

White paper

IMPROVING THERAPY ADHERENCE COST-EFFECTIVELY WITH MEASURABLE IMPACT

A UK case study in diabetes



INTRODUCTION

More than 30 years after C. Everett Koop famously observed that “drugs don’t work in patients who don’t take them”¹, poor adherence remains a significant barrier to achieving the maximum benefits from medicines – and a key source of waste in the UK NHS. Building on evidence and experience to date, a new therapy adherence program from IQVIA, offers a simple, cost-effective and scalable solution with measurable success. Its compelling results, demonstrated here in diabetes, support its role as a valid tool to help improve efficiency and outcomes by facilitating the optimal use of medicines in a range of primary care diseases.

From incremental advances to scientific breakthroughs, modern medicines offer exceptional potential to improve population health. In the UK, nearly three million drugs are prescribed every day at an annual cost to the NHS of more than £9 billion.² Used appropriately to prevent, cure or manage a range of illnesses, they can significantly enhance quality of life, disease outcomes and longevity. Critical to achieving these goals, however, is adherence to treatment – drugs will only work in patients who take them.

AN ENDEMIC PROBLEM

Medication adherence has been defined in various ways, including broadly as the “extent to which a person’s behavior...corresponds with agreed recommendations from a healthcare provider”³ and more specifically as “the extent to which a patient acts in accordance with the prescribed interval and dose of a dosing regimen”.⁴ Good adherence to drug therapy correlates strongly with positive health outcomes.⁵ Nevertheless, despite its recognized importance, studies consistently reveal the failure of many patients to follow prescribing instructions; estimates suggest that between 20%–30% of individuals are non-adherent to potentially curative or symptomatic treatments and 30%–40% to preventive medicines.⁶ However, the poorest rates are reported among those taking long-term medications, where a significant drop-off is observed after the first six months of therapy⁷ and patients typically take only about half their prescribed doses.⁸ Research has shown that even after just ten days of treatment, almost one third of patients with a chronic disease are already non-adherent, either knowingly or unintentionally.⁹ While variable by condition, adherence overall in this patient population is estimated to average only 50%.⁸

MAJOR CLINICAL AND ECONOMIC IMPLICATIONS

Physicians have cited patient non-adherence as their leading professional concern, challenging their ability to provide optimal care.¹⁰ Among its serious clinical consequences are increased risk of hospitalization, disease progression and premature mortality – amounting in the EU to an estimated 194,500 deaths every year.¹¹ Failure to take medicines correctly and therefore derive the optimal benefits also has significant economic implications. In the UK, it is estimated to cost the NHS around £300m annually in wastage and more than £500m every year in health gains foregone in just five therapeutic areas.^{12,13}

Set to worsen in line with ageing populations, greater use of pharmacotherapy and the growing burden of chronic diseases, non-adherence is considered

a problem of such magnitude that “increasing the effectiveness of adherence interventions may have a far greater impact on the health of the population than any improvement in specific medical treatments.”^{14,15} At a time of unprecedented pressure on the NHS to deliver better care with fewer resources, it offers powerful potential to drive savings and quality improvements by facilitating medicines optimization – now recognized as key to reducing wastage, enhancing drug safety and ensuring the best possible outcomes.¹⁶

CONTINUING SEARCH FOR IMPACTFUL APPROACHES

Decades of research into non-adherence reveal the complexity of a problem that stems not only from patient behavior (as a result, for example, of forgetfulness, fear of side-effects, lack of information and understanding¹⁷) but also disease- therapy- doctor- and system-related issues. Thus, while ultimately in the hands of the patient, adherence is acknowledged as a shared responsibility requiring the coordinated effort of multiple stakeholders.^{3,6}

EVIDENCE TO DATE

Reviews of adherence-enhancing strategies reveal varying degrees of success, with many programs seen as complex, labor intensive and costly.^{18,19} A recent Cochrane database analysis concluded that the majority of those tested in chronic diseases have been complicated and not very effective, highlighting an ongoing need for interventions that allow the full benefits of treatment to be realized.⁸

Reflecting the complexity of non-adherent behavior, researchers have noted the lack of common attributes among successful programs.⁸ However, evidence to date does suggest that in terms of promoting positive behavioral change:

- **The most effective adherence interventions are simple**²⁰
- **Patient education and communication are pivotal but require the reinforcement of additional strategies, such as counseling, reminders (e.g., text messaging) or self-monitoring**^{22,23}

- **Good pharmacist/patient connectivity is a strong predictor of adherence.²⁴ The importance of this association can be seen in the success of various pharmacist-led interventions in cardiovascular (CV) disease (e.g., post-ACS, hypertension, lipid-lowering), depression and other long-term conditions.^{25,26} The UK New Medicines Service launched in 2011, for example, cost-effectively increased adherence rates by 10% among patients taking a newly prescribed medicine for, among others, hypertension, asthma and type 2 diabetes.²⁷**

Against this background, the following case study illustrates how a therapy adherence program built around these foundational components can offer an efficient, compelling and scalable solution to support the optimal use of medicines in primary care. Its demonstrated impact in the UK, uniquely measurable using IQVIA Dynamic Prescription Data, is illustrated here within the context of diabetes - one of the most prevalent, fastest growing and costly chronic diseases, where outcomes are particularly compromised by poor medication adherence.

