

YOURmeds for medication support in long-term conditions

Medtech innovation briefing

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Overview

NICE has developed a medtech innovation briefing (MIB) on [YOURmeds for medication support in long-term conditions](#).

The information provided includes a description of the technology, how it's used and its potential role in the treatment pathway. A MIB also includes a review of relevant published evidence and the likely costs of using the technologies, but they are not NICE guidance and do not make any recommendations on the value of using the technologies.

[What are MIBs?](#)

Summary

- The **technology** described in this briefing is YOURmeds. It is used to manage medications for people with long-term conditions.

- The **innovative aspects** are that it is the first digital medication dosage system that allows real-time monitoring of medication adherence.
- The intended **place in therapy** would be as an alternative to administered medication support (when people are given their medicines rather than taking their medicines themselves) in people with long-term conditions.
- The **main points from the evidence** summarised in this briefing are from 3 case studies including a total of 69 people, with more than 39,000 unsupported medication rounds. It suggests that YOURmeds increases adherence and costs less.
- **Key uncertainties** around the evidence are that YOURmeds has only been evaluated in pilot studies with small patient numbers without a comparator. Also, data is only presented in summary form.
- **Experts advised** that YOURmeds has the potential to improve adherence and so improve health outcomes and reduce hospital attendance or admissions. They noted that there may be potential risks associated with this technology including technology failure, incorrect pharmacy medication dispensing, and potential risk of overdose. But 1 expert noted that these are low risks or can be mitigated. Two experts advised that further research focusing on adherence, health outcomes and the value of the support network is needed to address the uncertainty in the evidence base.
- The **cost** of YOURmeds per person is £628 in year 1 and £468 in year 2 (excluding VAT). This is offset by provision from the company of free packaging and a payment of £10 per patient per month. The cost of standard care varies depending on geographical location and NHS services (£2,200 to £6,400 per person per year, based on 1 visit lasting 10 to 15 minutes per day).

The technology

YOURmeds (Yourmedpack) is a smart medication management system for people with long-term conditions. The technology includes the following features:

- an electronic smart tag and monitored dosage system
- a smartphone app
- a web-based monitoring portal that allows healthcare professionals to monitor whether people are taking their medication as intended.

The electronic smart tag and monitored dosage system work together to prompt a person to take their medication on time. The numbered monitored dosage system is filled with medication by the pharmacist and delivered to the person weekly. The smart tag sits at the top of the pack and when a dose of medication is due, an alarm will go off 3 times. The smart tag flashes red and displays the correct blister number of the electronic pill pack to take. The company's patented IP (intellectual property) has an electronic circuit so that the device knows exactly which medication door has been opened. Using a bespoke algorithm, it can advise whether the person has taken the correct one, the wrong one or too many (potential overdose). Pharmacists will charge the tag fully before delivery. The tag device uses mobile data, so no Wi-Fi or broadband is needed. The user can also nominate up to 5 people to help support them to take their medication on time. If the user has not taken their medication within 10 minutes of the initial alarm, the tag will inform the first supporter to give them a quick call to remind them to take their medication. This process continues every 10 minutes until all 5 supporters have been notified within 1 hour. Notifications will continue until either the medication is taken or the round ends. If the round ends and the medication is not taken, 2 things happen. The round is terminated and recorded as missing. But if the medication is taken after the round ends, it is recorded as late. The system moves on to alerting for the next round when it is due. Supporters are given a unique login to the app, through which they can see when medication is needed and if the wrong medication is taken or too much has been taken.

YOURmeds is not compatible with liquids, inhalers or injectables.

Innovations

The company claims that YOURmeds is the first digital medication dosage system that allows real-time monitoring of medication adherence. It monitors if the right medication is taken and if the patient may have suffered an overdose, in which case support is offered. The technology enables pharmacists to dispense medication in a conventional way directly to the patient, without a carer having to load the system. Other innovative aspects include the ability to correlate the medicines prescribed with the adherence data to show efficacy and support patient-centred care, creating a real-time support network for each patient to improve adherence and allow monitoring in a person's own home. The technology can also be used to help audit and record medication being taken.

