus (hereinafter referred to as DM) and its complications. This strategy addresses current issues related to the wellness of the DM population of Armenia with specific measures and targets that will be implemented over the coming years.
2. The Strategy sets out measures aimed at early detection and prevention of DM, prevention of its complications, and improvement of the quality of life of patients with DM. It also establishes measures for the adoption of normative documents for developing and approving long-term comprehensive programs aimed at early detection and prevention of DM, as well as prevention of its complications.



## II. EXECUTIVE SUMMARY

**3.** The “National Strategy for Prevention of Diabetes Mellitus and its Complications 2022-2026” addresses the main challenges in the fight against diabetes mellitus and the plan for its resolution. In addition, it sets forth the vision for the National Strategy for 2027-2031 based on the analysis of the current situation and the expected impact of the implemented measures.

**4.** The incidence of diabetes mellitus (DM) and associated mortality have risen steadily in recent years. According to the data published by the National Health Information Analytical Center (NHIAC) and the Statistics Committee (SC) of the Ministry of Health in 2020, the incidence of DM among the population 15 years and older was 429 per 100,000 and increased 2.3 times in 2020 compared to 1990 to 183.6 per 100,000. The proportion of deaths to the total mortality was 1.3%. The mortality rate for 2020 was 16 per 100,000 and has increased 1.1 times compared to the 1990 rate of 14 per 100,000. The DM mortality accounts for 96.8% of deaths recorded in the Endocrine, nutritional and metabolic diseases Chapter.

**5.** Lack of evidence-based guidelines for the medical care and services of patients diagnosed with diabetes mellitus (particularly for the management of DM patients aged 18 and older), lack of cooperation at the national, regional and individual levels of DM management, as well as the absence of a national DM registry, makes it impossible to understand the statistics of complications caused by DM and to provide continuous medical care and services.

**6.** Given the above, the Strategy is aimed at:

- 1)maximizing the well-being and quality of life of patients with DM and their families;
- 2)increasing the effectiveness of early detection of DM, continuous monitoring and treatment of patients;
- 3)reducing the complications of DM and the consequent disabilities;
- 4)increasing the long term efficiency of state budget expenditures, making it more focused and targeted.

**7.** To address the existing challenges, an action plan will be implemented in four directions:

- 1)Improving the institutional system for the prevention, early detection and treatment of diabetes mellitus and its complications, along with patient management;
- 2)Increasing the effectiveness of the prevention and treatment of diabetes mellitus;
- 3)Expanding the knowledge base through training courses and development of educational materials;
- 4)Raising awareness amongst the population of the Republic of Armenia on the prevention, treatment and consequences of diabetes mellitus.

**8.** The multi-vector approach to DM prevention (improving legislation, creating new tools, expanding the knowledge base, raising public awareness, ensuring continuity of care, and monitoring these processes) will enable a pivotal and comprehensive impact on prevention and treatment of DM.

# III. COORDINATION WITH OTHER POLICIES AND INTERNATIONAL AGREEMENTS

**9.** Effective control of diabetes mellitus requires mapping and ongoing coordination of implemented measures. For this purpose, it is necessary to ensure that all actions are mutually agreed upon and are based on the agreements that were made between the international agencies and the state. They also need to correspond to the recent local and international policies. Thus, by joining the program of United Nations (UN) Sustainable Development Goals (SDGs), the Republic of Armenia has committed to work towards achieving these goals by 2030.

**10.** The DM objective is included in Goal 3 (Ensure healthy lives and promote well-being for all at all ages) Target 3.4: “By 2030, reduce premature mortality by one third from non-communicable diseases through prevention and treatment and promote mental health and well-being.” At the same time, reference is made to Target 3.8 (Achieve universal health coverage) Indicator 3.8.1 (Coverage of essential health services: basic coverage of essential services based on tracer interventions that include reproductive, maternal, newborn and child health, infectious diseases, non-communicable diseases and service capacity and access, among the general and the most disadvantaged population). DM is also directly mentioned in Indicator 3.4.1 (Mortality rate attributed to cardiovascular disease, cancer, diabetes or chronic respiratory disease).

**11.** In 2007, the UN General Assembly adopted UN Resolution 61/225, which designated November 14 as “World Diabetes Day,” calling for the adoption of a National Strategy for the Prevention of DM.

**12.** In April 2021, the World Health Organization (WHO) launched the Global Diabetes Compact as a global initiative aiming to boost the efforts of DM prevention and treatment. , DM management is also addressed in the WHO Report on “Combating Non-Communicable Diseases”. To achieve these goals, a National Strategy for the Prevention and Treatment of DM has been developed. The Strategy is one of the key elements in advancing the national agenda for the prevention and control of chronic diseases, especially those based on the new evidence of the socio-economic consequences of chronic diseases.

**13.** The implementation of the DM risk factor prevention strategy may increase the efforts of the Republic of Armenia to achieve the Sustainable Development Goals beyond 2030.

# IV. ONGOING FIGHT AGAINST DM

## IV.1. National level

**14.** National strategies and programs, as well as educational programs, are being developed at the national level to prevent DM and to address the resulting issues. In particular, the Government has adopted a number of policies and legislative acts on non-communicable diseases (NCD), including the “National strategic plans and action plans for the three deadliest diseases: circulatory system (cardiovascular) diseases, malignant neoplasms, and diabetes mellitus, 2012-2018,” “Strategic plan and action item list for the most common non-communicable diseases, 2016-2020,” and “Strategic plans for promoting a healthy lifestyle.” The UN Development Assistance Framework also aims to prevent and control NCDs.

**15.** The primary health care (hereinafter referred to as PHC) medical organizations (including medical unions, polyclinics of medical centers, health centers, rural outpatient clinics, primary health care centers [including their feldsher-midwife stations] and private or group independent family physician practices) provide a free-of-charge treatment of DM for all population groups.

**16.** Doctors working in the endocrinology offices of PHC medical organizations provide free professional counseling to endocrinology patients, as well as organize their treatment and carry out the required laboratory-instrumental diagnostic tests which have been amended by the Order of the Minister of Health and funded by the state.