PHARMACY PATIENT ADHERENCE PROGRAM: SUPPORT AT A CRITICAL TOUCHPOINT

Recognizing the challenges of adherence in diabetes and opportunities to support optimal management of the disease in primary care, IQVIA worked with a manufacturer to develop and run a nationwide Pharmacy Patient Adherence Program. Attached to its DPP-4 inhibitor for Type 2 Diabetes the intervention is designed to help patients better understand key aspects of their treatment, including: why they have been prescribed their medicine; how and when it should be taken; and the importance of not discontinuing the drug without consulting their doctor.

The program is operated through 6,700 participating community pharmacies, comprising a vast majority of the corporate pharmacy chains and around one third of UK independents. Pharmacists have been specifically called out by the government as a vital resource in championing medicines optimization,³⁷ and they themselves believe their teams can be used more to detect signs of non-adherence and increase

patient awareness of its impact.³⁸ The decision to build the program around them acknowledges their unique (and proven) potential in the patient journey to intervene and advise on the appropriate use of medicines - and to do so at scale. In this case their involvement to date has enabled outreach to thousands of patients, allowing maximum impact across the target population.

Delivered in the pharmacy as a conversation with patients, the program comprises:

- **Pop-up medication adherence message** triggered at the point of drug dispensing using additional functionality in standard pharmacy software. Reinforcing the patient's prescribing instructions, the message serves to remind them how they should take their medicine, every time they collect their prescription (Figure 1). It also directs them to the patient information leaflet included with the product, for more specific details.
- **Printed Patient Support Leaflet** for patients to take away as a written summary of the prescribing information, including "dos and don'ts" on best use of their medicine (Figure 2).

Figure 1: Program pop-up message (medication adherence message to the patient)

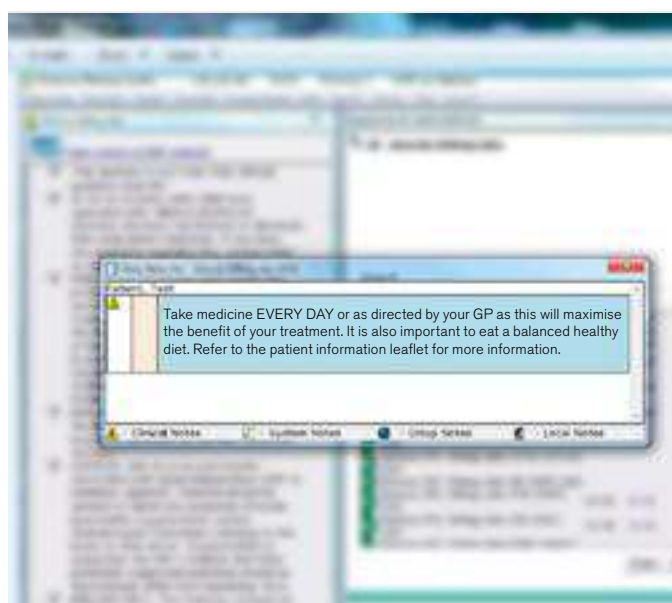
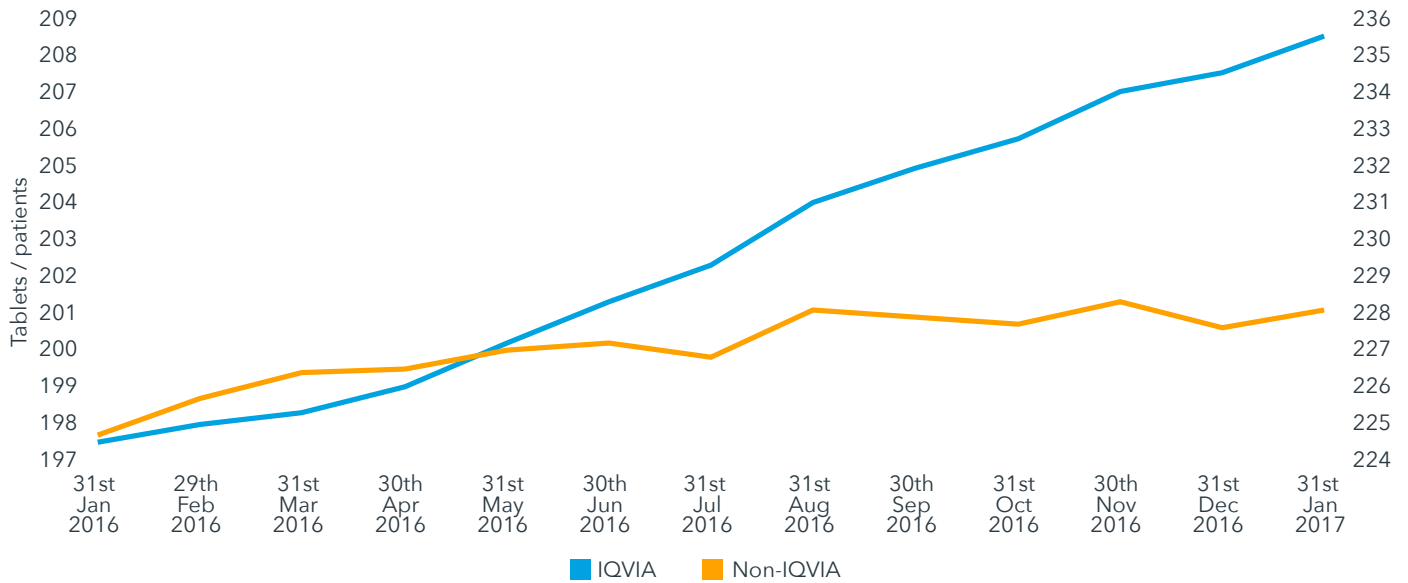


