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# Delivering value-based healthcare for people with diabetes in a national publicly funded health service: Lessons from Ireland and Wales

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## ABSTRACT

The term value-based healthcare (VBHC) describes an approach to the organization and delivery of care that emphasizes reducing the cost of care while improving outcomes. This involves increased investment earlier in the care pathway e.g., in the prevention, timely diagnosis, and screening for complications in order to maximize the overall impact of care. Key elements of VBHC include the collection and interpretation of relevant data to drive quality improvement and appropriateness of care, a focus on a continuum of care from prevention through to complications, an awareness of the financial drivers of the cost of care and a recognition that meaningful outcomes of care are those that are important to patients. Although VBHC has its origins in North America and has mostly been applied to private health systems, the principles can also be applied to national health services. In publicly funded health systems, where resources are finite, VBHC initiatives aim to eliminate ineffective care that has no beneficial impact or added value for patients and to optimize patient outcomes by delivering care that meets the changing healthcare needs of a population over time. The National Health Service in Wales has established a VBHC Office and has begun to realize the benefits of adopting VBHC approaches. The Irish Health Service Executive (HSE) can learn from the approaches used in Wales. In this paper we explore some of the principles of VBHC through case studies from Ireland and Wales highlighting how national health services are using VBHC to achieve improvement in outcomes for people living with diabetes.

## INTRODUCTION

With the increase in the prevalence of chronic conditions such as diabetes and a rise in the demand for health services, most publicly funded health services have had to adopt new approaches to delivering care. To create sustainable health care systems, a country needs to address the gap created by a population's increasing healthcare needs and limited health care resources.

Approaches include (1) evidence-based medicine that aims to ensure that only healthcare interventions with strong evidence of cost-effectiveness are implemented and (2) quality improvement approaches that aim to improve the quality of care and to increase productivity, by focusing on health care providers' compliance with processes and adherence to evidence-based clinical guidelines[1].

A more recent and emerging approach in re-designing healthcare delivery is value-based healthcare (VBHC). The concept of VBHC is evolving and has been applied differently in different health systems depending on how governments and private payers are involved in the organization and funding of healthcare[2].

In private healthcare systems in the USA, where VBHC was first defined by Porter and Teisberg in 2006 as 'the health outcomes achieved per dollar of cost', VBHC is focused on moving away from a 'fee for service' towards a 'fee for quality of care' model tied to patient outcomes[3]. In European countries with publicly funded health systems and finite resources, VBHC has been linked with population health and the need to assess value

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in terms of how resources are allocated across a population to ensure value is maximized by ensuring the right people within a population receive the right proportion of available resources at the right time[4].

Despite different definitions of 'value' the overall aim of VBHC is to achieve the best possible outcomes for people receiving care at the lowest cost[5]. Initiatives such as 'Slow Medicine' in Italy[6], 'Realistic Medicine' in Scotland[7], and 'Prudent Healthcare' in Wales[8] are examples of policy initiatives that use the principles of VBHC to reduce low value care and inequalities of access to services, and to improve patient outcomes through working in partnership with patients to provide care, based on what matters most to them.

Accurate outcomes data are key to delivering VBHC. The collection and feedback of outcomes data will enable policymakers to make informed decisions on health system reform and resource allocation; help health care providers to continuously improve the quality of care they provide through learning from the data; and can empower patients to make decisions together with their health care professionals about their care based on the outcomes that are most important to them.

In this paper we will explore some of the challenges and opportunities that the implementation of VBHC presents to a national publicly funded health service. We will do this by defining some of the elements of delivering VBHC for people living with diabetes using real-world examples from the Irish and Welsh public health service settings.

## HOW DO WE OPTIMIZE 'VALUE' IN DIABETES CARE?

### Measuring outcomes

The starting point for achieving 'value' in diabetes care is to measure outcomes. Measuring outcomes helps to identify areas where health systems are underperforming and areas where there is over-medicalization. Measuring and reporting outcomes fosters improvement and adoption of best practices, leading to further improvement in outcomes.

Historically there has been a lack data to inform decision-making in many publicly funded health systems. Many countries have attempted to address this problem through the creation of audits and registries to measure the prevalence of diabetes in the population and to collect demographic data, clinical outcomes, process data and treatment variables of different population groups. Access to such data allows health systems to segment the population living with diabetes into groups that have similar needs based on age, the presence of complications and to help identify groups who are not accessing care.

Both patient-reported experience measures (PREMS) that measure patients' experiences of care and patient-reported outcome measures (PROMS) that measure symptoms and health-related quality of life are also important to measure[9]. Standardized sets of outcomes for single conditions including diabetes have been proposed by the International Consortium for Healthcare Outcome Measurement[10]. PROMS can also be useful as a communication tool between people living with diabetes and their health care professionals to measure the quality of life and symptom burden to ensure we achieve 'value' in terms of better health outcomes for each person based on their own goals and preferences for care[4].

