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Review Article

Healthcare Economics and Policy in Diabetic Foot Care

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Abstract

Background: Diabetic foot ailment is a severe and multifaceted complication of diabetes mellitus that imposes significant scientific, economic, and societal burdens worldwide. Its high prevalence, coupled with complications such as ulcers, infections, and amputations, contributes substantially to morbidity, mortality, and reduced quality of life. *Aim:* This chapter aims to examine diabetic foot care through the perspectives of health-care economics and policy, highlighting the global burden, associated costs, and strategies to improve outcomes. *Methods:* The chapter reviews epidemiological data on diabetic foot disease, analyses the economic burden including direct medical expenses, productivity losses, and psychosocial impacts and critically appraises health-economic evaluations such as cost-effectiveness and cost-utility studies. Policy analysis is conducted to explore international and national strategies, regulatory frameworks, and reimbursement mechanisms. Care models, including multidisciplinary teams, community-based programmes, telemedicine, and integrated care pathways, are also assessed. *Results:* Findings reveal considerable regional variation in disease burden, risk factors, and economic costs. Evidence supports the value of preventive measures, multidisciplinary clinics, and advanced wound-care technologies in improving health outcomes and cost efficiency. However, persistent gaps remain, including inequitable access to care, underfunding, workforce shortages, and socioeconomic disparities. *Conclusions:* A comprehensive, integrated approach is essential to effectively address diabetic foot disease. Strengthening preventive efforts, adopting innovative technologies, ensuring universal health coverage, and implementing data-driven policies can reduce the global burden, improve patient outcomes, and achieve cost-efficient, equitable care.

Keywords

Diabetic Foot Ulcers, Health Economics, Policy Strategies, Multidisciplinary Care, Cost-effectiveness, Universal Health Coverage

1. Introduction

1.1. Background on Diabetes Mellitus (DM) as a Global Health Issue

Diabetes mellitus (DM) is a complicated, chronic condition defined by chronic hyperglycaemia that stems from inadequate insulin secretion, decreased insulin effectiveness, or a combination of the two. Its prevalence has escalated from a major public health concern to an outright epidemic, with no sign of slowing. The International Diabetes Federation (IDF) reports that 537 million adults aged 20–79 lived with diabetes in 2021, a number expected to climb to 643 million by 2030 and 783 million by 2045 [1]. Rapid urbanisation, increasingly sedentary lifestyles, unbalanced diets, and the global rise in

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obesity and metabolic syndrome collectively fuel this upward trajectory [2].

The repercussions of diabetes extend well beyond high blood glucose levels. Chronic hyperglycaemia precipitates a range of microvascular complications, including diabetic retinopathy, nephropathy, and neuropathy, as well as macrovascular conditions such as coronary artery disease, peripheral arterial disease, and stroke. These sequelae markedly increase morbidity, diminish quality of life, and contribute to premature mortality among individuals with diabetes [3]. As a result, health-care systems face mounting pressure to provide continuous disease management, emergency interventions, and long-term follow-up for an ever-growing patient population.

1.2. Significance of Diabetic Foot Complications

Among the many sequelae of diabetes, disorders of the foot, especially diabetic foot ulcers (DFUs), pose a serious clinical and public-health threat. Lifetime risk estimates suggest that 15 – 25% of people with diabetes will develop an ulcer, with annual global incidence ranging from 1.0% to 4.1% [4]. Most DFUs result from the convergence of peripheral neuropathy, peripheral arterial disease and seemingly minor trauma, a triad that undermines skin integrity and impairs normal wound repair.

DFUs are associated with grave outcomes, including deep-tissue infection, osteomyelitis and gangrene. These complications often necessitate hospital admission, extensive surgical debridement and, in advanced cases, lower-limb amputation. Worldwide, diabetes accounts for 0.2 – 2.0% of lower-extremity amputations annually, with non-traumatic procedures representing up to 85% of all diabetes-related limb loss [5]. Prognosis after major amputation remains poor: five-year mortality exceeds 50%, surpassing that of several common malignancies such as breast and prostate cancer [5]. The burden of DFUs extends well beyond physical morbidity. Persistent pain, restricted mobility, social isolation and stigma collectively erode quality of life and heighten the risk of psychological distress and mental-health disorders [6].

1.3. Rationale for Economic and Policy Focus

The management of diabetic foot complications imposes a sizeable financial load on health-care systems and society. Direct costs span hospital admissions, surgical interventions, specialised wound-care products, outpatient visits, rehabilitation services and medications such as antibiotics and adjunct wound-healing agents. In the United States alone, diabetic foot disease accrues an estimated additional US $9-13 billion each year on top of routine diabetes-care expenditures [3].

Indirect costs compound this burden. Lost productivity due to disability, absenteeism, early retirement, and premature death, along with extended caregiving, reliance on social services, and the need for assistive devices, drive up overall societal spending. These pressures are felt most acutely in low- and middle-income countries (LMICs), where limited health-care resources and significant out-of-pocket costs place even greater economic pressure on families [4].

At the individual level, the economic consequences can be devastating, thrusting families into poverty, disrupting treatment adherence, and fueling a vicious cycle of deteriorating health and mounting hardship. The sheer scale of resource utilisation and its far-reaching effects strengthen the case for raising diabetic foot care on national and international health agendas. Strategic investment in prevention, early detection, and integrated management can reduce complication costs, preserve function, and generate significant economic and societal benefits by improving quality of life.