Current care pathway

Medication management includes the administration of medication, prescribing, dispensing, and supporting people to take their medication. People need an assessment to see whether they need medication support, and the discussions and decisions need to be recorded in the provider's care plan. This is generally done by social workers, who then inform the GP and pharmacies. Supporting people to take their medicines may involve helping people to take their medicines themselves (self-administration), including medication in their original packaging and pharmacy-filled monitored dosage systems, or giving people their medicines (administration).

The following publications have been identified as relevant to this care pathway:

- [NICE guideline on managing medicines for adults receiving social care in the community](#)
- [NICE guideline on home care: delivering personal care and practical support to older people living in their own homes](#)
- [NICE guideline on medicines optimisation: the safe and effective use of medicines to enable the best possible outcomes](#)
- [NICE guideline on managing medicines in care homes.](#)

Population, setting and intended user

YOURmeds is intended to help people manage long-term conditions including diabetes, mental health and behavioural conditions, multiple long-term or genetic conditions, neurological conditions such as Parkinson's and dementia, and cardiovascular conditions such as stroke.

About 26 million people in England have at least 1 long-term condition. Long-term conditions include hypertension, depression, asthma, diabetes, coronary heart disease, chronic kidney disease, hyperthyroidism, stroke, chronic obstructive pulmonary disease, cancer, atrial fibrillation, mental health conditions, heart failure, epilepsy and dementia. It is estimated that between 30% and 50% of medicines prescribed for long-term conditions are not taken as intended. Poor adherence can lead to inadequate management of long-term conditions and so result in reduced health outcomes, which costs more for the NHS and society.

The technology is designed to be used in the community, in people's homes. The company says that it can be used by anyone who needs medication support, when independence and self-management are primary goals.

Training is needed for pharmacists because they need to know how to dispense the medication. The company provides training free of charge through Microsoft Teams or, if needed, in person. It also says that it has a weekly drop-in session online at which support can be given and questions can be asked, and the company regularly visits pharmacies. This training can also be delivered to any other pharmacy staff.

Costs

Technology costs

The annual cost is £628 per person in year 1 and £468 in year 2, because the tags have a 2-year life.

- The cost is £80 per smart tag. Two tags are needed per user (£160). Each tag is under warranty for 12 months and lasts on average 2 years. If the tag is faulty, it will be replaced free of charge. If the smart tag is dropped or damaged, a replacement costs £50.
- There is a weekly monitoring fee of £8 charged by the company (£416 per year). This includes:
 - YOURmeds smart packaging
 - SIM card costs so that the data can be sent and received by the device
 - pharmacy staff filling the pack and delivering it to patients
 - up to 5 app users per person
 - use of the YOURmeds dashboard that monitors adherence by responders who may include family and friends, or if there are none, then by the monitoring centre; the company claims that the time needed to monitor adherence is extremely low.
- The app and monitoring portal are free.
- There is an optional weekly £1 cost for insurance: £52 per year.

- The company also pays the pharmacy £10 per patient per month, and provides all the packaging for free. Typically, the pharmacy receives around £120 per patient per year from the company, plus the free packaging.

Costs of standard care

The company says that the cost of medication support and management depends on geography and NHS services. It says that medication support averages about £6,400 per year in a council in the North East of England, based on one 15-minute medication visit per day costed at £17.50. The company also says that some councils do bundle medication support visits. The medication support is part of 30-minute personal care visits. The full visit costs about £20, but the medication support is estimated to take 10 minutes and costs about £6 per visit (£2,200 per year).

Resource consequences

YOURmeds is used in 1 NHS trust. But it is mainly used in social care and by pharmacists to dispense medication.

The company says that the technology could help increase capacity in social care by reducing medication visits through remote monitoring. It may also help speed up discharge from hospital, reduce hospital admissions, reach hard-to-reach groups and allow people to maintain their independence in their own homes for longer, reducing long-term care costs.

