

# The Burden of Diabetes in Greece and Opportunities for Policy Reform

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# 01

## Project Context & Objectives

# Background & Methodology

## Background

- **Diabetes mellitus (DM)** – a group of metabolic disorders that are characterized by elevated blood glucose levels. [1][2] Three main types of DM: T1D is autoimmune destruction of insulin-producing cells; T2D is characterized by insulin resistance and gestational DM develops during pregnancy.
- **Complications:** High blood sugar progressively damages blood vessels, leading to complications like cardiovascular disease, diabetic kidney disease, neuropathy, diabetic retinopathy, and foot ulcers. [3]
- **Management approach:** Diabetes presents a growing and multi-directional burden, impacting and impacted by multiple conditions. Management demands **integrated, multidisciplinary care** and a holistic lens like the **Cardio-Renal-Metabolic (CRM) approach**, which recognizes these interconnections for improved understanding of the disease burden and patient outcomes.

## Methods

- **Literature Review:** Analysis of international (IDF, OECD) and Greek (e.g., IDIKA) sources, including peer-reviewed articles, grey literature, and government reports (English & Greek), plus review of European diabetes care systems.
- **Greek Stakeholder Consultations:** In-depth interviews (1-2 hours) conducted with 12 key stakeholders (healthcare practitioners, patient representatives, decision-makers, industry) from September-December 2024.



1. Demonstrate the burden of diabetes in Greece and the Greek system's current approach to care management
2. Identify international approaches to managing the burden of diabetes and its required care delivery
3. Highlight opportunities for improvements in diabetes management in Greece by:
  - Outlining the steps that are needed to establish a national diabetes plan in Greece by drawing, among others, on best practices from a variety of settings.
  - Identifying the key levers that will enable significant changes in diabetes care and shifts from fragmented to integrated care pathways.
  - Outlining the potential that digitization offers in the Greek setting, with particular emphasis on improving data infrastructure.
  - Identifying changes in national pharmaceutical policy that will be conducive to improving quality of care in diabetes management.



# 02

## Key Findings

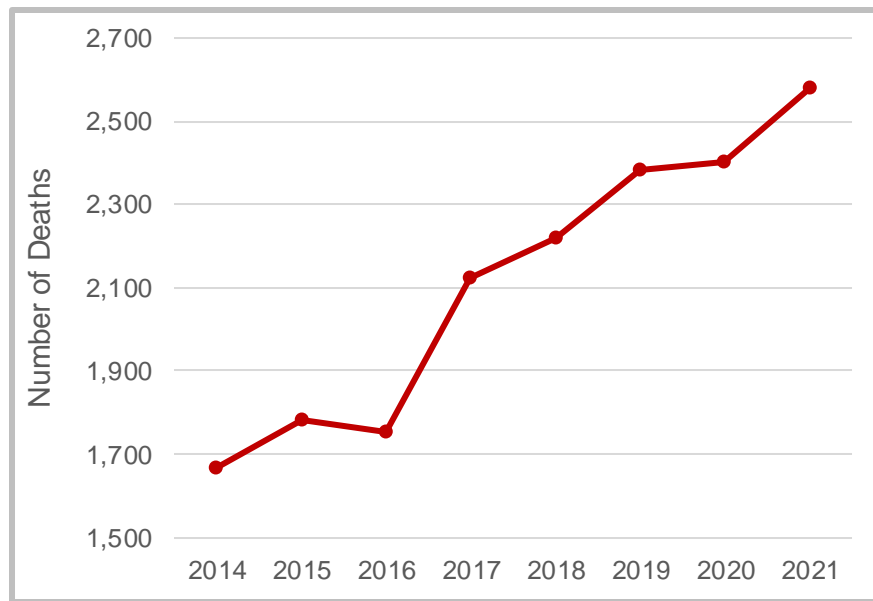


# The Growing Burden of Diabetes in Greece

# Growing Burden of Diabetes in Greece

- **Diabetes prevalence is increasing.**
  - IDF: 7.02% in 2011[4] to **9.6%** in 2021 [5]
  - EMENO survey: **11.9%** in 2013-2016 [6]
- However, challenges in verifying these estimates—including gaps in health data infrastructure and reporting systems—obfuscate the true disease burden.
- There is **no systematic monitoring and reporting of complications.**
- Underserved populations including those of low socioeconomic status, rural populations, ethnic minorities, immigrants and refugees face additional access and management burdens.
- **Diabetes-related deaths are increasing**, mortality is comparable to that of various cancers.
  - From 1,667 deaths in 2014 to 2,580 in 2021 [7]

