Beyond adherence:

Driving future healthcare delivery through patient support programmes

Sciensus

Executive summary

Advancements in medical technology, coupled with macroeconomic challenges exacerbated by the cost of healthcare, have led to medication adherence becoming a vitally important issue for patients, healthcare providers and pharma companies.

This has been driven by new high tech and complex medications such as biologics which can improve health when taken properly but require a relatively high drug spend. However, these medications have also led to benefits and opportunities for patients to be treated successfully using different methods, for example while supported at home, easing pressure on hospital clinics.

Sciensus has been involved throughout these developments as the medical landscape has changed and is at the forefront of research and development of solutions that improve adherence and persistence amongst patients.

As a pivotal provider of patient support programmes (PSPs) in the United Kingdom, particularly for biologics and biosimilars, we have learned that taking a holistic view of how patients behave is essential in reducing unnecessary healthcare costs. Through our more than 70 million patient interactions, we have shown that digital and physical support outside of the clinical setting are key elements that help patients optimise their adherence and health outcomes.

The following summarises how Sciensus has provided innovative solutions, as the biologic and biosimilar market has developed in the UK. It also illustrates how patient support can be provided for complex and expensive medicines.

Timeline of biologics, biosimilars and patient support programmes in the United Kingdom

1982
- The first recombinant biologic approved by the US FDA and introduced in the UK shortly afterward.

1990s
- Biologics become the UK standard for treating previously hard-to-manage conditions.
- Sciensus begins involvement in patient support for biologics.

2000
- Sciensus expands its services to support patients using biologics including more comprehensive patient support programmes.

2006
- Biologics account for approximately 15-20% of the NHS drug budget, despite only treating a relatively small number of patients.
- European Medicines Agency (EMA) approves the first biosimilar in Europe.

2007
- EMA establishes the guidelines for biosimilars in Europe.

2010
- NHS spending on biologics rises significantly, with adalimumab alone costing the NHS around £400 million per year.
- Biosimilars provide projected savings of £300 million annually by switching from biologics.
- Sciensus expands its patient support services and helps facilitate the switch from originator biologics to biosimilars.

2017
- Sciensus carries out behavioural research across a large (180K) patient dataset.

2018
- With the expiration of the patent for Adalimumab, Sciensus plays a critical role in facilitating widespread adoption of biosimilars for this widely used drug.
- Sciensus undertakes a pilot study with biologics and an approximate 3,000 patient test group.

2020
- By 2020, the UK saved £1 billion from the use of biosimilars across different biologic treatments.
- Sciensus initiates an Adherence & Persistence (A&P) pilot study delivering a 10% improvement in time on treatment.
- Sciensus expands its digitally-led services to include remote consultations and digital health tools, ensuring patients could continue their biologic and biosimilar therapies with minimal disruption.

2021
- Sciensus collaborates with an academic institution (UCL) on an enhanced digital proposition.
- NHS Long Term Plan emphasises the continued use of biosimilars as part of its strategy to ensure the sustainability of the healthcare system.

2022
- A pilot A&P digital programme for all patients taking an adalumimab biosimilar leads to a 20% improvement in patient persistence.
- Biologic spending in the UK reached approximately £3 billion annually.

2024
- Sciensus works on a service improvement project related to medication adherence with select patient groups in partnership with a French healthtech company.

Overview

What is adherence and why is it important to patient care?

How well a patient follows medical advice and correctly takes their medications as prescribed is known as medication adherence. The level of adherence is a critical factor in achieving the best possible therapeutic outcomes and minimising healthcare costs. When patients don't follow their medication regimen correctly, they can experience disease progression and increased hospitalisations, this can lead to higher healthcare costs.

However, we need to look beyond simple adherence rates to gain insights that we can use to drive optimal patient outcomes and to evidence improved medication efficacy.

With the introduction of biologics (more complex and highly technical medications), the cost of drugs have increased hugely and become a much bigger proportion of healthcare related spend. This means that adherence and patient experience are ever more important to gain cost effectiveness.

Looking 'beyond adherence'

The way patients take medicines is just one aspect of their journey but a comprehensive understanding of, and insight into, the patient is essential for optimising healthcare and medication efficacy.

Looking 'beyond adherence' is all about understanding the patient's entire experience, including their beliefs, lifestyle, and the psychosocial factors that influence their decision-making processes and how they deal with a sub-optimal health state.

Support outside of the healthcare setting, including patient support programmes (PSPs), has the potential to provide this deeper insight, moving beyond simple adherence strategies and metrics to encompass a more holistic view of patient care.