Nevertheless, the financial resources allocated for the fight against DM are scarce, which makes it impossible to organize the prevention and treatment of the disease with maximum efficiency.

## IV.2. Marz [Regional] Level

**17.** The monitoring of services provided for DM is mainly carried out at the regional level, as well as at the national level. The main challenge at this level is to ensure balanced access and high quality of services across all communities. In order to address this issue, it is necessary to clearly map the RA regional DM-related needs with financial estimation, and to develop annual action plans with clear indicators and a clearly set timetable.

## IV.3. Community Level

**18.** The main problem in urban communities is the poor communication between the community resident and the primary caregiver, since townspeople prefer to visit the relevant inpatient care professionals in anticipation of better services. The main problem in rural communities is the professional potential of the medical staff



of local medical facilities, whose capacities need to be continuously improved.

#### **IV.4. Individual Level**

**19.** As with many other illnesses, diabetic patients have a poor understanding of their health issues, leading to a low degree of patient involvement in medical decision-making. Current evidence-based medicine on the other hand encourages and emphasizes the importance of more active involvement of the patient in decisions and actions related to the disease.

#### **IV.5. Continuous cross-sectoral coordination**

**20.** As in many other areas of public administration, there is no flexible yet sustainable coordination of diabetes-related activities at the national, regional and community levels. It is necessary to improve the existing mechanisms of both the cross-sectoral and inter-agency cooperation in order to make the ongoing fight against DM more efficient.

#### **IV.6. International cooperation**

**21.** In terms of international cooperation, the state's function is to ensure cooperation with interstate, intergovernmental, as well as international donor organizations within the framework of international agreements.

**22.** Proactive and dynamic cooperation, especially with the World Health Organization (WHO) and the World Bank, can help increase the effectiveness of the ongoing fight against DM if the available resources are directed at improving access and quality of the services provided. The World Diabetes Foundation also supports the aforementioned goals. As a mechanism for supporting and activating international cooperation, it is also necessary to expand the list of interstate or intergovernmental agreements, treaties and memoranda, as well as the scope of cooperation with international associations for the adaptation and application of guidelines.

1) DM complications



# V. CURRENT PROBLEMS IN THE FIGHT AGAINST DM AND A RESOLUTION PLAN

## a. Diabetic retinopathy

**23.** DM is one of the most severe problems in contemporary medicine, leading to the disability of thousands of people. Unfortunately, the numbers are growing at an unpredictable rate annually, and the mortality rate among diabetic people is 2-4 times higher than that of people without metabolic problems.

**24.** Diabetic retinopathy is one of the most severe complications of DM, leading to significant vision impairment and even complete vision loss (blindness) in some cases. Depending on the type and severity of DM, on average, 30%-90% of DM patients develop diabetic retinopathy, which leads to the development of disability, especially in working age.

**Goal 1:** By 2026, the quality of ophthalmological services provided in 52 regional polyclinics should have been improved by supplying them with new equipment.

**Goal 2:** By 2026, at least 60 ophthalmologists who are working in the regions should be trained with up to 5 years of practical hands-on work experience.

## b. Diabetic foot syndrome

**25.** One of the important issues in endocrinology is the prevention and treatment of late complications of DM. Timely identification of patients at risk and prophylactic multidisciplinary care can prevent one of the most devastating consequences of the disease – limb amputation.

**26.** DM accounts for about 60% of non-traumatic lower extremity amputations. The majority of postoperative mortality, ranging from 6% to 22%, is associated with treatment by amputation. According to the International Diabetes Federation, diabetic foot care is 5 times more costly than possible DM treatment. The syndrome can result in amputation, as well as in the death from septic necrosis processes.

**27.** When transferred to surgical wards, the disease is already at an advanced stage, accounting for a large number of amputations and lethal outcomes. International best practice suggests that well-organized educational programs and mandatory government support can help reduce the incidence of amputations.

**28.** The foregoing indicates the need for early detection, appropriate treatment, and prevention of complications of diabetic foot syndrome. There is no systematic data on diabetic foot syndrome in Armenia. To date, issues related to diabetic foot prevention, early detection of diabetic neuropathies and angiopathies, and treatment of septic complications in diabetic patients, which may reduce the number of lower limb amputations, have not been resolved.

**29.** It is necessary to effectively coordinate the activities of the “Diabetic foot” departments, medical centers and clinics, as well as DM patient education schools. It is also necessary to coordinate the collaboration between medical professionals involved in the prevention and treatment of DM. These clinics should provide high-quality specialized care and reduce the number of visits of DM patients to the general surgeon of the district polyclinic.

**30.** The main function of diabetic foot clinics is to manage the risk of developing diabetic foot syndrome and to reduce the number of lower limb amputations in DM patients.

**Goal 1:** By 2026, the need to establish diabetic foot clinics should have been assessed.

**Goal 2:** By 2026, at least 30% of DM patients should have been screened for detection of diabetic foot syndrome.

**Goal 3:** By 2026, 6 surgeons should have been trained in the field of “diabetic foot.”

### **c. Cardiovascular complications**

**31.** In 2019, the European Society of Cardiology, in collaboration with the European Association for the Study of Diabetes, issued joint Guidelines on Diabetes, Pre-Diabetes and Cardiovascular Diseases.

**32.** In routine practice, monitoring of patients is insufficient because of:  
1) Lack of awareness of health care providers about the guideline criteria,  
2) Limited access to essential medicines (registration, cost),  
3) Low level of communication between cardiologists and endocrinologists,  
4) Incomplete examination of patients for the diagnosis of cardiovascular diseases.

**Goal 1:** By 2026, the European Society of Cardiology and European Association for the Study of Diabetes Guidelines on Diabetes, Pre-Diabetes and Cardiovascular Diseases should have been adapted.

**Goal 2:** By 2026, an SME-accredited course based on the adapted Guidelines should have been developed.

# VI. HUMAN RESOURCES ENGAGED IN THE FIGHT AGAINST DM

## 1) Physicians

**33.** The human resources engaged in the fight against DM is central to ensure the effectiveness of this fight, especially senior- and mid-level healthcare workers.