The company says that no practical difficulties or changes in facilities and infrastructure are associated with adopting the technology. YOURmeds uses mobile SIMs and can be used without a smartphone.

Regulatory information

YOURmeds is a CE-marked class I medical device.

Equality considerations

NICE is committed to promoting equality of opportunity, eliminating unlawful discrimination and fostering good relations between people with particular protected characteristics and

others.

YOURmeds is intended for people with long-term conditions. Long-term conditions are more prevalent in older people and people in areas of lower socioeconomic status. YOURmeds cannot routinely be used by people with severe visual impairment, but may be able to be used with specific training. Those with partial sight can use the device if they can read the numbers on the screen. The company claims that the technology can also support disabled people, and people with a learning disability, dementia or mental health conditions, to remain independent.

Age and disability are protected characteristics under the Equality Act 2010.

YOURmeds can also promote digital inclusion because it does not need broadband or Wi-Fi and can work without a smartphone.

Clinical and technical evidence

A literature search was carried out for this briefing in accordance with the [interim process and methods statement for medtech innovation briefings](#). This briefing includes the most relevant or best available published evidence relating to the clinical effectiveness of the technology. Further information about how the evidence for this briefing was selected is available on request by contacting mibs@nice.org.uk.

Published evidence

Three real-world evidence case study reports including 69 people are summarised in this briefing.

The reports were available in summary form only and were not peer reviewed. One of the reports included longitudinal data covering a 16-month period.

The clinical evidence and its strengths and limitations is summarised in the overall assessment of the evidence.

Overall assessment of the evidence

Because of the limited information in the non-peer-reviewed, real-world evidence reports,

the level of the methodological quality is unclear. The studies are non-comparative and have small numbers of patients. The evidence suggests that YOURmeds increases adherence and costs less. The evidence came from 3 case study reports, so more high-quality research is needed to evaluate YOURmeds.

West Lothian Council (2020)

Study size, design and location

A case study by West Lothian Council of 24 people in Scotland.

Intervention

YOURmeds.

Key outcomes

The pilot showed that adherence was 83%, compared with 50% at baseline. One user showed very good adherence at the start of the pilot. But after 4 months, data showed that adherence reduced and an additional care package was quickly put in place, highlighting the need for a rapid response. West Lothian Council was able to save about 6,680 care visits with a saving of £27,008 across 8 users. The return on investment is 9:1, so for every £1 spent, £9.10 is saved.

Strengths and limitations

This real-world case study evaluates the introduction of YOURmeds. It is not peer reviewed and is in summary report form only, so it is limited in detail.

Leeds City Council (2019)

Study size, design and location

A case study by Leeds City Council of 15 people in the UK.

Intervention

YOURmeds.

Key outcomes

There were 3,636 individual medication rounds, with an average of 243 rounds per person. Over a period of 81 days, the average adherence was 59.5% (range 41% to 85%) and around 1,676 visits were saved. The average return on investment was 6.55:1 (range 1.5:1 to 21.2:1) showing that for each £1 spent, £6.55 was saved. Patient-reported benefits included increased independence, more social interaction and better health outcomes.

Strengths and limitations

This real-world case study evaluates a pilot of YOURmeds. In the calculation of the return on investment, only the pharmacy technician visits were included. All other aspects of social care and key relevant areas such as hospital admissions, GP visits (out of the usual routine) and delaying residential care costs were excluded. It is not peer reviewed and is in summary report form only, so it is limited in detail.

Company case study (2021)

Study size, design and location

[A case study of 30 people in the UK.](#)

Intervention

YOURmeds.

Key outcomes

People were aged between 38 and 94 with multiple underlying conditions. The system completed 33,249 unsupported medication rounds between January 2020 and June 2021. Overall adherence was 84.7%. People aged 79 or over had 90.5% adherence and people under 79 had lower adherence (78.9%). There was no noticeable difference in adherence during lockdown in the COVID-19 pandemic (82.2%) and outside of lockdown (84.4%).

