WILEY

A new Cochrane Review, summarizing data from 132 trials of automated telephone systems in preventing and managing long-term health conditions, concludes that they probably have the potential to play an important role in the delivery of health care. However, further research is needed to understand more about their acceptability and costs.

Automated telephone communication systems (ATCS) send voice messages to patients and may collect health information from people using their telephone's touch-tone keypad or voice-recognition software. Some ATCS also use SMS or email messaging and allow patients to ask for advice or support ('ATCS Plus'). Their use in healthcare is intended to support patients in actively managing their own health.

A team of Cochrane researchers assessed the effects of automated telephone communication systems compared with usual care for improving patient care in a variety of ways. These ranged from helping people take their medication as prescribed and reminding them about appointments, to using ACTS to increase the uptake of preventive healthcare measures such as immunization and cancer screening, and to improve the management of long-term conditions such as cancer, chronic pain, diabetes and mental illness.

The researchers included 132 trials, most of which were conducted in high income countries across Europe and North America. The studies compared ATCS against standard forms of usual care (i.e. no ATCS intervention).

Forty-one studies evaluated ATCS as a way of delivering preventative healthcare, by using reminders about attending appointments to receive immunizations or to get screened for different types of disease. Fives studies involving over 15,000 children and adolescents showed that providing reminders via ACTS probably increases immunization uptake compared with no reminder. When automated phone communication was used alongside other prompts such as mailed reminders the researchers found high quality evidence that this approach increases breast screening attendance by 20% in two studies in 462 women, and colorectal cancer screening by 30% based on three studies in 1013 people compared with usual care.

The Cochrane Review found low quality evidence that when compared with no reminders,

simple automated systems may improve appointment attendance, which can play a key role in preventing disease.

Eighty-four studies evaluated ATCS in people with long-term conditions and whilst there was an indication that different types of ATCS helped to improve adherence with medicines, the effects on clinical outcomes were often mixed. The Review found low quality evidence in 1246 people with diabetes that blood glucose levels were slightly lower in treatment groups who received ATCS that had an interactive component, and moderate quality evidence that this approach helped people to monitor the health of their feet. ATCS with an interactive component probably reduces pain and depression in cancer patients when compared with ATCS alone. The effects on smoking cessation were uncertain, and there appeared to be little or no benefit in reducing blood pressure in people with hypertension.

The studies did not report adverse effects of the interventions and the researchers recommend that future research addresses issues of harms, feasibility and cost.

The Review's lead author, Josip Car, Director of Centre for Population Health Sciences, Lee Kong Chian School of Medicine, Nanyang Technological University, Singapore, said these findings are promising and help to identify areas worth pursuing, "Our results show that ATCS may improve health-related outcomes in some long-term health conditions. These systems may also be a useful component in interventions for targeting adherence to medications, physical activity, and weight management and some outcomes in people with diabetes. However, the effects of ATCS are more uncertain in other areas such as HIV/ AIDS, hypertension, mental health, obstructive sleep apnoea or helping people to stop smoking."

He added, "Our Review shows that automated telephone communication systems may help change patients' health behaviours when compared with routine care. This is a positive step forward in eHealth for global health research. We need more information about the costs and harms to supplement the evidence that shows potential benefits of using these systems. Further research will help us to understand the patient experience with using these telecommunications systems, and how they could replace or supplement telephone contact between health professionals and patients in the future."