1.4. Objectives of the Chapter

This chapter pursues four interconnected aims. First, it dissects the economics of diabetic-foot care, distinguishing the direct, indirect and intangible costs that stem from foot-related complications. Second, it reviews policy responses and strategic frameworks, global, regional and national, designed to lessen the burden of diabetic-foot disease. Third, it evaluates a range of care models and health-system approaches, judging their clinical impact alongside their economic value. Finally, it offers evidence-based policy recommendations intended to optimise service delivery, improve cost-effectiveness and promote health equity.

2. Epidemiology and Burden of Diabetic Foot Disease

2.1. Global and Regional Prevalence of DFUs

Diabetic foot ulcers (DFUs) pose a significant public-health challenge, with pronounced geographic and demographic variation in their occurrence. Worldwide, an estimated 6.3% of people with diabetes will develop a foot ulcer during their lifetime, equating to millions of new cases each year [7]. The burden is heaviest in low- and middle-income countries (LMICs), where preventive services and specialist foot care are scarce; in South-East Asia and sub-Saharan Africa, for instance, prevalence among individuals with diabetes can exceed 10% [8].

Regional investigations underscore these disparities, linking higher DFU rates to gaps in infrastructure, patient education and socioeconomic conditions. High-income settings, supported by systematic screening and multidisciplinary teams, tend to record lower prevalence and better outcomes. By contrast, LMICs shoulder a disproportionate share of advanced ulcer presentations and related complications [9]. Figure 1 visualises the global and regional distribution of DFUs and highlights the urgent need for context-specific prevention strategies.

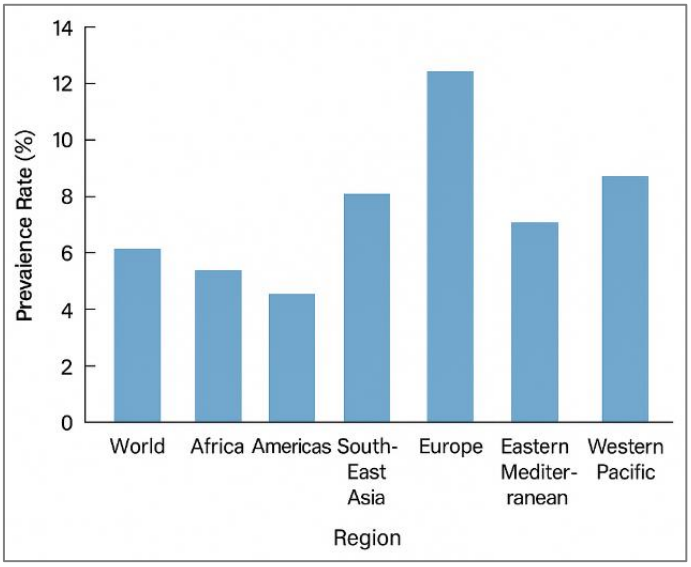

Figure 1. *Global and Regional Prevalence of Diabetic Foot Ulcers.*

2.2. Risk Factors and Demographic Trends

The pathogenesis of diabetic foot ulcers (DFUs) is multifactorial, shaped by an intricate mix of biological, behavioural and social determinants. Two mechanisms dominate: peripheral neuropathy and peripheral arterial disease [10]. Diminished protective sensation from neuropathy allows repetitive, unnoticed trauma, while ischaemia due to vascular insufficiency impedes tissue perfusion and delays healing.

Additional hazards include foot deformities, ill-fitting footwear, restricted joint mobility and any prior history of ulceration or amputation. Demographically, risk rises sharply after the age of 60, reflecting the cumulative impact of vascular and neuropathic damage [11]. Male sex, longer diabetes duration, sub-optimal glycaemic control and lower socioeconomic status are also consistently linked to higher DFU prevalence [12]. Social determinants, limited education and poor access to specialist foot care in particular, further amplify vulnerability in at-risk populations.

2.3. Clinical Outcomes: Ulcer Recurrence, Infection, and Amputation

The clinical course of DFUs is often severe and cyclical. Even after apparent healing, recurrence is common: about 40% of patients develop a new ulcer within one year, 60% within three years and 65% within five years [13]. These figures highlight the chronic nature of diabetic foot disease and the ongoing need for preventive surveillance.

Infection is both frequent and serious, commonly necessitating systemic antibiotics, surgical debridement or hospital admission. Over the lifespan of an ulcer, 50–60% become infected, raising the risk of sepsis, osteomyelitis and ultimately limb loss [14]. Amputation constitutes the gravest outcome, with DFUs preceding roughly 85% of diabetes-related lower-extremity amputations. Following a primary amputation, the likelihood of contralateral limb loss, and of mortality rises markedly. Such outcomes impose heavy physical and psychological burdens, underscoring the imperative for early, multidisciplinary intervention.

2.4. Impact on Quality of Life and Functional Status

Diabetic foot ulcers (DFUs) sharply diminish patients' quality of life and compromise their independence. Ulcer-related pain, limited mobility and fear of further injury curtail everyday activities and restrict participation in work, family and community roles. Consistently, studies show that people with DFUs score markedly lower on both physical and mental-health indices than those with diabetes who have no foot complications [15]. The psychological toll is similarly heavy. Persistent wounds and the looming possibility of amputation can precipitate depression, anxiety and social withdrawal, while the stigma of visible ulcers or limb loss often deepens isolation and erodes self-esteem. In short, DFUs affect the whole person, not just the injured foot, and frequently increase reliance on caregivers for daily needs.

2.5. Indirect Effects on Families and Caregivers

The repercussions of DFUs ripple outward to families and informal carers, who must often provide extensive physical, emotional and financial support. Routine tasks, dressing changes, assistance with mobility and help with activities of daily living, can generate significant stress and may force caregivers to reduce or abandon paid work.