Sciensus' involvement in adherence and persistence (A&P) is closely related to the development and rollout of biologics and biosimilars in the UK healthcare industry. PSPs have been a critical aspect of biologic and biosimilar therapies, evolving to meet the specific needs of patients and healthcare providers.

Sciensus has provided PSPs in the UK since the early 2010s, particularly for those on complex therapies such as biologics, biosimilars, and specialty drugs for chronic conditions like multiple sclerosis, rheumatoid arthritis and oncology treatments.

By looking at long term trends evidenced through these PSPs, Sciensus has developed an expertise in adherence as well as the wider issues involved in holistic care. We understand what people need from support outside of the clinical setting to make the most of their medications and in turn, to support pharmaceutical companies and healthcare providers to drive optimal outcomes and maximise efficacy.
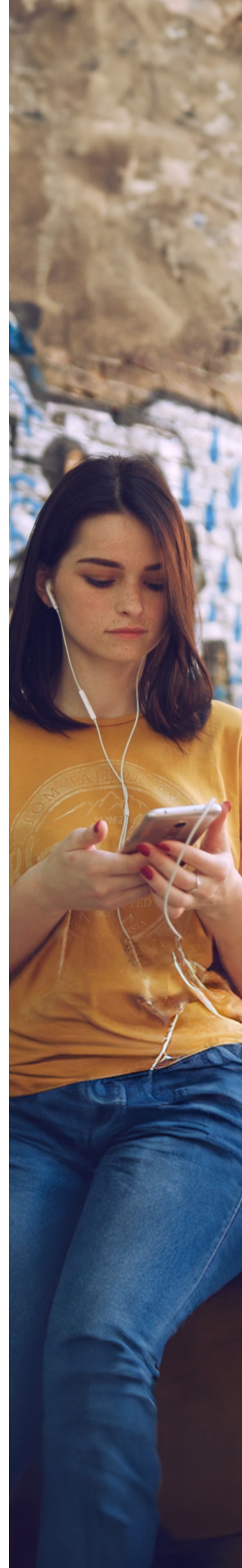
Understanding patient behaviour and its impact on adherence

Medication non-adherence is a major societal problem with serious clinical and economic consequences, associated with 200,000 deaths and 125 billion Euros of costs annually in Europe. Studies show that only around half of patients take their medicines as prescribed, leading to poor clinical outcomes, increased hospital admissions and not to mention, a huge amount of wasted medication, which is a strain on the health care system.

Sciensus has insights from over 70 million patient interactions which gives us a deep understanding of patient behaviours and the factors affecting adherence. Our experience is reflected by statistics that show adherence rates of 80% or more are needed for optimal therapeutic efficacy. Adherence rates can reduce as time passes after the initial prescription is written, or as barriers emerge or multiply. We need to understand those barriers and the drivers behind those dropping adherence rates.

Sciensus has been involved throughout as the medical landscape changes and medications become more complex and expensive. Our expertise has placed us at the forefront of research and development of solutions that improve adherence and persistence.

From our work, we know that digital and physical support outside of the clinical setting are key elements that help patients optimise their adherence and reduce unnecessary healthcare costs.

The digital tools available

A number of tools are currently available to deliver digitally-enabled patient support programmes (DPSPs).

They offer solutions for supporting patient care and gathering insight into patient behaviours outside of the clinic setting. These can include:

Digital health platforms

Mobile health apps: These are designed to help patients manage their medication schedules. They provide reminders and offer tracking features for adherence. They can also offer patients the ability to record their symptoms and side effects, providing valuable insights to healthcare providers. An example would be the Sciensus Intouch app and the Sciensus Cancer Companion app.

Remote monitoring services: These can be used, for example, to send blood pressure readings to clinicians.

Wearable technology: These can include, for example, continuous glucose monitors for diabetes management.

Patient and clinician portals

These allow patients and clinicians to access health records, communicate with their healthcare team, schedule appointments, and receive reminders for medication and follow-up visits. An example of this would be the Sciensus Cancer Companion where a portal for clinicians enables them to view data input by their patients.

Understanding patient support programmes

Patient support programmes (PSPs) are typically delivered outside of the clinical setting, including through digital channels.

Digitally-enabled patient support programmes (DPSPs) have frequently been used in Europe to enhance adherence while providing deeper patient insights. These programmes collect real-time data on patient behaviours, symptoms, and treatment responses. This data can be analysed to identify trends, understand patient needs, and develop personalised care plans.

