

Automated phone calls may help patients to take medicines as prescribed, pilot study suggests

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Oval white medication pill. Credit: rawpixel

Remembering to take medication is vital for managing long term health conditions such as high blood pressure, type 2 diabetes, or multiple conditions. Latest research from the University of Cambridge suggests that using interactive voice response (IVR) technology supports patients to take their medicine as prescribed.

During a [pilot study](#), published today in the journal *BMJ Open*, seventeen patients received daily automated telephone calls for one month. All patients had [high blood pressure](#) and were recruited from GP practices in East of England. The calls were tailored to patients' needs and provide them with advice and support about taking their prescribed medicines. The calls also asked a series of interactive questions and reacted to the patients' answers.

Examples of the messages included:

Please do not forget to take your tablets. To achieve better control over high blood pressure, you will need to take them every day.

This is your message for your blood pressure tablets. One easy way to remember your tablets, is to take them with another daily activity, such as your morning cup of tea. If they are always done together, it will be harder to forget.

Please keep taking your tablets as prescribed even if you are well and feeling healthy. High blood pressure is one of those things that unless you actually feel it you're not aware that it is a problem.

Taking your medications as prescribed will support you to keep enjoying things or activities that are important to you.

Whatever the day may hold, please do not forget to take your tablets. To achieve better control over high blood pressure, you will need to take them every day.

The patients completed questionnaires at the beginning of the study and at follow up, and completed interviews to understand the impact of the service.

"This the first time automated telephone call technology has been used in the UK in this way," said Dr. Katerina Kassavou from the Department of Public Health and Primary Care at the University of Cambridge. "There is considerable evidence to show that highly tailored interventions are more likely to support patients' adherence to their prescription regime, which in turn leads to better patient outcomes."

The IVR application was developed by Simon Edwards, a Communications Specialist from the University Information Service telecoms team at Cambridge.

"Many patients had previous, often negative, experiences with IVR technology, particularly from marketing schemes, so it was important for us to work closely with the [research team](#) to understand what patients really wanted," said Edwards.

"We created a tailored experience which included the preferred delivery method, the timing of calls, and the intervals between repeat calls. The team also researched how the content of the message should change through the month-long trial to maintain patient engagement."

All recruited patients completed the one-month intervention and follow up interviews. Patients reported that the intervention helped them overcome barriers to taking medications, such as being busy or having many medications to take. They also said it helped them understand the importance of taking medication itself.

Even though the messages were automated, patients also valued the social aspect of the service – especially those patients with lower perceived social support. The IVR service also enabled patients to ask questions, which could be followed up by their doctor or practice nurse later. Patients also recognised it was likely to be more cost-effective to the NHS than a nurse calling them.

The next stage of the work is currently underway. It includes both IVR and text messages and it's being tested for efficacy in a randomised controlled trial with more than 100 patients recruited by GP practices. The trial is also collecting medical data, i.e. blood [pressure](#) and [blood sugar](#), and will also look at the cost effectiveness of the system.

"The early signs are that this digital intervention is well liked by patients and could play an important role in helping patients manage their medicines," says Dr. Kassavou. "We now need to make sure it works in a wider population and to demonstrate that it is a cost-effective intervention."

More information: Aikaterini Kassavou et al. Development and piloting of a highly tailored digital intervention to support adherence to antihypertensive medications as an adjunct to primary care consultations, *BMJ Open* (2019). [DOI: 10.1136/bmjopen-2018-024121](https://doi.org/10.1136/bmjopen-2018-024121)

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