Financial pressures can be severe, especially where social protection or health-insurance coverage is limited.

Out-of-pocket costs for dressings, transport to clinics and lost household income compound economic hardship and reduce overall quality of life for entire families [7]. Figure 2 underscores this multidimensional burden, highlighting the need for comprehensive care strategies that integrate clinical management with psychosocial and economic support.

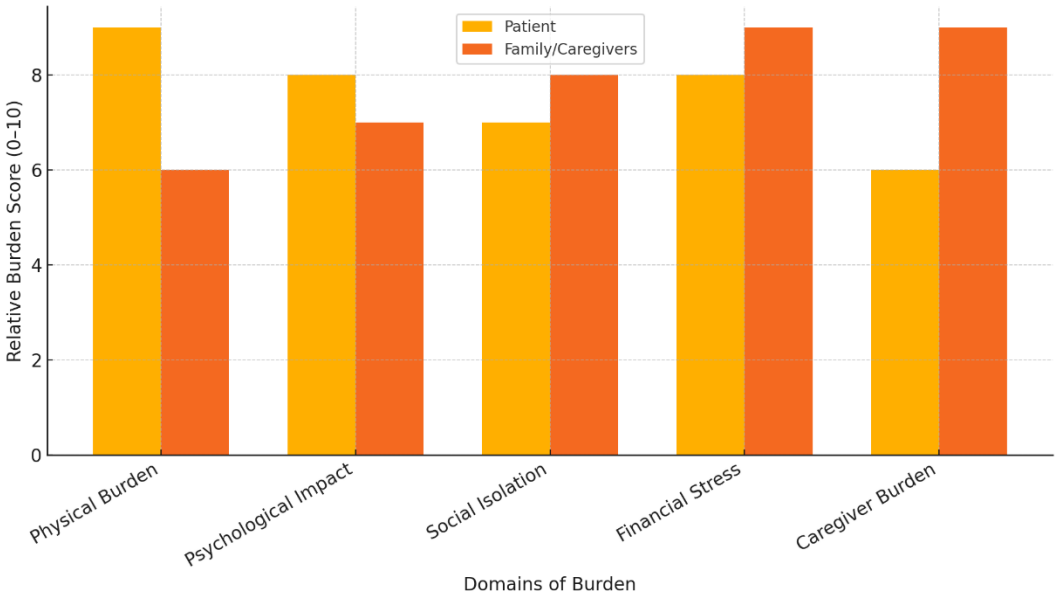

Figure 2. *Multi-dimensional Burden of Diabetic Foot Ulcers on Patients and Families.*

3. Economic Burden of Diabetic Foot Care

3.1. Direct Healthcare Costs

Direct medical spending on diabetic-foot management absorbs a large share of overall diabetes-related expenditure. Hospital admissions account for the bulk of this outlay: prolonged inpatient stays to control infection, surgical debridement or amputation, and, in severe cases, intensive-care support all escalate costs. In the United States, the average bill for a single DFU admission has been estimated at US $20 000–40 000, depending on ulcer severity and the procedures performed [16].

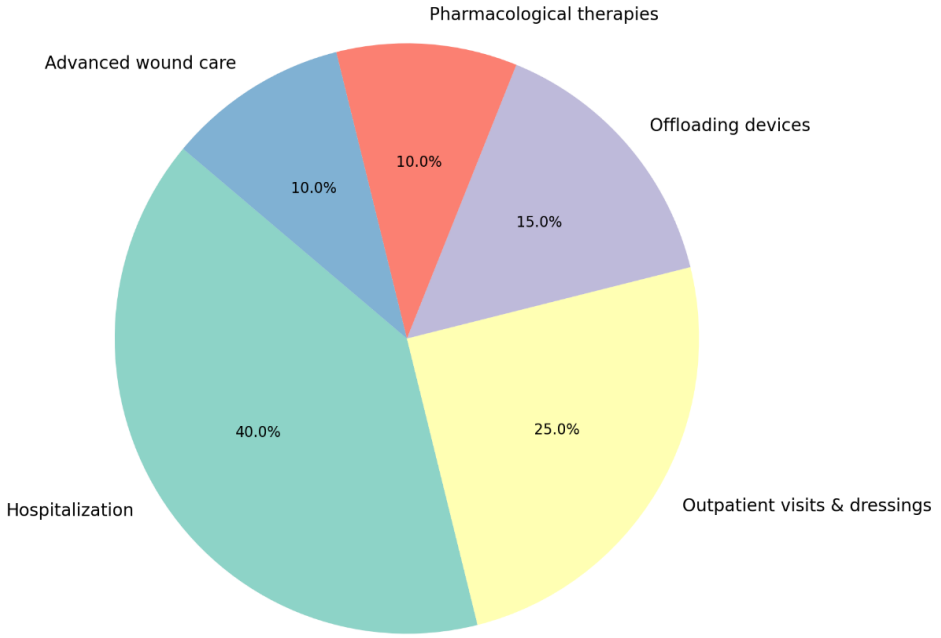

Figure 3. *Distribution of Direct Healthcare Costs in Diabetic Foot Care.*

Substantial costs also accrue after discharge. Regular outpatient appointments for wound assessment, debridement and dressing changes, along with specialised off-loading devices such as total-contact casts and custom orthoses, add to the financial burden. Advanced dressings, negative-pressure wound therapy and other cutting-edge technologies, though clinically beneficial, further inflate expenditure. Pharmacological therapy, both systemic antibiotics for infection control and topical agents that stimulate healing imposes an additional layer of cost [17]. Figure 3 depicts how these major components collectively shape the direct health-care spending profile for diabetic-foot care.