**34.** The availability of highly qualified professionals and their even allocation as needed is one of the key issues in the fight against DM.

**35.** As of 2019, the distribution ratio of endocrinologists in RA per 10,000 population has been 1.20, with 1.60 in the capital city of Yerevan (much higher than the average ratio throughout the RA), and a range between 0.23 and 0.54 in the regions. As a result, the uneven distribution of specialists involved in the fight against DM (the number of specialists per 10,000 population is 4 times higher in Yerevan) negatively affects the access to healthcare and medical services.

### **Absolute and Relative Number of Family Doctors and Endocrinologists**

Specialists	Workforce (individuals) operating in inpatient and outpatient medical organizations		Inpatient (hospital) medical organizations		Outpatient (polyclinics, outpatient clinics, dispensaries, consultations) medical organizations	
	Absolute	Relative	Absolute	Relative	Absolute	Relative
Family doctors	621	2.1	8	0.03	613	2.07
Endocrinologists	212	0.94	72	0.32	140	0.62

The existing gap can be partially addressed through a targeted residency curriculum.

**Goal:** By 2026, the number of annual slots for endocrinology within the target clinical residency should have been increased to 5.

## 2) Mid-level healthcare workers

**36.** The role of mid-level healthcare workers in the care and management of DM patients is invaluable. Mid-level healthcare workers provide care to patients through direct contact with them. The “Nursing Development Strategy and the Resulting Action Plan 2022-2026” envisages continuous training of nurses in a specific field, including endocrinology and has been approved by the Order No. 470-L of the Min-

ister of Health on February 4, 2022.

**Goal:** By 2026, at least 50% of endocrinology nurses should have been involved in DM patient management retraining courses.

3) Professional associations

**37.** Professional associations play an important role in the continuous professional development of healthcare workers, improving access to the latest advances in medicine and their application in routine medical practice. In addition, associations play an important role in protecting the rights and interests of healthcare providers. Nevertheless, the lack of a clearly defined plan regarding the structure and further development of professional associations in the RA hinders their participation in policy-making, elaboration of clinical standards, and assessment of professional needs of healthcare workers. Thus, associations do not have the opportunity to participate in responding to these needs appropriately. Very often professional associations are created for short-term purposes within the framework of a single project.

**Goal:** By 2026, the capacities of professional associations combating DM should have been enhanced in terms of the up-to-date methods of prevention and treatment of DM and its complications.

4) Non-medical

**a. Patient, family members**

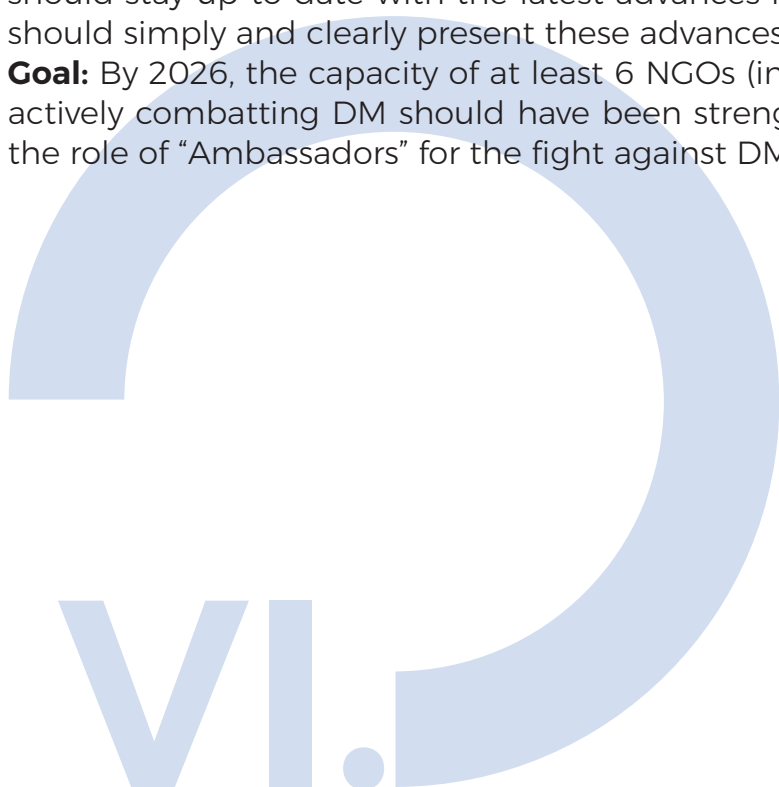
**38.** The patient and their family members play an important role in combating DM and its prevention. Proper diet and physical activity are of special importance. However, public awareness of health issues is low and does not yet allow patients and their relatives to be fully involved in the fight against DM.

**Goal:** By 2026, training courses on diabetes risk factors for family members of 200 DM patients should have been conducted to achieve necessary behavioral changes.

**b. Non-governmental organizations**

**39.** Non-governmental organizations (NGOs) play an important role in public education, awareness raising and patient advocacy, as well as in drafting the sectoral policy and sustaining its accountability. For proper public awareness, the NGOs should stay up-to-date with the latest advances in the medical science of DM and should simply and clearly present these advances to the public.

**Goal:** By 2026, the capacity of at least 6 NGOs (including professional associations) actively combatting DM should have been strengthened and they should assume the role of “Ambassadors” for the fight against DM.



# VII. SUPPLY OF MEDICINES AND EQUIPMENT

**40.** The integration of the RA healthcare sector into the healthcare system of European and other countries imposes new requirements upon specialists (mastering the relevant knowledge base and working methods, continuous professional development, including operational research and study of the changing features of medicinal and parapharmaceutical products, as well as their storage conditions, and provision of compatible drug combinations, etc.).

**41.** One of the paramount objectives of healthcare management is providing counseling to the staff of health care facilities and pharmacies, patients and/or their caregivers on correct combinations, risk of incompatibilities, instructions for use, properties and storage conditions of medicines and parapharmaceutical products (glucometers, strips, tonometers, etc.). Lack of comprehensive information about the aforementioned and non-compliance with this information can have a harmful effect on health and even lead to death of the patient.