Deaths attributable to DM as cause of death in Greece, 2014–2021

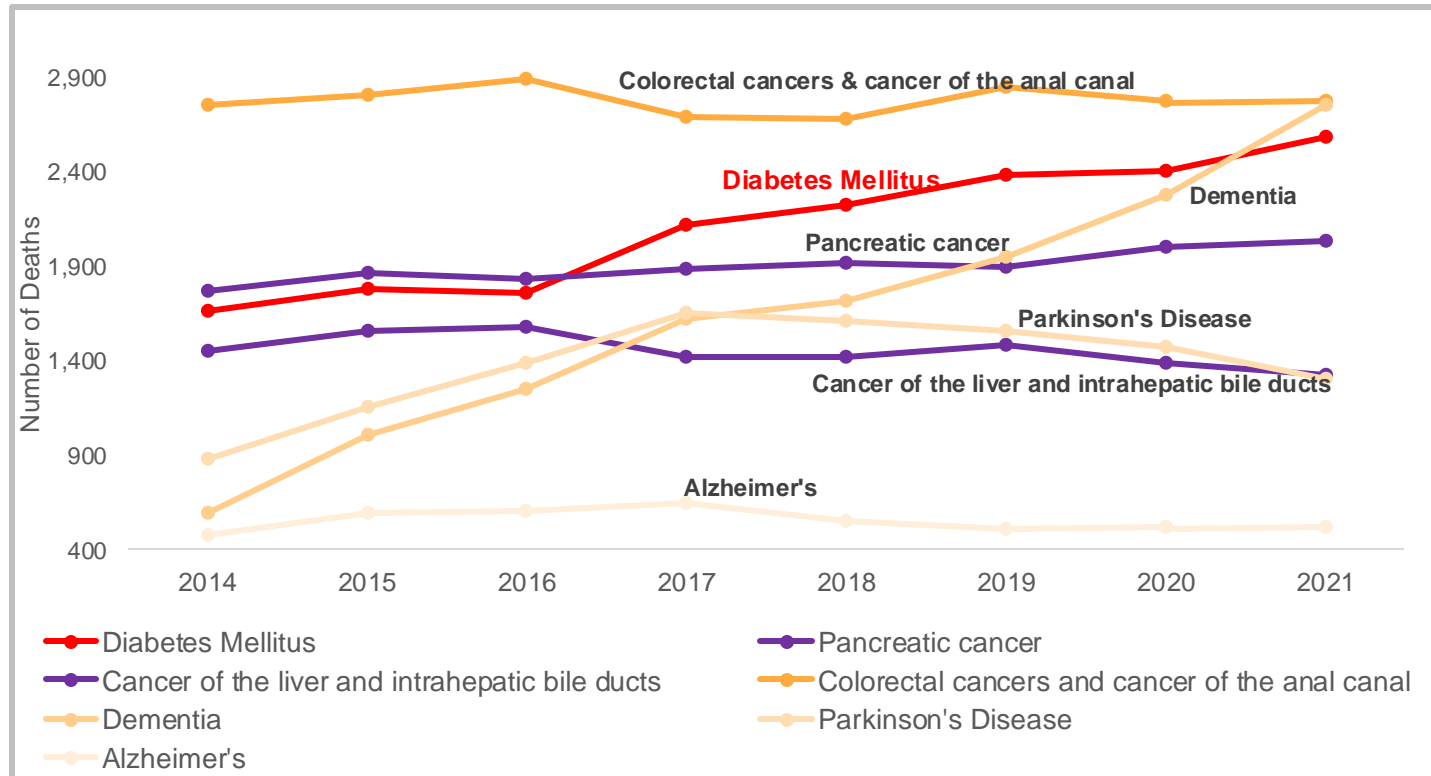


Source: (Hellenic Statistical Authority, 2021, 2024) [7]



# Growing Burden of Diabetes in Greece

Deaths per cause of death category, for selected categories in Greece, 2014 – 2021