DPSPs are being continuously improved beyond simple adherence tools to become powerful data platforms for generating clear, actionable insights. These programmes can improve healthcare provider engagement and drive better decision-making for pharmaceutical companies. DPSPs assist patients in managing their health conditions through patient education and engagement, behavioural interventions, regular monitoring and feedback and support systems including peer support groups, for example Progeria Connect - a global online community for patients, families, carers, clinicians and children.

Using DPSP data collection and analysis

The vast amount of data generated by DPSPs can be analysed to gain insights into patient behaviour, treatment efficacy, and overall health outcomes.

Sciensus uses its millions of patient interactions to gain a deep understanding of patient behaviours so we can support the best health outcomes. Key steps in this process include:

- **Data collection:** Collecting data from various sources. In the case of Sciensus, this includes the Intouch app, which has more than 130,000 active users and the Sciensus Cancer Companion app which have in excess of 130,000 active users.

- **Data integration:** Integrating data from multiple platforms to create a comprehensive patient profile. This data can then be analysed and insights can be made using instruments such as the Sciensus Insights+ pharma portal. Here, for example, the user can look at sub-groups of patients, by therapy or molecule type, review adherence by specific characteristics and export data for presentations and further analyses.

- **Data analysis:** Using advanced analytics and machine learning to identify patterns and trends. In particular, Sciensus has access to repeated measures of the same data points over time, supporting analysis of longitudinal data.

The analytical process to generate useful actionable insights from DPSPs includes looking at the following areas:

Patient adherence and engagement

- **Behavioural patterns:** Analysing adherence patterns by sub-groups to identify factors influencing medication adherence.

- **Engagement metrics:** Tracking how often and in what ways patients interact with the DPSP.

Treatment efficacy

- **Outcome tracking:** Monitoring patient outcomes to assess the effectiveness of treatments.

- **Symptom correlation:** Correlating symptom reports with medication adherence and lifestyle changes.

Personalised interventions

- **Risk stratification:** Identifying patients at higher risk of non-adherence or poor outcomes.

- **Tailored content:** Providing personalised educational content and interventions based on individual patient data.

Healthcare provider (HCP) insights

- **HCP engagement:** Measure HCP engagement with the DPSP and how it can positively impact patient outcomes.

- **Feedback mechanisms:** Collect and analyse feedback from HCPs to elevate the patient experience overall.

Operational efficiency

- **Resource allocation:** Optimise the allocation of resources based on patient needs and programme effectiveness. Our understanding of trends and historical data makes informed and specific decisions possible for patients who need a personalised treatment.

- **Process improvement:** Identify areas for process improvement within the DPSP.

How can we use insights from DPSPs to improve patient outcomes and medication efficacy?

Details of the type of insights that can be gathered from DPSPs and how they can be developed into actionable insights are outlined in Table 1.

Table 1. Data and insights gathered within DPSPs and how they can enhance the patient journey

Data and insights gathered	Using insights for better patient outcomes
DPSPs collect real-time data from patients on medication adherence, side effects, symptoms, and patient-reported outcomes. These provide immediate and continuous insights into behaviours, preferences, and adherence patterns.	Data can be analysed to improve care strategies and patient engagement.
Deep analysis can be used to identify trends, drivers and patterns in patient behaviour. This can reveal underlying issues such as medication side effects, lifestyle barriers or cultural issues.	These insights can be used to tailor interventions that address specific patient needs, ultimately enhancing their treatment journey and improving health outcomes.
DPSPs deliver real-world data (RWD) that is essential for understanding how treatments work in everyday settings outside of controlled clinical trials.	RWD allows healthcare providers to adjust treatment plans based on real-life effectiveness and safety.
DPSPs deliver individual data around each patient's unique needs and preferences.	Individual data including lifestyle and treatment response can be used to develop personalised interventions including tailored medication reminders and specific content. These can increase patient engagement, adherence, and satisfaction.
DPSPs allow for real-time monitoring and reporting of side effects and symptoms.	This data, including free text, can be analysed in real-time using programmed algorithms. By understanding these aspects, healthcare providers can proactively help patients manage side effects and provide better patient support.

Case study

Sciensus is currently working on a service improvement project related to medication adherence with select patient groups in partnership with a French healthtech company.

We are using a behavioural diagnostic tool to gain insights into medication-taking behaviours in 5,000 patients across the four therapeutic areas of Crohn's Disease, psoriasis, multiple sclerosis and HIV. These patients are asked to participate in a survey in return for personalised feedback regarding their health.