3.2. Indirect Costs

Indirect costs represent a substantial, yet often underappreciated, component of the economic burden. Loss of productivity is a prominent factor; patients may experience prolonged work absences, reduced work capacity, or even permanent exit from the workforce due to disability. In a European analysis, productivity losses accounted for nearly 50% of the total cost associated with diabetic foot disease [18].

Long-term disability leads to dependency on family members or social services, further increasing societal costs. Expenses related to home modifications, mobility aids, and continuous caregiving support also contribute significantly. Additionally, social services and long-term care facilities bear considerable costs associated with supporting individuals who have undergone major amputations or suffer from chronic mobility limitations [19]. Figure 4 will present a pie chart illustrating the composition of indirect costs in diabetic foot care.

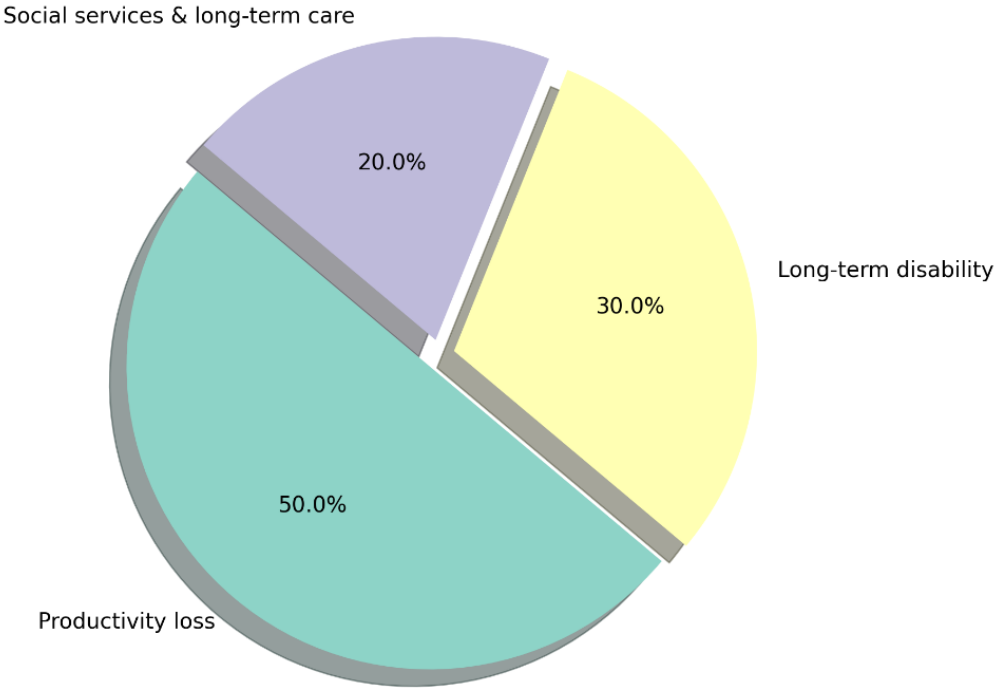

Figure 4. *Composition of Indirect Costs in Diabetic Foot Care.*

3.3. Intangible Costs

Intangible costs, although difficult to quantify, exert profound effects on patients and their families. Chronic pain, persistent discomfort, and repeated ulcer recurrences contribute to substantial psychological distress. Anxiety, depression, and feelings of helplessness are commonly reported among individuals living with DFUs, affecting overall mental health and quality of life [20].

Moreover, social isolation and stigma associated with visible wounds, mobility limitations, and amputations further exacerbate emotional and psychological burdens. The loss of social roles and relationships often leads to diminished self-esteem and reduced participation in community life [21]. Figure 5 will depict a pie chart summarizing the relative contributions of key intangible cost elements in diabetic foot disease.

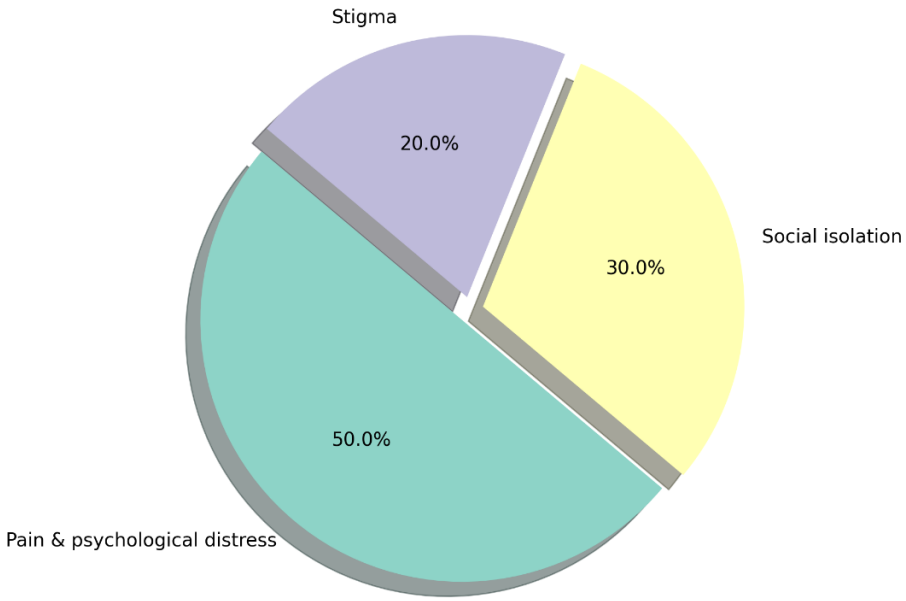

Figure 5. *Intangible Costs in Diabetic Foot Disease.*

3.4. Cost Comparisons

When compared to other diabetes complications, such as nephropathy or retinopathy, the costs associated with diabetic foot disease are among the highest. This is attributed to the complexity of management, high recurrence rates, and the need for intensive and prolonged care. In the United States, diabetic foot complications are estimated to account for approximately one-third of all diabetes-related hospital admissions and generate costs exceeding those associated with kidney or eye complications [22].