Given the above circumstances, it is necessary to conduct appropriate training among specialists.

Goal: By 2026, training courses should have been conducted for at least 60% of the staff involved in the prevention and treatment of DM (on instructions for use, incompatibilities, storage conditions and other properties of medicines and parapharmaceutical products).



# VIII. MENTAL HEALTH

**42.** Factors such as depression and anxiety, especially in the context of progressing COVID-19-related problems, may also increase the risk of developing DM. People with type 1 and type 2 DM are at a higher risk of developing depression, anxiety, and eating disorders. Comorbid mental health illnesses associated with DM can impede continuity of care and, therefore, increase the risk of short-term and long-term complications that can lead to blindness, amputation, stroke, cognitive decline, poor quality of life, and premature death.

**43.** People with DM are 2 to 3 times more likely to develop depression than people without DM. Only about 25% to 50% of people diagnosed with DM who have depression are accurately diagnosed and treated accordingly. Treatment – psychotherapy, pharmacotherapy, or both – are usually very effective. Without treatment, depression often gets worse rather than better.

**Goal:** By 2026, at least 100 endocrinologists and at least 400 family physicians should have been trained to provide mental health counseling to patients diagnosed with DM.



# IX. PREVENTION

## 1) Screening programs

**44.** Since January 2015, the screening stage of the “Disease Prevention and Control” program funded by the World Bank has been launched countrywide, aimed at the prevention and early diagnosis of arterial hypertension, diabetes mellitus and cervical cancer.

During the period from 01-Jan-2015 to 31-Dec-2021, as part of the program, about 948 thousand citizens underwent a fasting blood glucose test and about 1 million 760 thousand citizens underwent screening for high blood pressure.

Screening tests conducted from 01-Jan-2015 to 31-Dec-2021 revealed the following deviations: blood glucose level 6.1 mmol/L and more – 7.4%.

**45.** The above mentioned screening tests significantly increase the effectiveness of DM detection. However, according to international guidelines, measuring blood glucose levels is not sufficient to detect the true prevalence of DM nationwide in order to provide timely preventive treatment.

To solve this problem, it is necessary to expand the types of screening tests conducted to detect DM.

**Goal:** Promote services for testing blood glucose tolerance, glycohemoglobin, low-density lipoprotein (LDL), glomerular filtration rate (GFR) and urine albumin. These tests should be included in the list of state-funded free-of-charge and subsidized medical care and services.

## 2) Pregnancy and DM

**46.** The results of the “Hyperglycemia and Adverse Pregnancy Outcomes” study showed an association between maternal glycemia and adverse pregnancy outcomes for both the mother and the fetus.

**47.** Maternal hyperglycemia leads to the development of diabetic fetopathy. Pregnant women with gestational diabetes, unlike women without carbohydrate metabolism, develop preeclampsia and eclampsia, often leading to the need for a cesarean section. Such patients are more likely to develop DM later in life. Studies have also shown that these children are more likely to develop obesity and type 2 DM throughout their lives, regardless of their obesity risk and genetic predisposition.

**48.** The prevalence of gestational diabetes in pregnant women in different countries is 2-20%, depending on the type of risk factor. These patients may develop DM later in life. Most of these complications can be prevented by early detection of impaired glucose tolerance and good glycemic control during pregnancy. Unfortunately, the Republic of Armenia does not practice proper continuous follow-up control (dispensary check-ups) of women of reproductive age.



## Number of registered pregnant women and number of women with gestational DM, 2020

Total number of pregnant women registered during the year	60,890
Number of women who have completed their pregnancy	38,686
Number of pregnancies with pre-pregnancy or gestational diabetes	130
Number of births complicated by diabetes mellitus during delivery and postpartum	97

**49.** Considering the consequences of DM on the health of pregnant women, both mother and fetus, it is necessary to conduct a mandatory screening examination of all pregnant women and patients with a confirmed diagnosis.

**50.** The proposed measures will allow for reducing perinatal mortality, preventing birth defects, and, therefore, saving money that would be spent on caring for children with disabilities.

**Goal 1:** By 2026, the fasting blood glucose testing of pregnant women should have been included in the list of state-funded free-of-charge and subsidized medical care and services.

**Goal 2:** By 2026, glucometers should have been provided to at least 30% of pregnant women with DM (diagnosed before pregnancy).

**Goal 3:** By 2026, the provision of at least 30% of pregnant women with DM (diagnosed before pregnancy) with at least 5 test strips per day should have been included in the list of state-funded free-of-charge and subsidized medical care and services.



# X. MEASURES ADDRESSING BEHAVIORAL RISK FACTORS AT THE POPULATION LEVEL

**51.** According to the results of STEPS National Study on the prevalence of NCD risk factors conducted by the WHO methodology in 2016, 47.8% of the population aged 18-69 in the RA are overweight and obese, and 21% are physically inactive. Blood glucose measurements showed that the prevalence of glycemia was 5% in the 18-44 age group and 6.7% in the 45-69 age group. Air pollution is becoming an increasingly serious problem worldwide. According to the WHO, traffic-related pollutants are a possible risk factor for developing type 2 diabetes. Alcohol consumption is often seen as a way to overcome social problems. Consuming large amounts of alcohol increases the risk of prediabetic diseases, especially in women, since even moderate alcohol consumption is harmful for them.

**52.** Lack of physical activity is one of the risk factors for type 2 DM. An additional problem is the COVID-19 pandemic, which severely limited access to appropriate sites and facilities for such activities.

**53.** Studies have shown that sleep disorders can lead to metabolic disorders, contributing to insulin resistance and affecting blood glucose levels. In case of sleep abnormalities, glucose metabolism disorders can be detected as early as one week after their onset. Thus, an unhealthy lifestyle can lead to increased insulin resistance and contribute to the development of DM. Social and natural environments and changes in those environments can cause or exacerbate type 2 DM. Vulnerability to such factors is greater among population groups such as women, children and the elderly. Therefore, improved blood glucose control can be achieved through preventive behavioral interventions that do not depend on environmental and social aspects and do not require large financial investments.

