

Developing and pre-testing a  
tailored interactive voice response  
(IVR) intervention to support  
adherence to anti-hypertensive  
medications

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Primary Care  
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## STUDY SUMMARY

**NHS**  
National Institute for  
Health Research

Hypertension is a condition that affects approximately 8 millions of people in the UK, and it often accompanies other conditions like type 2 diabetes, coronary heart disease, and stroke. These conditions are major risk factors for disability and premature death, and medication adherence can significantly lower these risks. However, substantial proportions of patients (approximately 41%) do not take their medication as prescribed. Non-adherence reduces the effectiveness of treatment and increases the cost to the NHS from hospital admissions, additional consultations, referrals, investigations, and medicine wastage.

Primary care practitioners lack the time to provide ongoing support for medication adherence to people with long-term health conditions. One way of addressing this is to offer automated tailored telephone support (interactive voice response, IVR). Our recent systematic reviews found that IVR-based interventions (the majority conducted in the USA) had a significant effect on adherence to medication, when added or compared to usual care; especially when interventions were tailored to each patient's reasons for non-adherence and provided information about the consequences of taking or not taking medications.



**Kassavou, A., Sutton, S. (2017). Reasons for non-adherence to medication and acceptability of an interactive voice response intervention in patients with hypertension and type 2 diabetes in primary care. A qualitative study. BMJ Open 7(8), e015597. <http://dx.doi.org/10.1136/bmjopen-2016-015597>**

## Reasons for non-adherence to medication and acceptability of IVR intervention



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### **Issue:**

A significant proportion of patients do not take their medication as prescribed, and non-adherence has negative impact on the NHS cost. Practitioners report limited time and resources to provide tailored and ongoing advice to non-adherent patients. IVR interventions have the potential to provide support at a limited cost. However, no such intervention has been developed and tested in the UK.

### **What we did:**

We developed the first IVR intervention to support adherence, as an adjunct to primary care. The intervention development process involved the design of the telephone-based platform and the content of the intervention messages. The IVR intervention delivers very brief messages (>1 minute) tailored to participants' preferred time, telephone to receive the calls, and frequency of calls. Participants use a voice recognition software to interact with the IVR and further tailor the intervention content.

### **What we found:**

The tailored schedule of the calls, the personalisation, and the variation of the message content were perceived to be particularly appealing, and to promote engagement with the intervention. Messages that included reminders to take medications as prescribed and advice tailored to each participant's reasons for (not) taking medications were perceived to support adherence. Participants recommended IVR calls that coincide with medication schedules, and include coping plans to support adherence when they anticipate a change in their routine.