

# Using automatic medication dispensers to improve medication adherence for older adults with long-term conditions

<b>Submission date</b>	<b>Recruitment status</b>	<input checked="" type="checkbox"/> Prospectively registered
14/03/2025	Recruiting	<input checked="" type="checkbox"/> Protocol
<b>Registration date</b>	<b>Overall study status</b>	<input type="checkbox"/> Statistical analysis plan
31/03/2025	Ongoing	<input type="checkbox"/> Results
<b>Last Edited</b>	<b>Condition category</b>	<input type="checkbox"/> Individual participant data
04/02/2026	Other	<input checked="" type="checkbox"/> Record updated in last year

## Plain English summary of protocol

### Background and study aims

This study aims to evaluate the effectiveness of a new automated medication dispensing device designed for people with long-term health conditions. The device provides reminders for taking medication and sends alerts to family members or carers if doses are missed. The goal is to determine whether the device can improve medication adherence and support overall health and wellbeing.

### Who can participate?

Adults with long-term health conditions who take regular medication and sometimes struggle to manage their medication routine may be eligible to participate.

### What does the study involve?

Participants will be randomly assigned to one of two groups:

A group using the automated medication dispensing device for six months.

A group continuing with their usual medication routine.

Participants may be asked to provide feedback through surveys or interviews to help researchers understand how the device fits into daily life.

### What are the possible benefits and risks of participating?

#### Benefits:

Participants in the device group may find it easier to manage their medication.

The study contributes to research that could benefit others with similar conditions.

#### Risks:

There are no significant risks expected. Participants may need time to adjust to using the device.

### Where is the study run from?

University of Bedfordshire (UK)

### When does the study start and how long is it expected to run for?

September 2024 to February 2027.

Who is funding the study?

Bedford, Luton and Milton Keynes (BLMK) Integrated Care Research and Innovation Hub (UK)  
NHS England

Who Is the Main Contact?

For further information or to express interest, individuals can contact:

Dr Jodi Emma Wainwright, [jodiemma.wainwright@beds.ac.uk](mailto:jodiemma.wainwright@beds.ac.uk)

## Contact information

### Type(s)

Scientific, Principal investigator

### Contact name

Dr Erica Cook

### ORCID ID

<https://orcid.org/0000-0003-4369-8202>

### Contact details

University of Bedfordshire, University Square

Luton

United Kingdom

LU1 3JU

+44 1582 489217

[erica.cook@beds.ac.uk](mailto:erica.cook@beds.ac.uk)

### Type(s)

Public

### Contact name

Dr Jodi Emma Wainwright

### ORCID ID

<https://orcid.org/0000-0002-6297-499X>

### Contact details

University of Bedfordshire, Putteridge Bury

Luton

United Kingdom

LU2 8LE

+44 7566729241

[jodiemma.wainwright@beds.ac.uk](mailto:jodiemma.wainwright@beds.ac.uk)

## Additional identifiers

### Integrated Research Application System (IRAS)

349006

### Protocol serial number

# Study information

## Scientific Title

Assessing the impact of Automated Devices for enhancing HElth and Reducing medication Errors in older Adults with long-term health conditions: A Randomised Controlled Trial

## Acronym

ADHERE

## Study objectives

Current study objectives as of 03/11/2025:

Are Automated Medication Devices (AMDs) for adults aged over 50 with long term health conditions, more effective than standard care in improving medication adherence, quality of life, and health status after six months? Which groups does it work best for, and why?

Previous study objectives:

Are Automated Medication Devices (AMDs) for adults aged over 65 with long term health conditions, more effective than standard care in improving medication adherence, quality of life, and health status after six months? Which groups does it work best for, and why?

## Ethics approval required

Ethics approval required

## Ethics approval(s)

1. approved 13/03/2025, East of England - Essex Research Ethics Committee (2 Redman Place, Stratford, London, E20 1JQ, United Kingdom; +44 207 104 8106; essex.rec@hra.nhs.uk), ref: 25 /EE/0026

2. approved 26/11/2024, Institutue for Health Research Ethics Committee (University of Bedfordshire, University Square,, Luton, LU1 3JU, United Kingdom; +44 1234 400 400; EthicsIHR@beds.ac.uk), ref: IHREC1039

## Study design

Multicentre interventional randomized controlled trial

## Primary study design

Interventional

## Study type(s)

Efficacy, Quality of life

## Health condition(s) or problem(s) studied

Adults aged over 50 with long term health conditions

## Interventions

Current interventions as of 03/11/2025:

There are two study arms, intervention and control. Each group will complete assessments at baseline, 3 and 6 months. The intervention group will receive the AMD and the control group will

continue to take medication as normal.