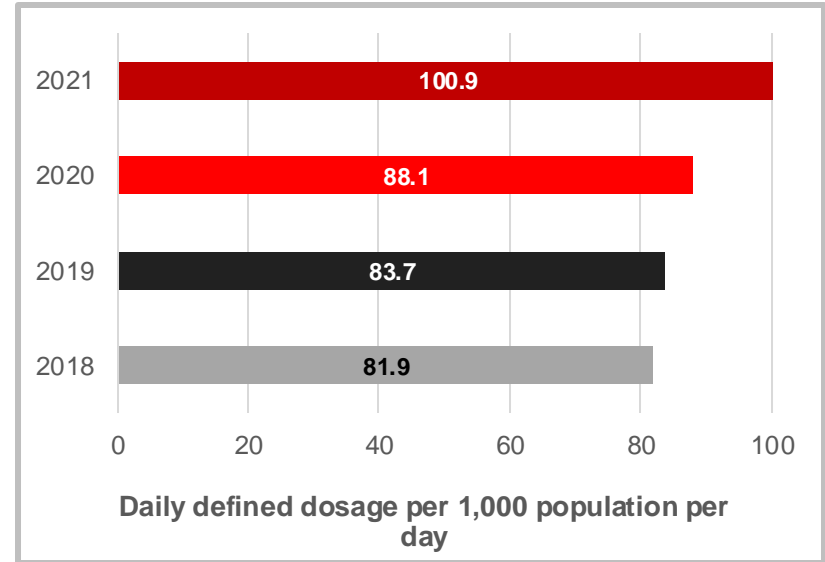


# Growing Burden of Diabetes in Greece

## Economic impact of DM:

- *Rising costs:* Greece's total and pharmaceutical expenditures are increasing, though diabetes-specific data is limited.
  - Annual total pharmaceutical spending increased from €3.8 billion in 2014 to €7.1 billion 2023 [9]
- *Increased drug use:* Antidiabetic medication usage is up, driven by newer, costlier medications (SGLT-2, GLP-1 agonists)[10], suggesting higher pharmaceutical spending
- *Hidden costs & data gaps:* Besides direct costs, indirect costs (lost productivity, etc.) are significant. Limited data hinders understanding the full financial burden, including complications

Antidiabetic Pharmaceutical Consumption, 2018 to 2021

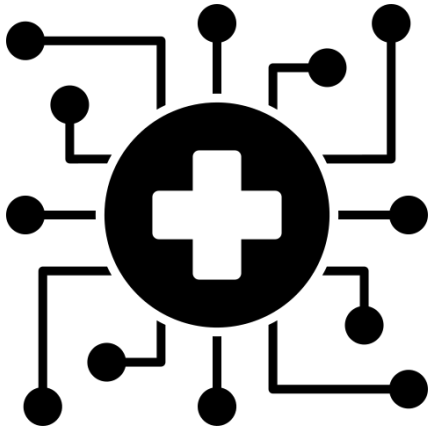


Source: (OECD, 2023) [10]



# Greece's Capacity to Address the Burden of Diabetes

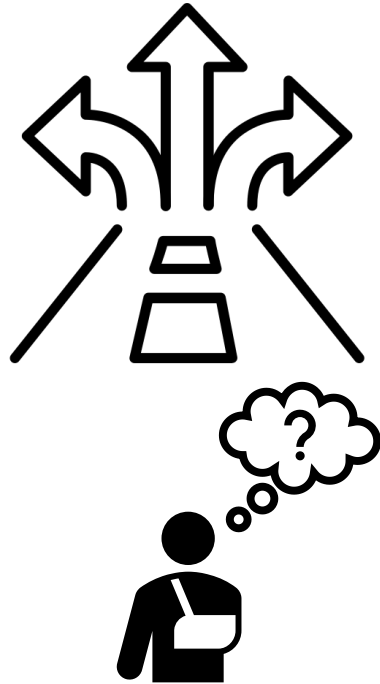
# Challenge: The Diabetes Data Dearth



- **Limited Data:** Key disease management and outcome data are missing, hindering effective care
- **Fragmented Data:** Underdeveloped, non-interoperable data systems hinder development of a comprehensive national registry and systematic complication monitoring.
  - *Interoperability Issues:* Ongoing challenges in connecting key data systems (EOPYY, IDIKA, diagnostic prescriptions, etc.) impede data sharing with PLWD and between providers.
- **Underutilized EHRs:** Incomplete Individual Electronic Health Files (IEHFs) limit care coordination and information access [11]
- **Diagnostic Gaps:** Incomplete Digital Repository of Diagnostic Examination Results (DRDER) implementation hinders physician access to test results, causing redundant testing [12]