### Reducing ineffective care without impacting on quality of care

Studies at the global level show that at least 20% of health expenditure has no beneficial impact or added value for patients[11]. Value-based health care aims to eliminate unnecessary spending on services, treatments, tests or health technologies that do not improve patient outcomes, allowing for resources to be redeployed to interventions that result in better outcomes for patients (Case Study 1).

### Allocation of resources across the continuum of care

When considering optimizing 'value' in diabetes care it is important to consider how resources are allocated across the continuum of diabetes care from prevention through to end of life care. Health care systems often 'default to rescue', focusing on attending to the needs of patients who develop complications when the truly high-value intervention would be to prevent those complications from occurring in the first place (Figure 1).

**Case Study 1.** Blood glucose monitoring in people living with diabetes in Ireland

In the fiscal year 2014, Ireland spent over €45 million on blood glucose test strips for people living with diabetes. The 'business model' that applied at the time involved companies that manufactured blood glucose meters making their meters available (free of charge) to patients through hospital clinics or GP surgeries. The Primary Care Reimbursement Service of the Health Service Executive (HSE) would then pick up the cost of the strips that were issued (indefinitely) by community pharmacists around the country. There was little regulation of the process and companies had more control over the process (and the profits) than the health service itself.

In 2015, the Medicines Management Programme of the HSE in conjunction with the National Clinical Programme for Diabetes undertook an exercise of setting limits on the number of strips that could be provided to people living with diabetes on different treatment regimens based on their needs. For example, patients on metformin monotherapy (with little need for blood glucose testing) were limited to one box (containing 50 strips) per year while patients using insulin (for whom monitoring was really important) had no restriction imposed on their use of strips.

This simple exercise led to savings in the order of €5 million per year to the Exchequer but there was no benefit to the diabetes community from the cost savings as monies saved went into the general budget of the HSE.


**Figure 1** | Value-based healthcare aims to reduce cost across the whole pathway of care. This can sometimes involve targeted investment in high-value interventions such as prevention or screening to reduce downstream costs and to improve quality of life.

The greatest improvement in outcomes relative to cost for type 2 diabetes will come from identifying those at risk of developing type 2 diabetes and investing in interventions aimed at improving diet, physical activity, and successful weight loss to prevent or delay the onset of type 2 diabetes. The All Wales Diabetes Prevention Programme (AWDPP), led by Public Health Wales, offers targeted support to people who are at an increased risk of type 2 diabetes, with the aim of preventing them from developing this condition[12]. The Irish HSE has recently piloted a Diabetes Prevention Programme with plans to roll it out through community-based Ambulatory Care Hubs.

For those already diagnosed with diabetes, investing in secondary prevention of complications associated with diabetes through screening programmes can improve patient outcomes and should lead to reduced spending by decreasing the need for more complex specialist care of diabetes complications (Case Study 2).

**Case Study 2.** Reducing the burden of complications through population-wide screening and treatment

Ireland established a robust national retinopathy screening and treatment programme in 2013 and has reported on the first five rounds of annual screening with impressive results including 67% uptake among the consented population. Similar to the experience in Wales, it is likely that Ireland's Diabetic RetinaScreen programme will impact on vision loss from retinopathy through early detection and treatment. Almost 180,000 people have registered with Diabetic RetinaScreen[13].

Unlike the Diabetic RetinaScreen programme, the diabetic foot screening and treatment programme in Ireland does not have ring-fenced funding and does not maintain a register to facilitate a population-wide approach with active call and recall, quality assurance and all the features of a high quality screening programme.

An essential element of good value-based healthcare is being able to keep track of the entire population with the condition. Ireland does not have a National Diabetes Registry or a unique patient identifier. This prevents Ireland from being able to translate the benefits seen in diabetic retinopathy into a reduction in other reversible complications such as diabetic foot ulceration and limb loss.

Investing in self-management education and on-going support is also important as it provides people living with diabetes the knowledge, skills, confidence, and tools to self-manage their diabetes on a daily basis. It can improve people's quality of life, reduce their risk of developing complications and empower people living with diabetes to work in partnership with their healthcare providers in managing their diabetes. Case Study 3 describes how VBHC support has led to making new technology for glucose monitoring more widely available to support diabetes self-management.

**Case Study 3.** Introducing new technology for glucose monitoring to support diabetes self-management

Over recent years technology has rapidly developed in glucose monitoring technology, with the use of intermittently scanned and continuous glucose monitoring (CGM) sensors, as a non-invasive alternative to finger-prick or capillary blood glucose testing.

There is good evidence that this type of technology improves glycemic control thereby reducing the likelihood of developing diabetes related complications, reduces events such as hypoglycemia which require paramedic attendances or hospital admissions, and promotes increased self-management for people living with diabetes, improving quality of life[14].

Most of the use of this technology has been focused on people living with type 1 diabetes in secondary care settings, but new guidance from both the National Institute for Health and Care Excellence (NICE) and Health Technology Wales now advises the use of CGM technology for select people living with type 2 diabetes. Since much of type 2 diabetes care takes place in the community setting, this has led to a need to introduce such technology in primary care. The value of enhancing self-management in diabetes in the longer term is clear, but barriers exist including concerns over resource provision, staff training, data governance, and costs which need to be overcome.