Strengths and limitations

This case study evaluates a pilot of YOURmeds during lockdown. The study authors noted that the findings suggest that people can adapt to new technology quickly and that rapid rollout is possible. It is not peer reviewed and is in summary report form only, so it is limited in detail.

Sustainability

The device is made from recycled materials confirmed in manufacturer specification sheets. The company claims the technology can be readily recycled. There is no published evidence to support this claim.

Recent and ongoing studies

No ongoing or in-development trials were identified.

One expert noted that there is [1 study for Manchester Local Care Organisation on Parkinson's disease.](#)

Expert comments

Comments on this technology were invited from clinical experts working in the field and relevant patient organisations. The comments received are individual opinions and do not represent NICE's view.

Two experts were familiar with this technology, of which 1 had used it before.

Level of innovation

Generally, experts agreed that YOURmeds is novel and the first in a new class of procedures, but has uncertain safety and efficacy. All experts agreed that this technology builds on existing technologies, and 1 expert said that it is novel because it combines digital technology with data gathering. Two experts were unaware of any competing technologies in the NHS.

Potential patient impact

The experts noted that the main benefit is improved adherence. Other benefits could include improved health outcomes, greater independence and reduced hospital attendance or admissions.

Experts highlighted several groups that could particularly benefit from this technology, including people:

- who need social support for medication administration
- with mental health conditions
- who need time-sensitive medication for conditions such as Parkinson's disease, chronic pain, stroke, heart failure and diabetes.

One expert estimated that 50% of all people discharged from hospital would be eligible to use this technology. Another expert said that of the 1.5 million people who use monitoring dosage systems, about 30% would be eligible. But this could be higher for specific conditions such as Parkinson's disease, dementia and stroke.

Potential system impact

The experts agreed that YOURmeds could change the current pathway and reduce the pressure on primary care and social services. Two experts noted that it may also reduce hospital attendance or admissions and speed up hospital discharges.

Two experts said that the technology is likely to cost less compared with standard care. One expert noted that this is difficult to know, and that social care visits often include multiple reasons so costs may not be reduced. One expert noted that the resource demand would likely be highest for community pharmacies. Another expert noted that the largest saving would likely come from a reduction in staff time. This includes a reduced number of support staff in the community giving medication, monitoring medication adherence and collecting data.

Two experts said that the technology can be used in most or all district general hospitals. But 1 expert noted that we cannot currently predict this because it will mostly be started in primary care and community pharmacies.

One expert noted that changes to the clinical facilities need to be considered because the technology needs charging and contains communication software. Another expert considered that changes within the pharmacy may be needed. One expert said that no changes are needed to clinical facilities to use the technology.

Two experts agreed that basic training is needed for the patients, carers and pharmacy staff.

General comments

Two experts said that YOURmeds could replace current standard care because it has the potential to change delivery of care and support. One expert expects uptake to be rapid because the COVID-19 pandemic has placed a significant demand on resources and people may not be getting the support they need. One expert said that this is a significant improvement in social care. Another expert said that the technology would be available in addition to standard care because some people may not feel comfortable using it.

The experts noted that there may be potential risks associated with this technology including technology failure, incorrect pharmacy dispense of medication, and potential risk of overdose. But 1 expert noted that these are low risks or can be mitigated.

One expert highlighted the importance of equal access to the technology. They said that people who are visually impaired or have reduced hearing and possibly those with literacy or linguistic issues may not be able to use it. Also, YOURmeds may not be suitable for people who are unable to nominate multiple supporters.

Only 1 expert raised some issues that could prevent adoption of this technology. These included costs, patient and support service preference and logistics.

Two experts said that further research focusing on adherence, health outcomes and the value of the support network is needed to address the uncertainty in the evidence base. One expert noted that a larger sample of trial patients would be beneficial.

Post publication comments

Comments were received after publication from pharmacy professionals. These are summarised here, together with replies from the company and comments from community pharmacy staff who use YOURmeds.