Regional and global variations in costs are notable, reflecting disparities in healthcare systems, resource availability, and cost structures. In high-income countries, advanced wound care technologies and multidisciplinary team approaches drive higher direct costs, whereas in low- and middle-income settings, delayed presentation and advanced disease stages increase the overall treatment burden and indirect costs. These discrepancies highlight the importance of context-specific economic evaluations and policy strategies. Figure 6 will illustrate a comparative pie chart of the average costs associated with different diabetes complications.

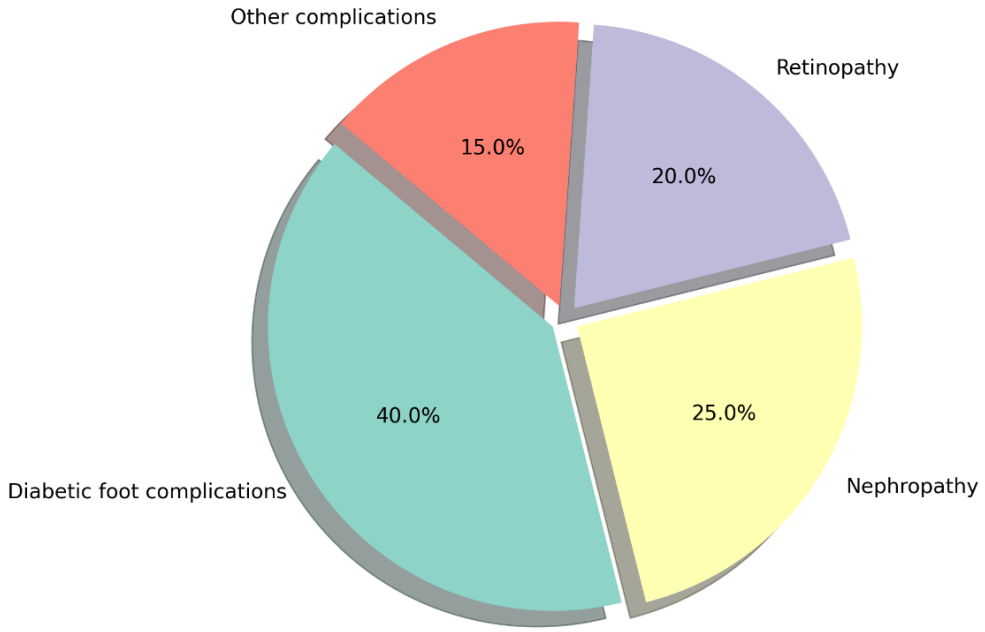

Figure 6. *Comparative Costs of Major Diabetes Complications.*

4. Health Economic Evaluations in Diabetic Foot Care

4.1. Types of Economic Analyses

Health-economic evaluations guide decision-makers in allocating scarce resources and refining service delivery. In diabetic foot care, three approaches dominate: cost-effectiveness analysis (CEA), cost-utility analysis (CUA), and cost-benefit analysis (CBA). A cost-effectiveness analysis compares the financial outlay of two or more interventions with their clinical results, typically reported in natural units such as ulcers averted or amputations avoided. CEAs are widely applied to contrast the expense of routine foot-screening programmes with the far greater costs incurred when managing advanced ulcerations or performing amputations [23].

Cost-utility analysis, an extension of CEA, incorporates patient-centred outcomes by converting benefits into quality-adjusted life years (QALYs). Because diabetic foot interventions influence both survival and health-related quality of life, CUAs provide a relevant yardstick and allow policy-makers to weigh diabetic foot initiatives against other health programmes when setting priorities [24]. Cost-benefit analysis assigns monetary values to both the costs and the benefits of an intervention, yielding a direct estimate of net economic gain or loss. Although CBAs are used less frequently in diabetic foot research, largely due to the challenges of pricing health gains they offer a powerful framework for judging whether society should invest in preventive or therapeutic strategies [19].

4.2. Methodological Challenges

Conducting rigorous economic evaluations of diabetic-foot care is laden with methodological obstacles. Chief among them is patient heterogeneity: clinical presentations range from small, superficial ulcers to limb-threatening infections that may culminate in amputation, while comorbidities, socioeconomic circumstances, and access to services vary widely across individuals. This diversity constrains the generalisability of study results and complicates meaningful comparisons between interventions [23].

Long-term perspectives introduce additional difficulty. Many cost-effectiveness studies rely on short-term trial data that seldom capture the chronic, relapsing nature of diabetic-foot disease. To estimate lifetime costs and benefits accurately, researchers must model ulcer progression, recurrence, disability, and mortality, tasks that usually require sophisticated state-transition techniques such as Markov models and extensive longitudinal inputs that are rarely available [24].

Assigning utility values for quality-adjusted life-year (QALY) calculations is equally complex. These weights are often derived from general-population preferences and may not reflect the lived experience of people coping with chronic wounds, pain, or amputation. Psychological distress and social isolation, key elements of the disease burden are particularly difficult to quantify, increasing the likelihood that conventional QALY estimates understate the true impact of diabetic-foot complications [19].