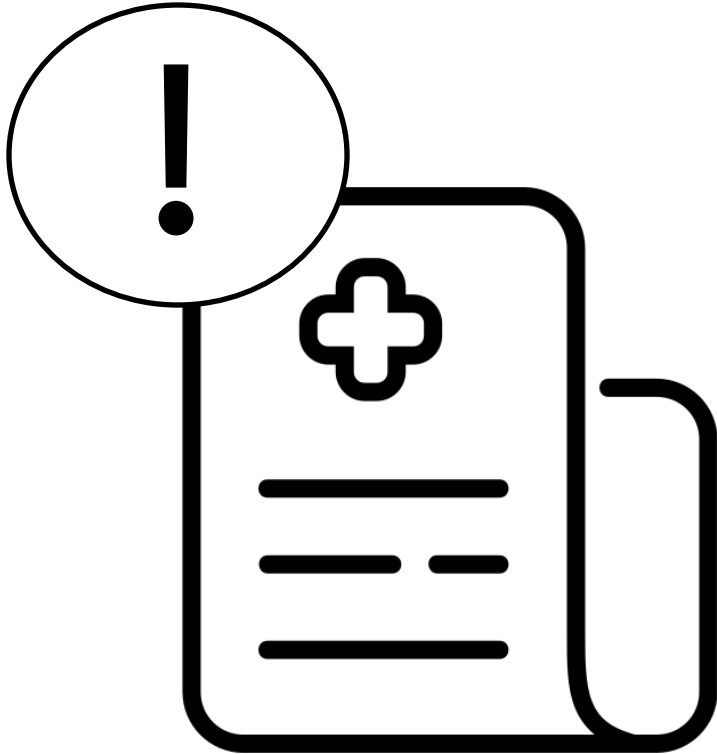
# Challenge: Fragmented and Inequitable Care Coordination

## Challenges of Primary Care



- **Weak Primary Care Capabilities:** PLWD lack of a clear first point of entry at the primary care level.
  - Poor primary care screening and management exacerbate inequality, result in advanced disease, and overburden specialists, wasting resources.
- **Incomplete Implementation of Personal Physician Role:** Although legally established, the personal physician role is not fully implemented, leading to patients bypassing primary care and directly accessing specialists [13]
- **Burden:** This weak primary care system places a significant burden on individuals, requiring them to navigate a complex system and often self-manage their care coordination.

# Challenge: Delivering Uniform Care



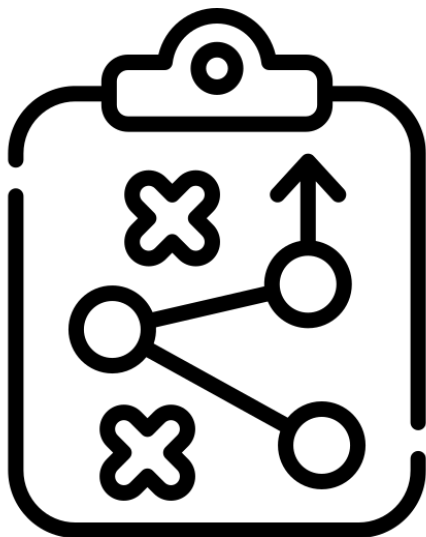
- **Diagnostic, Therapeutic and Prescribing Protocol (DTP):** in 2023, the Ministry of Health introduced a mandatory DTP for diabetes covering diagnosis, targets, treatment algorithms, and prescribing recommendations [14]
- **Clinical Guidelines:** Since 2011, the Hellenic Diabetes Association (HDA) has issued clinical guidelines, but these are not formally adopted or mandated by the government.
  - Literature indicates compliance is low (53.5% for treatment algorithm, 43.6% for follow-up)[15]

## Challenge: Ability to deliver value-based care



- **Lack of HTA for medical devices:** Inability to accurately value digital health technologies due to the absence of Health Technology Assessment (HTA) frameworks [16]
  - Example cited by interviewees: premature CGM sensor failures lead to out-of-pocket expenses for PLWD, resulting in overpayment by both the health system (for unrealized value) and PLWD (for replacement sensors)