We will use the survey to predict medication non-adherence risk for individual patients and identify those who are likely to 'drop off' their medication. The study will identify the behavioural factors contributing to this as well as drivers of future risk. This will help us to develop a programme of personalised behavioural assistance.

The project is in its early days, with the results set to be published in late 2024.

Sciensus' involvement in adherence and persistence projects

The case study should be viewed in the context of a historical commitment on the part of Sciensus to a rigorous adherence and persistence programme (see Figure 1).

Sciensus has been involved in a number of projects to understand and enhance patient adherence and improve the overall patient journey:

Project 1 – inflammatory diseases

Provides education, nurse visits, home delivery, and digital tools for symptom tracking and injection reminders.

Project 2 – immune system

- Offers personalised injection training, emotional support, and 24/7 nurse support lines for patients with autoimmune conditions.
- Aimed at conditions such as rheumatoid arthritis and psoriasis.

Project 3 – immune system

- Offers home delivery, self-injection training, and follow-ups through digital tools.
- Supports biosimilars.

Project 4 – inflammatory/immune system

Provides home infusion services, nurse support, and regular monitoring, helping patients manage treatments effectively.
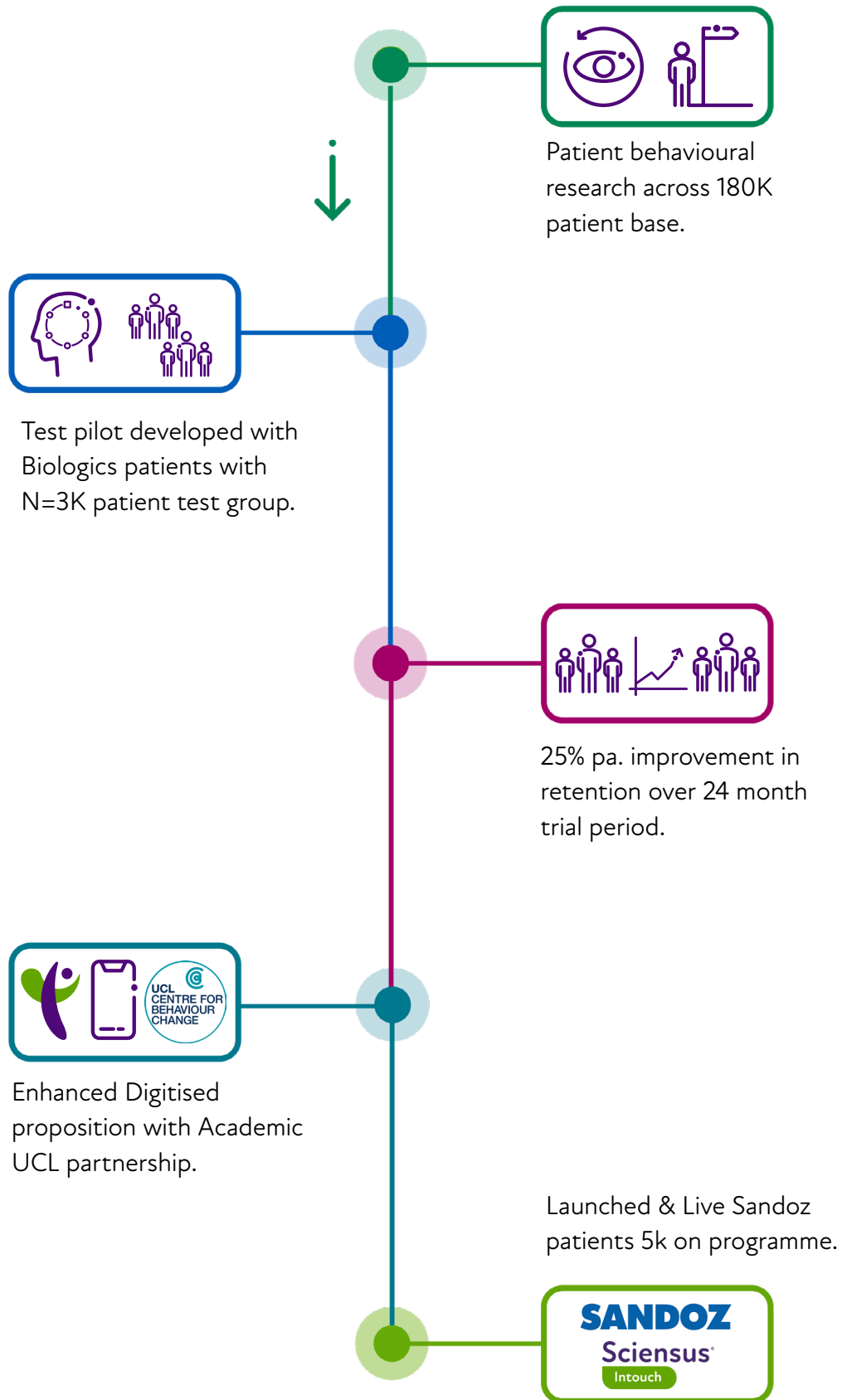
Project 5 – multiple sclerosis patient support programme

Offers home infusion services, nurse visits, and digital health tracking.