4.3. Evidence from Economic Evaluations

Although methodological challenges persist, an expanding body of research shows that many diabetic-foot interventions provide excellent economic value. Preventive strategies, routine foot exams, structured education programmes and early treatment of pre-ulcerative lesions consistently rank as cost-effective. Annual checks combined with education, for instance, markedly lower the incidence of diabetic-foot ulcers (DFUs) and amputations, translating into significant long-term savings [25].

More sophisticated wound-care options, such as bioengineered skin substitutes, negative-pressure therapy and growth-factor applications have also been evaluated. While these technologies can be expensive up front, they often pay for themselves by speeding healing, reducing recurrence and cutting hospital stays and amputation rates. In appropriately selected patients, the evidence suggests these interventions can be cost-effective or even cost-saving [24].

Multidisciplinary diabetic-foot clinics offer another strong example. By bringing together endocrinologists, podiatrists, vascular and infectious-disease specialists, and specially trained nurses, these clinics coordinate care in ways that reduce major amputation rates, shorten hospitalisations and enhance healing outcomes, benefits that are both clinical and economic [19]. Taken together, these findings highlight the importance of grounding policy and practice in solid economic evidence so that limited resources are channelled toward interventions delivering maximum value and better outcomes for people living with diabetic-foot disease.

5. Healthcare Policy Landscape in Diabetic Foot Care

5.1. Global Policy Initiatives

Diabetic-foot care has risen sharply on international health agendas, reflecting the substantial burden it places on patients and health-care systems. The World Health Organization's *Global Action Plan for the Prevention and Control of Non-communicable Diseases 2013–2020* promotes an integrated approach to chronic disease management, including diabetes and underscores prevention, early detection and effective treatment of complications such as diabetic-foot ulcers (DFUs) [26].

Complementing the WHO framework, the International

Diabetes Federation (IDF) has issued detailed guidance on diabetic-foot disease that recommends annual foot examinations for every person with diabetes, robust patient-education programmes to strengthen self-care and the establishment of multidisciplinary foot-care teams [27]. The IDF's "Step by Step" initiative, successfully implemented in several low- and middle-income countries (LMICs), has improved provider training and patient outcomes. Together, these global efforts have spurred regional and national policy development, encouraging the integration of diabetic-foot services into broader diabetes and NCD strategies. Nevertheless, significant implementation gaps persist, especially in resource-constrained settings.

5.2. National Policies and Strategies

National responses to diabetic-foot care vary widely, reflecting differences in health-system capacity and resource allocation. In many high-income countries (HICs), notably across Western Europe and North America, diabetic-foot management is embedded in national diabetes plans, supported by routine screening pathways, subsidised advanced wound-care products and readily accessible multidisciplinary clinics [28]. The United Kingdom's National Health Service (NHS), for example, lists diabetic-foot care as a core performance indicator, promoting integrated service delivery aimed at reducing amputations and improving outcomes. By contrast, LMICs often grapple with underfunding, limited workforce training and restricted access to essential wound-care supplies [29]. These constraints mean patients frequently present late, with advanced disease, leading to higher rates of major amputation and mortality.

Integration of diabetic foot care into national diabetes programs remains a critical priority. Many countries have begun adopting models that emphasize primary prevention, community-based education, and strengthened referral systems to facilitate timely interventions [30]. Despite these efforts, reimbursement policies remain inconsistent. Some nations provide full or partial coverage for diabetic foot-related services and devices, while others require substantial out-of-pocket payments, creating significant barriers to equitable access [31]. Table 1 summarizes key differences in national diabetic foot care strategies between high-income and low- and middle-income countries.

Table 1. *Comparison of National Diabetic Foot Care Strategies Between High-Income and Low- and Middle-Income Countries.*

Aspect	High-Income Countries	Low- and Middle-Income Countries
Integration into national diabetes programs	Fully integrated with clear care pathways and performance indicators	Partial or limited integration; often fragmented services
Access to multidisciplinary foot clinics	Widely available, especially in urban centers	Limited or absent; often centralized in major hospitals only
Availability of advanced wound care	Broad access to modern dressings, offloading devices, and adjunctive therapies	Limited availability; reliance on basic or traditional methods
Reimbursement policies	Comprehensive insurance coverage for most foot care services and devices	Minimal coverage; high out-of-pocket expenses for patients
Health workforce capacity	Specialized foot care professionals widely trained and accessible	Workforce shortages; lack of specialized training programs
Patient education programs	Systematic, well-funded educational initiatives targeting prevention and self-care	Sparse and underfunded; often reliant on NGO or external support

5.3. Regulatory and Reimbursement Considerations

Regulatory frameworks play a pivotal role in ensuring the safety, efficacy, and accessibility of devices and therapies used in diabetic foot care. The approval processes for new wound care technologies, offloading devices, and advanced therapies vary widely across regions, often leading to delays in availability in certain markets [32].

Insurance coverage policies significantly influence patient access to essential diabetic foot care services. In HICs, insurance schemes often cover advanced wound dressings, custom footwear, and multidisciplinary consultations, thereby reducing financial barriers. However, in many LMICs, limited insurance coverage and high out-of-pocket expenditures deter patients from seeking timely care and adhering to prescribed treatments [33].

Economic and structural barriers further compound these challenges. Rural populations and marginalized communities frequently lack proximity to specialized foot clinics, and shortages in trained healthcare providers exacerbate service

gaps. Addressing these barriers necessitates policy interventions that focus on expanding workforce capacity, enhancing supply chain logistics, and improving insurance schemes to achieve universal health coverage for diabetic foot care. Table 2 outlines common regulatory and reimbursement challenges faced in different healthcare settings.