Goal: By 2026, educational and awareness-raising measures should have been conducted among at least 300,000 people to reduce behavioral risk factors.

# XI. SCIENCE AND EDUCATION

## 1) **DM Awareness in Secondary School Education**

**54.** Despite efforts to raise awareness by the Ministry of Health and a number of NGOs in recent years, adolescent awareness of DM risk factors remains low. The school curriculum needs to be improved in order to reinforce knowledge about DM in the long term.

Goal: By 2026, carry out activities raising awareness based on evidence-based medicine data on the prevention of DM risk factors among adolescents in 50 secondary schools.

## 2) **University Curricula**

**55.** Academic curricula are becoming obsolete due to the rapid development of healthcare and medicine. This applies to both undergraduate and postgraduate programs. It is necessary to regularly update the curriculum to ensure it is in line with the latest advances in medicine. This will ensure the most effective prevention, treatment and management of DM.

**56.** The basis of postgraduate education is residency in endocrinology and pediatrics. The duration of residency is 2 years.

**57.** Continuing Medical Education (Continuous Professional Development) programs include training programs for endocrinologists and pediatric endocrinologists, as well as nurses.

**58.** Based on the latest advances and recent developments in the field of DM prevention and treatment, it is necessary to revise clinical residency curricula in order to align them with the best international criteria.

Goal: By 2026, the subject “Endocrinology” should have been included in clinical residency curricula for specialties related to endocrinology.

## 3) **DM Patient Schools**

**59.** The peculiarity of DM management is that the patient must independently control the disease throughout his/her life. To do this, the patient must be well aware of all aspects of his/her illness and be able to adjust the treatment depending on the situation. The key to achieving maximum efficiency of the treatment is the patient education, which significantly reduces the number and frequency of hospitalizations.

**60.** Candidates for DM schools are patients who have not yet completed the initial training (primary cycle) or have already completed it (secondary cycle), but need

to maintain and enhance their knowledge and motivation, as well as to obtain up-to-date data on new therapeutic approaches. The schools encourage diabetic patients and ensure their more active involvement in the treatment process.

**61.** In Armenia, there are schools for the education of diabetic patients, where they learn to live with the disease. According to various authors, one school is necessary for every 1,500-3,000 patients. Schools are established on the basis of health organizations providing medical care and services. Given that the number of diabetic patients in Armenia is about 96,000, there should be at least 32 schools throughout the country (depending on the prevalence of DM in the region, one school for every 3,000 patients). However, there are only four of them.

**Goal 1:** By 2026, the existing network of DM schools should have been expanded, increasing their number from 4 to 8.

**Goal 2:** By 2026, the capacity of DM schools should have been strengthened through annual training sessions.



# XII. DIABETES CARE DURING EMERGENCIES

**62.** The COVID-19 pandemic has shown that patients with DM are at high risk, and appropriate and timely response to their care is crucial. Children with diabetes constitute a separate vulnerable group.

**63.** In such situations, PHC health workers play a particularly important role in ensuring the availability and accessibility of medical care and services for patients. In addition, PHC specialists play a considerable role in the prevention and control of complications caused by DM. In this regard, it is crucially important to develop telemedicine and bring existing legislation in line with people-centered policies, in particular in the context of the continuity of care, protection of personal data and access to necessary medicines.

**Goal:** By 2026, 100 family physicians should have been trained for the management of patients with DM using telemedicine tools.



# XIII. CONTINUOUS CARE MODEL

**64.** The most important prerequisite for inpatient and outpatient healthcare facilities, providing medical care and services to diabetic patients is ensuring a favorable outcome of the most common NCD, preventing its complications, and maintaining people's quality of life.

**65.** The treatment effectiveness and its supervision is also one of the most important tools for DM management. For this purpose, it is recommended to introduce the patient treatment planning principle. This principle should set achievable and clearly defined goals using tools for regular monitoring in accordance with modern approaches.

**66.** Another tool for effective patient management is implementing clearly defined processes of preliminary and scheduled medical examinations by narrow specialists in order to prevent complications.

**67.** Within the framework of the Strategy, a procedure for organizing medical care and services for DM patients may be introduced. It will incorporate international best practices and adjust these for use in all areas of Armenia, providing a comprehensive approach to the management of DM at any stage of the disease.

**Goal:** By 2026, a procedure for organizing medical care and services providing effective continuous care for DM patients should be established.



# XIV. ASSESSMENT OF POTENTIAL RISKS HINDERING STRATEGY IMPLEMENTATION

**68.** To implement the measures envisaged by the Strategy, it is necessary to anticipate the possible risks and have a pre-designed risk management and mitigation action plan, as the processes can be slowed down, interrupted or even terminated for a number of reasons.

**69.** One of the manageable risks may be the termination or suspension of the project funding by the state budget or a donor organization. In this case, the risks can be mitigated by prior discussion or arrangement with other possible sources of funding or technical assistance bodies and organizations.

**70.** Other manageable risks include disruption of the training timeline or re-equipping of medical facilities due to the human factor. Therefore, it is necessary to ensure that the targets set are feasible, both in terms of frequency and time frame.

**71.** Other risks include the impact of pandemic restrictions on the implementation of the measures outlined in the Strategy, as well as the tense military situation in the region.



# XV. FIVE-YEAR ACTION PLAN MONITORING AND EVALUATION

- 72.** Given the narrow professional scope of the National DM Strategy, general oversight at the national level should be carried out by a state-approved health authority.
- 73.** The educational programs will be implemented by “Yerevan State Medical University after Mkhitar Heratsi” SNCO and “Academician S. Avdalbekyan National Institute of Health” CJSC.
- 74.** The process of drafting and adopting legislative changes and new procedures should be monitored and evaluated by professional associations and NGOs operating in the field.
- 75.** The activities of NGOs and other representatives of civil society are noteworthy and should be encouraged in terms of monitoring the Strategy implementation.