# Challenge: Aligning Political Priorities



- **Lack of National Diabetes Plan** : Greece lacks a dedicated, officially ratified National Diabetes Action Plan. This absence creates a significant void in coordinated diabetes care
- **Diabetes Not Prioritized**: National Action Plan for Public Health (NAPPH) 2021-2025 did not mention diabetes but included plan for addressing rising trend of obesity [17]
- **Limited Implementation of Protocols**: The DTP is newly available but limited in scope





# 03

## Opportunities for Future Improvements

# Adopt a National Diabetes Strategy

- **Align political priorities** around the urgency of intervention in diabetes care delivery and the cost-effectiveness of prevention and coordinated care.
- **Develop and implement a comprehensive National Diabetes Strategy** that address identified gaps such as education, prevention, care coordination, and targeted interventions for high-risk groups.
- **Provide structured guidance to support a balanced approach to prescribing**, reflecting the individualized needs of PLWD while ensuring the economic sustainability of therapeutic protocols.
- **Engage key stakeholders:** Actively involve PLWD, patient advocacy organizations, and HCPs in the development and implementation of the national strategy.
- **Integrate with existing initiatives:** Align the National Diabetes Strategy with other relevant policies, such as the NAPPH and efforts to strengthen primary care.

# Strengthen Primary Care Delivery

- **Strengthen Primary Care:** Implement the personal physician role effectively, establish clear referral pathways, and improve care coordination between primary care and specialists.
- **Address Specialist Shortage:** Reinforce and incentivize the specialist training program, explore strategies to attract and retain specialists in the public sector (e.g., competitive salaries, career development opportunities).
- **Expand Nurse Roles:** Invest in state-funded diabetes nursing training programs, expand the role of nurses in diabetes care, and address systemic constraints that limit their contributions.
- **Improve Access to Specialized Care:** Explore strategies to improve access to specialized care in underserved areas, such as mobile clinics or increased outreach programs.

- **Interoperability:** Enable seamless data sharing, across all providers, regions, and care levels.
- **Telehealth:** Provide value-based reimbursement for telehealth, especially in remote areas, with clear guidelines, legal framework and payment models.
- **Registry & Tracking:** Ensure key data is captured in a comprehensive national diabetes registry that covers all PLWD.
  - Enable systematic complication tracking, linked to IDIKA, to inform policy and identify care gaps
  - Fully implement and utilize IEHF and DRDER

- **Remove Existing Barriers:** Address practical obstacles, such as:
  - Restrictions on diagnostic testing for complications in private practice and lack of telehealth reimbursement.
  - Limited access to standardized diagnostic tools, especially for end-organ damage.
- **Holistic Care:** Expand coverage to include a wide range of interventions (nutritional support, mental health, digital health, etc.). Adopt a cumulative risk management approach, addressing diabetes within the context of co-occurring conditions.



- **Increase capacity building within the HTA committee:** with a targeted focus on medical devices and DHTs, to strengthen value-based diabetes care and ensure informed, evidence-based decision-making.
- **Data-Driven HTA:** As data collection and analysis capabilities improve, leverage these insights to support evidence-based assessments and enable advanced financial agreements.
- **Inclusive Process:** Enhance stakeholder engagement, particularly with patient advocacy groups, for transparent recommendations.





# 04

## Key Takeaways

# Key Takeaways

1. Immediate action is advisable
  - Even with the limited data available, we know diabetes is a rapidly growing concern with serious QoL, mortality and economic consequences. The issue will only get more expensive as time goes on and preventative action is the most cost-effective.
2. Political alignment and multi-stakeholder coordination are key components of successful interventions.
  - As demonstrated in European systems, National Diabetes Strategies drive coordinated change.
3. Investment in health data infrastructure is crucial to Greece's overall health system development and its ability to deliver coordinated, multi-specialty care for its population.
  - There seems to be a focus on improving access to health data for patients, but less of a focus on enabling providers to share data which inhibits the health system's ability to perform and places undue burden on patients to self-coordinate care.
4. Improved primary care capacity is a key lever to enabling integrated care.
  - Earlier interventions equal better outcomes in health and wealth.
  - Reduces unnecessary burden on specialists, freeing them to deliver care where they are most needed.
5. Continued HTA developments to enable assessment of digital technologies are essential for delivering value-based diabetes care.





# Thank you

**For full report, visit:**

<http://www.lse.ac.uk/business/consulting/reports/the-burden-of-diabetes-in-greece>

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