Table 2. *Summary of Regulatory and Reimbursement Challenges in Diabetic Foot Care.*

Challenge	Description
Approval delays for new devices and therapies	Lengthy regulatory approval processes hinder timely access to innovative wound care products and technologies.
Limited insurance coverage	Inadequate reimbursement for essential foot care services, devices, and advanced therapies increases financial burden on patients.
High out-of-pocket expenditures	Significant personal costs discourage adherence to recommended care plans and delay treatment seeking.
Rural and underserved area access barriers	Geographic disparities limit access to specialized clinics and trained professionals, especially in rural and remote regions.
Supply chain constraints	Inconsistent availability of essential dressings, antibiotics, and offloading devices due to logistical and procurement issues.
Workforce training gaps	Shortage of healthcare providers skilled in diabetic foot care exacerbates quality and access problems.

6. Models of Care and Health System Responses

6.1. Multidisciplinary Diabetic Foot Clinics

Multidisciplinary diabetic foot clinics (MDFCs) represent a cornerstone in the comprehensive management of diabetic foot disease. These clinics bring together diverse healthcare professionals, including endocrinologists, diabetologists, podiatrists, vascular and orthopedic surgeons, infectious disease specialists, wound care nurses, and prosthetists. Each member plays a critical role: endocrinologists optimize glycemic control, surgeons address vascular insufficiency and infections, podiatrists manage foot biomechanics and deformities, and specialized nurses coordinate wound care and patient education [34].

Evidence strongly supports the clinical and economic benefits of MDFCs. Studies have demonstrated significant reductions in major amputation rates—by up to 85%—following the implementation of multidisciplinary care models. Furthermore, these clinics have been associated with decreased hospital length of stay, improved ulcer healing rates, and reduced rates of ulcer recurrence [35]. From an economic perspective, the initial investment in establishing MDFCs is offset by long-term savings from avoided amputations, fewer hospital admissions, and improved patient functionality, ultimately resulting in substantial cost-effectiveness.

6.2. Community-based Interventions

Community-based interventions are critical in reducing the incidence and severity of diabetic foot complications, particularly in resource-limited settings. Screening and early detection programs implemented at the community level allow for identification of high-risk individuals before ulcers develop. Foot examinations conducted by trained community health workers or primary care providers enable prompt referrals and early interventions [36].

Patient self-management and education initiatives form another essential component. Programs designed to educate patients on proper foot hygiene, daily self-inspection, appropriate footwear, and early signs of complications have shown considerable success in reducing ulcer incidence. Community workshops, peer support groups, and culturally tailored educational materials enhance engagement and sustainability of preventive behaviors. These interventions are particularly impactful in low- and middle-income countries, where access to specialist services is limited and community health structures often serve as the first line of defense.

6.3. Telemedicine and Digital Health Solutions

The integration of telemedicine and digital health technologies into diabetic foot care has transformed service delivery, especially in geographically underserved areas. Remote consultations enable timely assessments and follow-up without requiring patients to travel long distances. Digital

wound monitoring platforms allow patients to share images of their ulcers with clinicians, facilitating early identification of complications and dynamic treatment adjustments [37].

The cost implications of telemedicine are generally favorable. While initial infrastructure and training investments are required, long-term savings arise from reduced transportation costs, decreased hospital admissions, and optimized use of specialist resources. Moreover, digital solutions enhance continuity of care and empower patients to take an active role in their treatment, fostering better adherence and outcomes.

In rural and remote regions, telemedicine bridges gaps in specialist availability, helping mitigate disparities in access to advanced foot care. Mobile health (mHealth) applications further support self-monitoring and education, providing culturally and linguistically appropriate content tailored to diverse populations.

6.4. Integrated Care Pathways

Integrated care pathways (ICPs) aim to standardize and streamline the management of diabetic foot complications by defining evidence-based sequences of clinical interventions. These pathways establish clear protocols for screening, referral, diagnostics, treatment, and follow-up, reducing unwarranted variations in care and ensuring adherence to best practices [34].

ICPs have been associated with improved clinical outcomes, including reduced ulcer healing time, fewer complications, and lower amputation rates. From an economic standpoint, standardization minimizes duplication of services and unnecessary interventions, resulting in significant cost savings. Moreover, ICPs facilitate interdisciplinary communication and coordination, enhancing overall system efficiency.

By integrating preventive, diagnostic, and therapeutic strategies into a cohesive framework, ICPs promote continuity of care and patient-centeredness. They also support health systems in meeting performance metrics and achieving quality improvement targets, ultimately contributing to both improved health outcomes and financial sustainability.

7. Policy Challenges and Gaps

Despite growing recognition of diabetic foot disease as a significant public health issue, numerous policy challenges and systemic gaps continue to impede effective prevention and management efforts worldwide. A major barrier is underfunding and competing health priorities. In many countries, particularly low- and middle-income countries (LMICs), healthcare budgets are limited and heavily allocated to acute infectious diseases and other high-burden conditions such as HIV/AIDS, tuberculosis, and maternal health. As a result, chronic complications of noncommunicable diseases (NCDs), including diabetic foot disease, often receive insufficient financial and political attention. Even in high-income countries, diabetic foot care may struggle to secure funding compared to other more publicly visible or politically prioritized conditions, leading to gaps in service delivery, inadequate infrastructure, and poor availability of essential wound care supplies and offloading devices [38].

Inadequate data and surveillance systems represent another significant challenge. Reliable epidemiological data are critical to inform policy planning, allocate resources, and evaluate program effectiveness. However, many health systems lack comprehensive diabetic foot registries and standardized reporting mechanisms. Without robust data, policymakers are unable to fully appreciate the scale of the problem, identify high-risk populations, or track trends in incidence, outcomes, and resource utilization. The absence of integrated health information systems further hampers cross-sector collaboration and the implementation of coordinated national strategies [38].