We will be sequentially allocating participants to trials arms taking in to account the covariates of interest. In this case, gender (Male vs Female), age (50-65 vs 65-75 vs 75+), and the referral reason for entering the trial (Physical vs memory related) will be used to ensure that trial arms are balanced for these factors. Specially designed software will be used to manage this process called MinimPy2.

#### Previous interventions:

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#### Intervention Type

Device

#### Phase

Not Applicable

#### Drug/device/biological/vaccine name(s)

Pivotell Advance Automatic Pill Dispenser (Patent No. SE 535 462 C2)

#### Primary outcome(s)

1. Medication Refill Adherence (MRA) at baseline, 3 and 6 months
2. Self-report adherence data at baseline, 3 and 6 months
3. Adherence data for the intervention group will also be determined by using the Pivotell Administration Centre at 3 and 6 months

#### Key secondary outcome(s)

1. Quality of Life 12-item Short-Form Health Survey (SF-12) at baseline, 3 and 6 months
2. Morisky Medication Adherence Scale (MMAS-8) at baseline, 3 and 6 months
3. Self-report healthcare resource use data at baseline, 3 and 6 months

#### Completion date

28/02/2027

## Eligibility

#### Key inclusion criteria

Current inclusion criteria as of 03/11/2025:

1. Adults ( $\geq 50$  years)
2. Diagnosed with at least one long-term health condition
3. Prescribed a stable daily medication regime and not taking medication more than four times per day
4. Has physical and/or memory-related difficulties taking medication and/or self-reported low medication adherence
5. And /or unsuccessfully tried other compliance aids, such as dosette boxes, calendar clocks,

blister packs or talking labels.

6. Have sufficient English language skills

7. The patient provides written informed consent

Previous inclusion criteria:

1. Adults (≥65 years)
2. Diagnosed with at least one long-term health condition
3. Prescribed a stable daily medication regime and not taking medication more than four times per day
4. Has physical and/or memory-related difficulties taking medication and/or self-reported low medication adherence
5. And /or unsuccessfully tried other compliance aids, such as dosette boxes, calendar clocks, blister packs or talking labels.
6. Have sufficient English language skills
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**Participant type(s)**

Patient, Service user

**Healthy volunteers allowed**

No

**Age group**

Mixed

**Lower age limit**

50 years

**Upper age limit**

120 years

**Sex**

All

**Total final enrolment**

0

**Key exclusion criteria**

1. Patients on cytotoxic medications (e.g. Methotrexate)
2. Clinically unsuitable medications or medications unsuitable for the AMD used (e.g., size, storage, administration method)
3. Variable medication regime (e.g. Warfarin) and/or taking medication more than four times per day
4. Patients who are already using an AMD or other similar electronic device.
5. Patients are not responsible for taking their own medications (e.g. carer administers medication).
6. The patient does not provide informed consent.

**Date of first enrolment**

01/04/2025



**Study participating centre**

**Titan Pharmacy**  
17-18 Bedford Square  
Houghton Regis  
Dunstable  
England  
LU5 5ES

**Study participating centre**

**Halfway Pharmacy**  
731 Dunstable Road  
Luton  
England  
LU4 0DU

**Study participating centre**

**Smarta Healthcare**  
5 Stephenson Court  
Priory Business Park  
Bedford  
England  
MK44 3WJ

**Study participating centre**

**Lindleys Chemist**  
15 Ford End Road  
Queens Park  
Bedford  
England  
MK40 4JE

## **Sponsor information**

**Organisation**

University of Bedfordshire

**ROR**

<https://ror.org/0400avk24>

# Funder(s)

## Funder type

Other

## Funder Name

NHS England

## Funder Name

Bedford, Luton and Milton Keynes (BLMK) Integrated Care Research and Innovation Hub

# Results and Publications

## Individual participant data (IPD) sharing plan

The datasets generated during and/or analysed during the current study will be stored in a publicly available repository: <https://reshare.ukdataservice.ac.uk/>

Anonymised data will be made available from the end of the trial for five years. This will include individual anonymised participant data and study publications including the study protocol, statistical analysis plan, health economics plan, and case report forms. Data from this study will be available via a sponsor-controlled application process for which applicants must show that they have sound scientific reasons for accessing the data and acceptable research methods. Consent for the sharing of anonymised data will be obtained from all study participants. At the culmination of the study, we plan to apply to share our anonymised data in a public repository such as the UK Data Archive <https://reshare.ukdataservice.ac.uk/> where it would be accessible to other researchers. In order to enable this, we will highlight on our Participant Information Sheets and consent forms that anonymised data may be shared in this way.

## IPD sharing plan summary

Stored in publicly available repository

## Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">Protocol article</a>		27/01/2026	28/01/2026	Yes	No
<a href="#">Participant information sheet</a>			27/03/2025	No	Yes
<a href="#">Study website</a>	Study website	11/11/2025	11/11/2025	No	Yes