Figure 2: Average patient total tablet collection over 12 months



Source: 2017 IQVIA study over 12 months using Longitudinal patient data

CASE STUDY: IMPROVING MEDICATION ADHERENCE IN DIABETES

Diabetes is a significant and worsening health problem globally. In the UK, it now affects around 3.8m people, more than dementia and cancer combined.²⁸ A key concern is the rising rates of Type 2 diabetes (T2D) (around 90% of all cases), which have grown by 60% over the last decade and continue to rise.²⁹ Despite effective pharmacotherapy, successful care delivery remains a challenge, with fewer than 50% of patients achieving recommended glycemic targets.³⁰ Medication non-adherence, exacerbated by the silent nature of diabetes, high reliance on self-monitoring, and increasingly complex, multi-drug regimens, is an important causal factor.

From studies across countries, non-adherence rates of between 6.9% and 61.5% (mean rate 37.7%) have been identified in T2D.³¹ In the UK, GPs have estimated that 30% of patients with T2D are non-adherent. Most recently a meta-analysis by researchers in Leicester, based on the health records of 318,125 T2D patients, revealed that 37.8% - more than 1 in 3 - fail to take their prescribed medication.³³

Non-adherence in diabetes has profound implications, exposing millions of patients to serious and preventable CV disease (stroke, myocardial infarction), visual impairment (leading to blindness), kidney failure (requiring dialysis or transplantation) and limb amputation. Approximately 80% of annual NHS spending on T2D (currently in the region of £8.8b) is attributable to treating these complications.^{28,34} Based on reported rates of non-adherence, IQVIA has estimated that around 7% of this cost - equating to £500m annually - is driven by sub-optimal therapy adherence.³⁵

Conversely, good adherence is associated with a lower risk of complications, mortality and economic burden; health records reveal that adherent T2D patients are 10% less likely to visit hospital and 28% less likely to die than those who fail to take their medication.³³ Initiatives directed at reinforcing adherence thus have a critical role to play in preventing or delaying progression of the disease, with benefits to the health system and patients alike.³⁶

UNIQUELY MEASURABLE

Managed and monitored by IQVIA, the Pharmacy Patient Adherence Program is uniquely supported by access to the company's proprietary Dynamic Prescription Data. This captures information on the drug prescribed, the product dispensed and the prescribing physician, linked to an anonymous patient ID that is specific to a particular pharmacy.

The use of this data allows detailed, ongoing analysis and evaluation of the program's impact on adherence. Critically, it enables comparison of pharmacies running the service with those that are not participating, thereby providing an important benchmark control. The results are quantified in terms of tablets (prescriptions) collected, considered a best-in-class measure in adherence research.⁸

COMPELLING, COST-EFFECTIVE RESULTS

Simple, scalable and sustainable as an intervention that can be cost-effectively integrated into existing dispensing practices, the adherence program has delivered exceptional results. Over a 12-month period following its implementation, total use of the medicine across more than 80,000 patients has increased by

8.6% in participating pharmacies versus 2.6% in non-program pharmacies (Figure 2). The implications of this increase in adherence in terms of costs and outcomes are magnified by the sheer volume of patients involved – paving the way for the program's effective application in a broad range of chronic disease.

TAKING A LEAD IN ADHERENCE

At a time when chronic, long-term conditions threaten to engulf the NHS, medicines optimization is at the forefront of strategies to help stakeholders across the healthcare spectrum obtain the maximum value from investment in and use of medicines. Adherence to therapy is a critical enabler in this process, requiring multidisciplinary efforts to encourage better patient understanding and ownership of their treatment. As this case study demonstrates, manufacturers are well positioned to take a lead in implementing simple, scalable solutions, supported by the data and analytics to monitor their progress, that can be cost-effectively embedded into health system processes and significantly impact adherence, disease burden and patient outcomes.

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