The support of VBHC in delivering this approach sets out to enable the appropriate use of this advance in technology for the benefit of patients while ensuring value for the health service and overcoming barriers to implementation.

### Adopting integrated models of care

In countries with publicly funded health systems the focus of VBHC is often on coordinating patient care between different providers by adopting integrated models of care where people receive 'a continuum of health promotion, health protection and disease prevention services, as well as diagnosis, treatment, long-term care, rehabilitation and palliative care services through the different levels and sites of care within the health system and according to their needs'[15].

Both Ireland and Wales, like other European countries, have invested in integrated models of diabetes care to make healthcare delivery more efficient. Because they often lead to a 'Shift Left' with care moving out of hospital and into the community, these approaches can save resources by reducing costly hospital care and are usually valued by people living with diabetes, including our most vulnerable patients such as frail or nursing home residents who are at risk of prolonged or recurrent hospital admission and diabetes-related complications, as they can receive the care they need in a community rather than in a hospital setting. Integrated care models also aim to promote equality of care, with better access for those who need it most, In Case Studies 4 and 5 we outline how funding at national and local levels has enabled the implementation of integrated models of care.

Achieving 'value' in diabetes care is a necessary approach as the costs of diabetes care continue to rise and the prevalence of the condition grows. Increasing numbers of people are living with diabetes for many years. If we are to create sustainable healthcare systems and to achieve better outcomes for our diabetes populations the best use of our precious resources must be made.

Improving outcomes for people living with diabetes should lead to reduced spending by decreasing the need for more complex and ongoing care. For example, empowering people with diabetes to self-manage their condition should result in reduced costs in treating diabetes complications such as amputations or blindness.

Delivering value-based healthcare involves a culture shift. If we are to tackle the challenges modern public healthcare

**Case Study 4.** National Funding for the Enhanced Community Care Programme

In 2020 the Irish Health Service Executive launched the Enhanced Community Care (ECC) Programme. This ambitious transformation programme provided funding to establish Community Specialist Teams delivering an integrated approach to care for older persons and people living with chronic conditions including type 2 diabetes. The new community-based specialist teams work in Ambulatory Care Hubs and work closely with General Practitioners and Practice Nurses with the aim of meeting the needs of these populations where possible in primary and community care settings and thereby keep people out of hospital.

Key enablers of the ECC transformation programme include:

1. a new chronic disease management payment to General Practitioners (initiated in 2019) for delivering 2–4 visits per year to patients entitled to medical cards (a means tested entitlement for which 33% of the population is eligible),
2. the COVID-19 pandemic with an imperative to avoid patients congregating in busy hospital waiting rooms and the Slaintecare 10 year cross-parliamentary plan with its vision to shift care away from hospitals and closer to the patient's home[16].

The ECC programme is a good example of a system-wide attempt to deliver many of the features of value-based healthcare including:

1. an emphasis on disease prevention with self-management education programmes offered in Ambulatory Care Hubs to people living with diabetes and cardiac and pulmonary rehabilitation programmes offered to those living with heart disease and chronic obstructive pulmonary disease (COPD).
2. involvement of general practitioners earlier in the disease pathway (by encouraging opportunistic screening and providing easier access to diagnostics in the community) and discouraging traditional referral to the hospital-based specialist team.
3. Delivering a population-wide approach with recognition of the importance of social determinants of health and the importance of tacking inequalities as a way of improving outcomes.

The investment in the ECC programme is in the order of €250 million annually with most of the funding going to staffing new community-based specialist teams working in Ambulatory Care Hubs. Its success will depend on delivering care that is of value to patients and not just closer to their home. Initial attempts to capture the success of ECC through patient-reported outcomes measures has begun.

**Case Study 5.** VBHC funding for a Community Diabetes Hub

In Cardiff and Vale University Health Board in Wales, VBHC funding has enabled the development of a Community Diabetes Hub for people living with type 2 diabetes to promote the prevention of type 2 diabetes and to provide self-management education and to support and care for people living with type 2 diabetes.

A fully integrated multi-disciplinary team consisting of dieticians, community diabetes nurse specialists, as well as General Practitioners with a special interest in diabetes and community-based consultants will deliver diabetes care in the community.

Using the wealth of data that already exists in primary care including National Audit data and a new Audit plus platform, outcomes such as HbA1c and completion of the essential care processes of diabetes, as well as measuring patient-reported experience measures (PREMS) and patient-reported outcome measures (PROMS) will enable us to evaluate this model of care.

systems are facing in delivering diabetes care, clinicians, financial managers, operational managers, and informaticians need to work together to achieve high value care across the entire continuum of care.

Accurate and comprehensive standardized outcome measurement is a major part of VBHC. Governments and healthcare organizations must invest in the acquisition of outcome data in the same way as they invest in financial and process data if we are to ensure value for patients.

## DISCLOSURE

The authors declare no conflict of interest.

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