Post publication NHS comments

NHS pharmacy staff commented that YOURmeds does not align with the [Royal Pharmaceutical Society \(RPS\) multi-compartment compliance aids \(MCAs\) pharmacy guide](#). The company replied that YOURmeds does align with the reasonable adjustments in the RPS guideline, especially when patients cannot manage to take their medication in its original packaging. The company added that YOURmeds is more than a computerised MCA, because it allows carers to be notified about non-adherence.

NHS pharmacists commented that they prefer people to take their medication in its original licensed packaging, which helps ensure stability of the medicine. The company agreed but said that some people need further help to take their medication, and that MCAs such as YOURmeds outweigh the added risk to a medicine's stability. Two of the comments received related to the potential issues around medication stability when removed from the original packaging.

NICE medicines optimisation team comments

NHS pharmacists questioned the quantity and quality of evidence for the technology, saying that it was relatively low and that further larger studies with comparator groups were needed. They raised the lack of consistency with recommendations in the RPS MCA pharmacy guide as a possible barrier to using this and similar technologies.

The pharmacists also queried the additional costs that might be incurred by community pharmacists in using the technology, and said that any savings may be offset by increased pharmacy staff time costs.

The pharmacists queried the proportion of eligible users, saying that the assertion that 50% of all people discharged from hospital would be eligible to use this technology appeared very high. They also queried whether uptake in hospital pharmacies was likely. They also raised safety concerns with YOURmeds.

Community pharmacy comments

Two community pharmacists commented on the technology. Both said YOURmeds was easy to use. Both agreed that patients found the technology useful and easy to use. One noted that it gave the patient more independence, as they did not need to be at home for medicines adherence visits.

One community pharmacist said that the virtual training is easy to access and that once set up had been completed for one patient, it was very simple to repeat as needed. They noted that any pharmacy capable of providing a standard MCA service could easily accommodate YOURmeds.

One expert said they felt there was increasing demand for MCAs, notwithstanding RPS guidance, and technologies such as YOURmeds. They said that the technologies give extra information and are an appropriate evolutionary step in developing MCAs. They noted that MCAs with and without internet connection may get used inappropriately, but that YOURMeds having internet connectivity is an advantage.

They noted that the ideal way to dispense medicines is in their original packaging. But they also said that medicines are already subject to packaging changes, and a large number of patients already have MCAs. One community pharmacist noted that the technology is not compatible with liquids, inhalers or injectables, so strategies are needed to supply these alongside YOURmeds.

When considering technology costs, 1 community pharmacist noted that their area does not have consistent reimbursement for MCAs and that there are different criteria for dispensing in MCA. They said that some localities use carers to deliver medicines for patients, and that the carer service may be reimbursed. They added that the adoption decision often falls to local individual pharmacies. Another noted that beyond initial training, any extra time used on YOURmeds is minimal. They said that the small monthly YOURmeds payment per patient per month makes it an attractive business proposition for community pharmacy.

Expert commentators

The following clinicians contributed to this briefing:

- Anna Stone, GP in Wolverhampton, and medicines and optimisation lead and clinical research lead at NHS Black Country Integrated Care Board. Did not declare any interests.
- Dr Moin Naeem, foundation year 2 junior doctor, Manchester University NHS Foundation Trust. Did not declare any interests.

- Prof Parag Singhal, consultant in diabetes and endocrinology, University Hospitals Bristol and Weston NHS Foundation Trust. Did not declare any interests.

Community pharmacy contributors

- Dr Noel Wicks, pharmacist and managing director, Right Medicine Pharmacy, Stirling
- Jas Riat, superintendent pharmacist, Prescription Care Services, Lichfield

Development of this briefing

This briefing was developed by NICE. The [interim process and methods statement for medtech innovation briefings](#) sets out the process NICE uses to select topics, and how the briefings are developed, quality-assured and approved for publication.

Update information

June 2023: Post publication comments were added. Some minor changes were also made to the wording to bring the language and style up to date, without changing the meaning.

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