Workforce and training deficits magnify existing disparities in diabetic-foot services. Specialists capable of conducting foot screenings, delivering advanced wound care and performing lower-limb revascularisation are in critically short supply, particularly in rural or otherwise underserved areas. Where general health staff are present, many lack the specific skills required for effective prevention and management. Targeted capacity-building, encompassing focused education and continuous professional development, is essential; yet these programmes are chronically underfunded and inconsistently applied, leading to avoidable complications and higher amputation rates [39].

Socio-economic disparities create an additional layer of constraint. People with lower incomes frequently face high out-of-pocket expenses, inadequate or absent insurance, limited access to specialist clinics, and lower health literacy. These obstacles delay care-seeking, worsen clinical outcomes, increase disability, and place heavier economic pressures on households and society. Policies that broaden universal health coverage, reinforce financial risk-protection measures, and prioritise vulnerable populations are essential to closing these gaps [39]. Collectively, workforce, financing, and equity shortfalls underscore the pressing need for coordinated, multisector action to embed diabetic-foot care within both national and global health agendas. Strategic investments in surveillance infrastructure, workforce development, and equitable funding mechanisms are crucial to easing the burden of diabetic-foot disease and improving patient outcomes worldwide.

8. Policy Recommendations and Future Directions

Addressing the complex challenges associated with diabetic foot disease requires a comprehensive and strategic policy approach, integrating preventive, therapeutic, and systemic interventions. Strengthening primary prevention and early intervention is paramount. Policies should prioritize

routine foot examinations as part of standard diabetes care, supported by community-based education programs to enhance patient awareness and self-care practices. Evidence suggests that consistent implementation of foot screening and risk stratification can significantly reduce ulcer incidence and amputation rates [40].

Investing in multidisciplinary models of care is essential for improving outcomes and trimming health-care expenditures. Governments and health systems should dedicate resources to establish and scale diabetic-foot clinics that bring together endocrinologists, podiatrists, surgeons, wound specialists and patient educators. Compared with fragmented, single-discipline services, these integrated teams consistently deliver more comprehensive, patient-centred care [41]. Robust data infrastructure and health-economic analysis are also critical to inform policy and funding decisions. National diabetic-foot registries, harmonised electronic health records and standardised reporting on foot complications would enable surveillance, trend monitoring and rigorous assessment of interventions. Expanded support for health-economics research will allow more precise estimates of the cost-effectiveness of prevention and treatment strategies, thereby strengthening the evidence base for policy choices [42].

Creating incentives for affordable technological innovation should be another priority. Through targeted research grants, tax breaks and public–private partnerships, governments and funding agencies can accelerate the development and uptake of novel wound-care products, telemedicine platforms and offloading devices. Encouraging local manufacturing and context-specific design can further enhance affordability and access in resource-constrained settings [43]. At the same time, advancing universal health coverage (UHC) and financial-risk protection is vital to guarantee equitable access to diabetic-foot services. Policies must reduce out-of-pocket spending, broaden insurance coverage for essential foot-care devices and services, and prioritise vulnerable groups. Embedding diabetic-foot care within wider UHC frameworks aligns with global commitments to narrow health inequities and boost population health [44].

These recommendations, while comprehensive, are not without limitations. Health-system capacity and resource availability vary widely across countries, so a uniform approach may prove impractical. Implementing multidisciplinary models and sophisticated data systems demands significant financial investment and skilled personnel, resources that may be scarce in low-income settings. Moreover, cultural and social factors that influence care-seeking behaviour must be carefully addressed to secure community engagement and ensure programme sustainability.

9. Conclusion

Diabetic foot disease is among the most debilitating and expensive complications of diabetes, burdening patients, health-care systems, and societies alike. Its economic impact reaches far beyond hospital bills: lost productivity, diminished quality of life, and increased demands on social services all widen the toll. Meeting this challenge requires a decisive shift from crisis management to prevention, systematic screening, early intervention, and comprehensive patient education. To ensure scarce resources deliver maximum benefit, policy choices must rest on rigorous health-economic analyses and real-world evidence. Meaningful progress hinges on coordinated action at international and national levels. Priorities include scaling multidisciplinary foot-care teams, strengthening surveillance networks, accelerating technological innovation, and ensuring universal, financially protected access to care. Addressing social determinants of health is equally essential so underserved populations receive timely, high-quality services. Continued investment in research will spur affordable technologies and locally appropriate models of care. In particular, sustained collaboration among policymakers, clinicians, researchers, and patient advocates will catalyse the innovation needed to close current gaps. By aligning evidence-based policy with everyday practice, we can sharply reduce diabetic foot complications and help people everywhere enjoy better health and quality of life.

Abbreviations

CBAs	Cost-Benefit Analyses
CEA	Cost-Effectiveness Analysis
CUA	Cost-Utility Analysis
DFU	Diabetic Foot Ulcer
DM	Diabetes Mellitus
HICs	High-Income Countries
ICP	Integrated Care Pathway
IDF	International Diabetes Federation
LMICs	Low- and Middle-Income Countries
MDFC	Multidisciplinary Diabetic Foot Clinic
NCD	Non-Communicable Disease
NHS	National Health Service (UK)
QALY	Quality-Adjusted Life Year
UHC	Universal Health Coverage
WHO	World Health Organization

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Author Contributions

Anand Shankar is the sole author. The author read and approved the final manuscript.

Conflicts of Interest

The author declares no conflicts of interest related to this work.

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