# XVI. NEXT STEPS (VISION FOR NATIONAL STRATEGY 2027-2031)

**76.** This Strategy defines the pillars for establishing continuity of care and encouraging people-centered approaches. The vision supported by these pillars will be needed to develop an action plan for 2027-2031 that will ensure the logical continuation of the actions, measurable outcomes and reinforcement of the implemented systems set forth in this document.

Thus, it will be necessary to:

- 1) continue screening tests for diabetic foot syndrome among patients with DM bringing the rate down to at least 60% by 2031;
- 2) establish diabetic foot clinics if needed, increasing their number up to at least 5 by 2031;
- 3) expand the coverage of screening testing for gestational diabetes to at least 60% of pregnant women by 2031;
- 4) provide glucometers and test strips intended for them to at least 60% of pregnant women with DM (diagnosed before pregnancy) by 2031;
- 5) increase the number of DM schools to 32 by 2031;
- 6) introduce a mechanism for coordination and support of the DM school network;
- 7) increase the percentage of diabetic patients benefiting from the new diagnostic tests included in the list of state-funded medical care and services to at least 70%;
- 8) continue to equip regional polyclinics with new equipment for the prevention and treatment of diabetic retinopathy;
- 9) provide training for retinopathy to ophthalmologists working in the RA regions with up to 5 years of work experience;
- 10) continue DM patient management training courses for medical staff;
- 11) continue training courses for at least 620 PHC family doctors in telemedicine;
- 12) carry out the work on the development and continuous improvement of the registry of patients with DM;
- 13) continue capacity building of NGOs involved in the fight against DM;
- 14) take measures to prevent and improve care for diabetic nephropathy and neuropathy;
- 15) concentrate the complex cases caused by DM within one scientific-research medical institution;
- 16) continue adaptation of international guidelines and protocols on the latest methods of prevention and treatment of DM and its complications.

## PROGRAM

### NATIONAL STRATEGY IMPLEMENTATION MEASURES FOR THE PREVENTION OF DIABETES MELLITUS AND ITS COMPLICATIONS 2022-2026

Action	Responsible authority	Co-executor	Due date	Expected result (2026)	Funding source
1. Improving the institutional system for the prevention, early detection and treatment of diabetes mellitus and its complications, as well as patient management					
1) Drafting and approval of the Order of the Minister of Health "On approving the composition of the coordinating board for the strategy implementation measures for the prevention of diabetes mellitus and its complications 2022-2026"	Ministry of Health	-	First 10 days of May 2022	DM and its complications prevention strategy measures 2022-2026 have been fully implemented	No funding required
2) The Minister of Health Order approval of diabetes mellitus management guidelines developed by professional associations	Ministry of Health	Professional Associations and NGOs (upon agreement)	2022-2026	Developed guidelines for DM management approved by the Order of the Minister of Health of RA	No funding required
3) Increase in the annual number of slots allocated to endocrinology within the framework of targeted clinical residency (starting point: 1 slot in 2022)	Ministry of Health	Ministry of Education, Science, Culture and Sport of RA (upon agreement)	2022-2026	Allocation of at least one place for endocrinology annually as part of targeted clinical residency	No funding required
4) Include the subject "Endocrinology" in clinical residency curricula for specialties related to endocrinology	Ministry of Education, Science, Culture and Sports	Ministry of Health	2022-2026	The subject "Endocrinology" is included in the clinical residency curricula for specialties related to endocrinology	Other means not prohibited by the RA legislation Donor organizations

Action	Responsible authority	Co-executor	Due date	Expected result (2026)	Funding source
5) Capacity building of NGOs involved in the fight against DM	Ministry of Health	Professional Associations and NGOs (upon agreement)	2022-2026	Six NGOs involved in the fight against DM have been trained in diabetes policy	State Budget Other means not prohibited by the RA legislation Donor organizations
6) Assess the need to create diabetic foot clinics	Ministry of Health	Professional Associations and NGOs (upon agreement)	Third quarter of 2026	Staff members of 4 DM schools are trained	Other means not prohibited by the RA legislation
7) Capacity building of DM schools	Ministry of Health	RA regional administrations (upon agreement) Yerevan Municipality (upon agreement) NGOs (upon agreement)	Third quarter of 2026	There are 8 DM schools in Yerevan and in the regions	State Budget Other means not prohibited by the RA legislation Donor organizations
8) Expansion of DM school network taking into account the ratio of DM patients and the population of the regions	Ministry of Health	RA regional administrations (upon agreement) Yerevan Municipality (upon agreement) NGOs (upon agreement)	Third quarter of 2026	There are 8 DM schools in Yerevan and in the regions	State Budget Other means not prohibited by the RA legislation Donor organizations
9) Include the provision of glucometers for pregnant women with DM (diagnosed before pregnancy) in the list of state-funded free-of-charge and subsidized services	Ministry of Health	-	Third quarter of 2026	At least 30% of pregnant women with DM (diagnosed before pregnancy) are provided with glucometers	State Budget
10) Include the provision of at least 5 test-strips per day to at least 30% of pregnant women with DM (diagnosed before pregnancy) in the list of state-funded free-of-charge and subsidized services	Ministry of Health	-	Third quarter of 2026	At least 30% of pregnant women with DM (diagnosed before pregnancy) are provided with at least 5 test-strips a day	State Budget