Figure 1. Sciensus PSP overview

A proven behavioural led Patient Insight and Influence program

Patient behavioural research across 180K patient base.

Test pilot developed with Biologics patients with N=3K patient test group.

25% pa. improvement in retention over 24 month trial period.

Enhanced Digitised proposition with Academic UCL partnership.

Launched & Live Sandoz patients 5k on programme.

Notable other examples of Sciensus' work include:

2020 - Sciensus adherence and persistence pilot study. The study used Sciensus' own data, including more than 10 cohorts of patients collected quarterly over 12 months. It covered what we believed were needs of patients at those points, (e.g. side effect concern, lifestyle, travel). Proved that medication persistence could be improved by at least 15%.

2021 - Sciensus collaborates with and academic institution (UCL) on an enhanced digital proposition.

2022 - A pilot adherence and persistence digital programme for all patients taking an adaluminab biosimilar. The digital programme, accessible via the Sciensus Intouch app, had access to ~7.5k patients of which ~3.5k were digital app users. The findings showed that most patients understand the necessity of their medication and that patients get worse over time if left without any support.

The future path

Shaping the future of healthcare.

Patient insights are shaping the future of healthcare, making personalised care and patient-specific medication a reality. Real-world data is becoming increasingly important for drug development and regulatory approvals. As we continue to gather and analyse patient data, we can develop more targeted treatments and improve health outcomes for patients worldwide.

Smart, digitally-enabled patient support programmes (DPSPs) seek to introduce an innovative approach to medication adherence and persistence by embedding personalised care throughout the patient journey. By harnessing data from key domains - such as patient demographics, medication regimens, and transactional activity (e.g., nurse interactions, inbound and outbound calls) - these programmes categorise patients by risk level, enabling tailored interventions that address individual needs.

Sciensus continues to expand its DPSP offerings across a range of therapeutic areas, including oncology, rare diseases, and immunology. The company works with an increasing number of pharmaceutical partners to ensure patients can receive cutting-edge treatments at home, with comprehensive support programmes that ensure adherence and improve outcomes.

Sciensus continues to focus on our leading-edge digital solutions that make it easier for patients to manage their treatment, while enabling healthcare professionals and pharmaceutical companies to deliver better medicine-related outcomes. These include our range of patient facing apps including, Sciensus Intouch app and Sciensus Cancer Companion app for patients; Sciensus Connect, our leading-edge platform developed with the NHS for NHS clinicians; and our Insights+ portal for our pharmaceutical partners, global online communities, families, caregivers, clinicians and reserachers, enabling connections with others on a similar journey.

Conclusion

The development of high-tech medications such as biologics and biosimilars – and their relatively high price – means that adherence has become a vitally important issue.

Sciensus has been involved throughout as the medical landscape changes, innovating and expertly facilitating the uptake of these new medications and supporting a greater understanding of patient behaviour.

Our focus on research and the development of solutions means that Sciensus had been integral to projects that improve adherence and persistence. Through our more than 70 million patient interactions, we have shown that a mix of digitally-enabled and human support outside of the clinical setting are key elements that help patients optimise their adherence and reduce unnecessary healthcare costs.

Moving beyond simple adherence to a more holistic understanding of patient care is essential for improving health outcomes.

DPSPs have the potential to revolutionise patient care by providing actionable insights that go beyond adherence. By effectively collecting, integrating, and analysing data, these programmes can improve patient outcomes, enhance healthcare provider engagement, and drive better decision-making in healthcare. The future of DPSPs lies in their ability to continuously evolve and adapt to meet the needs of patients and healthcare providers.

By leveraging real-world data, healthcare providers can optimise treatment plans, enhance patient satisfaction, and reduce healthcare costs.

References

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Johnson, K. L., & Wang, M. (2020). Advanced Analytics in Healthcare: Applications and Opportunities. Healthcare Analytics Journal, 15(2), 123-135.

To find out how Sciensus can help improve patient adherence and persistence, plase contact our team at **patientinsights@sciensus.com**