Action	Responsible authority	Co-executor	Due date	Expected result (2026)	Funding source
T1) Include blood glucose tolerance diagnostic services for people at high risk for developing DM at least once a year in the list of state-funded medical care and services	Ministry of Health	-	Third quarter of 2026	At least 30% of people at high risk for developing DM have undergone blood glucose tolerance test at least once a year. The test is included in the list of state-funded free-of-charge and subsidized medical care and services.	State Budget Other means not prohibited by the RA legislation Donor organizations
T2) Include glycohemoglobin determination services for DM patients at least twice a year in the list of state-funded medical care and services	Ministry of Health	-	Third quarter of 2026	At least 30% of DM patients have had the opportunity to undergo glycohemoglobin testing at least twice a year. The test is included in the list of state-funded free-of-charge and subsidized medical care and services.	State Budget Other means not prohibited by the RA legislation Donor organizations
T3) Implement a pilot program of DM continuous care model in the region of RA with a large number of DM patients	Ministry of Health	Armenian EyeCare Project Charitable Foundation (upon agreement)	Third quarter of 2026	A procedure for organizing medical care and services for diabetic patients has been implemented for the effective management of their continuous care	State Budget Other means not prohibited by the RA legislation Donor organizations
T4) Include microalbumin determination services for DM patients at least once a year in the list of state-funded medical care and services	Ministry of Health	-	Third quarter of 2026	At least 30% of DM patients have had the opportunity to undergo microalbumin testing at least once a year. The test is included in the list of state-funded free-of-charge and subsidized medical care and services.	State Budget Other means not prohibited by the RA legislation Donor organizations
T5) Include glomerular filtration rate (GFR) determination services for DM patients at least once a year in the list of state-funded medical care and services	Ministry of Health	-	Third quarter of 2026	At least 30% of DM patients have had the opportunity to undergo GFR determination at least once a year. The test is included in the list of state-funded free-of-charge and subsidized medical care and services.	State Budget Other means not prohibited by the RA legislation Donor organizations
T6) Include low-density lipoprotein (LDL) determination service for DM patients with moderate, high and very high risk of cardiovascular diseases at least once a year in the list of state-funded medical care and services	Ministry of Health	-	Third quarter of 2026	At least 30% of DM patients with moderate, high and very high risk of cardiovascular diseases have had the opportunity to undergo LDL determination at least once a year. The test is included in the list of state-funded free-of-charge and subsidized medical care and services.	State Budget Other means not prohibited by the RA legislation Donor organizations

Action	Responsible authority	Co-executor	Due date	Expected result (2026)	Funding source
17) Supply the eye clinics of regional medical centers or polyclinics of RA with new equipment	Ministry of Health	Armenian EyeCare Project Charitable Foundation (upon agreement)	Third quarter of 2026	52 regional polyclinics have been supplied with new equipment	State Budget Other means not prohibited by the RA legislation Donor organizations
18) Adapt the European Society of Cardiology and European Association for the Study of Diabetes Guidelines on Diabetes, Pre-Diabetes and Cardiovascular Diseases	Ministry of Health	Professional Associations and NGOs (upon agreement)	December 2022	The Guidelines on Diabetes, Pre-Diabetes and Cardiovascular Diseases developed by European Society of Cardiology and European Association for the Study of Diabetes are adapted	Other means not prohibited by the RA legislation Donor organizations
<b>2. Improving the effectiveness of DM prevention and treatment</b>					
1) Carry out screening tests for detection of diabetic foot syndrome in DM patients	Ministry of Health	Professional Associations and NGOs (upon agreement)	2023-2026	At least 30% of DM patients have undergone screening test for detection of diabetic foot syndrome	State Budget Other means not prohibited by the RA legislation Donor organizations
2) Conduct screening tests for gestational diabetes among pregnant women by measuring fasting plasma glucose levels	Ministry of Health	-	2023-2026	Fasting plasma glucose has been measured in 30% of pregnant women	State Budget Other means not prohibited by the RA legislation Donor organizations
<b>3. Capacity building: development of educational trainings and educational materials</b>					
1) Train surgeons on "Diabetic foot"	Ministry of Health	Professional Associations and NGOs (upon agreement)	2022-2026	Treatment of patients with "diabetic foot" is carried out by trained specialists	Other means not prohibited by the RA legislation Donor organizations
2) Train 100 PHC family physicians on the use of telemedicine tools for diabetic patients	Ministry of Health	Professional Associations and NGOs (upon agreement)	2022-2026	At least 100 PHC family doctors have been trained	State Budget Other means not prohibited by the RA legislation Donor organizations
3) Train at least 100 endocrinologists and at least 400 family physicians to provide counseling for mental health of patients diagnosed with DM	Ministry of Health	Professional Associations and NGOs (upon agreement)	2022-2026	At least 100 endocrinologists and at least 400 family physicians have been trained to develop the capacity to provide psychological support to patients diagnosed with DM	State Budget Other means not prohibited by the RA legislation Donor organizations

Action	Responsible authority	Co-executor	Due date	Expected result (2026)	Funding source
4) Train at least 40 nurses a year to care for DM patients as part of the state-funded free training program for senior- and mid-level health workers	Ministry of Health	Professional Associations and NGOs (upon agreement)	2022-2026	40 nurses have undergone DM patient care training courses	State Budget Other means not prohibited by the RA legislation Donor organizations
5) Conduct practical-theoretical training sessions for ophthalmologists working in the regions with up to 5 years of work experience	Ministry of Health	Armenian EyeCare Project Charitable Foundation (upon agreement)	Third quarter of 2026	60 ophthalmologists with up to 5 years of work experience in the regions have undergone practical-theoretical training	State Budget Other means not prohibited by the RA legislation Donor organizations
<b>4. Raising awareness of the diabetes prevention and treatment among the population of Armenia</b>					
1) Conduct awareness training sessions for medical staff on correct combinations, incompatibility risks, instructions for use, properties, and storage conditions of medicines and parapharmaceutical products	Ministry of Health	Professional Associations and NGOs (upon agreement)	2022-2026	At least 60% of medical staff are aware of the correct combinations of drugs, the risks of incompatibilities, instructions for use, properties, storage conditions of medicines and parapharmaceutical products	State Budget Other means not prohibited by the RA legislation Donor organizations
2) Conduct awareness training sessions for pharmacy staff (pharmacists, pharmacologists) on correct combinations, risks of incompatibilities, instructions for use, properties, and storage conditions of medicines and parapharmaceutical products	Ministry of Health	Professional Associations and NGOs (upon agreement)	2022-2026	At least 60% of pharmacy staff (pharmacists, pharmacologists) are aware of the correct combinations, incompatibility risks, instructions for use, properties, and storage conditions of medicines and parapharmaceutical products	State Budget Other means not prohibited by the RA legislation Donor organizations
3) Implement educational and awareness-raising activities aimed at reducing behavioral risk factors	Ministry of Health	Professional Associations and NGOs (upon agreement)	2022-2026	Behavioral education and awareness-raising activities have been implemented for at least 300,000 people	State Budget Other means not prohibited by the RA legislation Donor organizations
4) Carry out activities raising awareness in secondary schools using the evidence-based medicine data on the prevention, treatment and consequences of DM among adolescents	Ministry of Education, Science, Culture and Sports Ministry of Health	Professional Associations and NGOs (upon agreement)	2022-2026	Activities raising awareness using evidence-based medicine data on the prevention, treatment and consequences of DM among adolescents have been carried out in at least 10 schools per year (50 schools in total)	State Budget Other means not prohibited by the RA legislation Donor organizations



**REFERENCE LETTER**  
**for the necessary financial resources for the implementation**  
**of the 2022-2026 National Strategy**  
**for the Prevention of Diabetes Mellitus and its Complications (in AMD)**

Activity	2022	2023	2024	2025	2026	2022-2026
TOTAL	188,334,400	911,697,950	884,657,950	871,497,950	871,497,950	3,727,686,200
1. Improving the institutional system for the prevention, early detection and treatment of diabetes mellitus and its complications, as well as patient management						
1) Drafting and approval of the Order of the Minister of Health "On approving the composition of the coordinating board for the strategy implementation measures for the prevention of diabetes mellitus and its complications 2022-2026"						
2) The Minister of Health Order approval of diabetes mellitus management guidelines developed by professional associations						
3) Increase in the annual number of slots allocated to endocrinology within the framework of targeted clinical residency (starting point: 1 slot in 2022)						
4) Include the subject "Endocrinology" in clinical residency curricula for specialties related to endocrinology	3,600,000					3,600,000
5) Capacity building of NGOs involved in the fight against DM	480,000					480,000
6) Assess the need to create diabetic foot clinics	4,500,000					4,500,000
7) Capacity building of DM schools	600,000	600,000				1,200,000
8) Expansion of DM school network taking into account the ratio of DM patients and the population of the regions	1,000,000	3,000,000				4,000,000
9) Include the provision of glucometers for pregnant women with DM (diagnosed before pregnancy) in the list of state-funded free-of-charge and subsidized services		3,900,000	3,900,000	3,900,000	3,900,000	15,600,000
10) Include the provision of at least 5 test-strips per day to at least 30% of pregnant women with DM (diagnosed before pregnancy) in the list of state-funded free-of-charge and subsidized services		5,850,000	5,850,000	5,850,000	5,850,000	23,400,000

Activity	2022	2023	2024	2025	2026	2022-2026
11) Include blood glucose tolerance diagnostic services for people at high risk for developing DM at least once a year in the list of state-funded medical care and services		420,720,000	420,720,000	420,720,000	420,720,000	1,682,880,000
12) Include glycohemoglobin determination services for DM patients at least twice a year in the list of state-funded medical care and services		288,000,000	288,000,000	288,000,000	288,000,000	1,152,000,000
13) Implement a pilot program of DM continuous care model in the region of RA with a large number of DM patients	14,000,000					14,000,000
14) Include microalbumin determination services for DM patients at least once a year in the list of state-funded medical care and services		43,200,000	43,200,000	43,200,000	43,200,000	172,800,000
15) Include glomerular filtration rate (GFR) determination services for DM patients at least once a year in the list of state-funded medical care and services		43,200,000	43,200,000	43,200,000	43,200,000	172,800,000
16) Include low-density lipoprotein (LDL) determination service for DM patients with moderate, high and very high risk of cardiovascular diseases at least once a year in the list of state-funded medical care and services		18,720,000	18,720,000	18,720,000	18,720,000	74,880,000
17) Supply the eye clinics of regional medical centers or polyclinics of RA with new equipment	93,120,000					93,120,000
18) Adapt the European Society of Cardiology and European Association for the Study of Diabetes Guidelines on Diabetes, Pre-Diabetes and Cardiovascular Diseases	9,000,000					9,000,000
<b>2. Improving the effectiveness of DM prevention and treatment</b>						
1) Carry out screening tests for detection of diabetic foot syndrome in DM patients	2,534,400	2,534,400	2,534,400	2,534,400	2,534,400	12,672,000
2) Conduct screening tests for gestational diabetes among pregnant women by measuring fasting plasma glucose levels		11,873,550	11,873,550	11,873,550	11,873,550	47,494,200
<b>3. Capacity building: development of educational trainings and educational materials</b>						
1) Train surgeons on "Diabetic foot"	160,000	160,000	160,000			480,000
2) Train 100 PHC family physicians on the use of telemedicine tools for diabetic patients	2,000,000	2,000,000				4,000,000



Activity	2022	2023	2024	2025	2026	2022-2026
3) Train at least 100 endocrinologists and at least 400 family physicians to provide counseling for mental health of patients diagnosed with DM	10,000,000	10,000,000				20,000,000
4) Train at least 40 nurses a year to care for DM patients as part of the state-funded free training program for senior- and mid-level health workers		13,000,000	13,000,000			26,000,000
5) Conduct practical-theoretical training sessions for ophthalmologists working in the regions with up to 5 years of work experience	2,400,000					2,400,000
4. Raising awareness of the diabetes prevention and treatment among the population of Armenia						
1) Conduct awareness training sessions for medical staff on correct combinations, incompatibility risks, instructions for use, properties, and storage conditions of medicines and parapharmaceutical products	6,000,000	6,000,000				12,000,000
2) Conduct awareness training sessions for pharmacy staff (pharmacists, pharmacologists) on correct combinations, risks of incompatibilities, instructions for use, properties, and storage conditions of medicines and parapharmaceutical products	5,440,000	5,440,000				10,880,000
3) Implement educational and awareness-raising activities aimed at reducing behavioral risk factors	30,000,000	30,000,000	30,000,000	30,000,000	30,000,000	150,000,000
4) Carry out activities raising awareness in secondary schools using the evidence-based medicine data on the prevention, treatment and consequences of DM among adolescents	3,500,000	3,500,000	3,500,000	3,500,000	3,500,000	17,500,000



WORLD **DIABETES** FOUNDATION

# National Diabetes Strategy

Design by  
**TUMO**

2022