How to improve attendance for diabetic retinopathy screening

A new study suggests that an intervention designed to remind patients to attend DRS is feasible for delivery in general practice

REGULAR DIABETIC RETINOPATHY SCREENING (DRS) is clinically effective and cost-effective and prevents blindness,[1,2,3] yet the uptake of the national diabetic screening programme, Diabetic RetinaScreen, at 67%,[4] is suboptimal. There are many reasons why patients may not attend DRS. Research suggests some patients lack awareness of diabetic retinopathy and the risk of developing it, experience difficulties accessing screening centres and find it challenging to find the time to attend the appointment.[5]

Given that diabetic retinopathy is the most common microvascular complication of diabetes,[6,7] and a leading cause of blindness and visual impairment among working age adults,[7,8] it is crucial that patients be supported and encouraged to attend their annual screening appointment. In line with national guidelines,[9] the Diabetes Cycle of Care and the new Chronic Disease Management Programme,[10] most people with type 2 diabetes are managed in primary care, making it an opportune setting to encourage DRS uptake. A recommendation to attend screening from a primary care healthcare professional (HCP) such as a GP or practice nurse has been shown to encourage attendance.[5,11,12]

Methods

We conducted a pilot randomised controlled trial* to evaluate the feasibility and cost of delivering an intervention in general practice to improve DRS attendance over a 12-month period (July 2019-July 2020) in eight general practices across Ireland. Participating practices had an electronic health record system and employed a practice nurse.

The intervention was systematically developed using both behaviour change theory and stakeholder involvement. The intervention included:

- A practice audit of patient screening status
- Electronic prompts for staff to remind patients who had not attended
- Practice-endorsed reminders together with an information leaflet delivered via script, opportunistically face-to-face and systematically by phone and letter.

Four intervention group practices delivered the intervention for six months while four control practices delivered care as usual. After this, control practices were offered access to the intervention material and supports.

At baseline, practices audited 100 patients, checking for evidence of screening attendance, along with demographic and treatment information. At six months, practices re-audited patients who received the reminder, and checked their screening status. The same data were collected in control practices. If patient screening status was unavailable from records, the patient was phoned by the practice as part of the re-audit to determine if they intended to or had contacted RetinaScreen or had attended RetinaScreen. If not, practices asked patients why they had not attended.

Data from staff questionnaires, interviews with staff and patients, research logs and the audit were used to examine the feasibility and cost of implementing the intervention.

Twenty-five staff members who were responsible for delivering the intervention rated its acceptability, appropriateness, and feasibility.[13] Nine staff members and ten patients were interviewed to explore their experiences of the intervention. We estimated costs and resources used to deliver the intervention depending on who completed different tasks.

Findings

Feasibility

Staff considered the intervention feasible, but feasibility was dependent on whether time could be protected to deliver the intervention and whether the intervention was a

Table 1: Exemplar quotes

Having protected time and skills

"Well, I think if everybody is au fait with using Excel, it would be fine. And also, I think that you can be quite time-stretched, as I'm sure you know, when you're working in this kind of a job, that when you've got a half an hour off, to actually turn around and face into something that you don't know how to use is much more difficult than if you just know how to do it and you just do the job. So, I found that quite stressful."

– **PN #3, C**

DRS is 'one tiny aspect of diabetes'; sustaining the intervention is an 'extra thing'

"The face-to-face thing is a routine thing anyway, so, they know that question is coming, whereas when I followed it up with the phone call, they feel like it's an extra thing, I specifically want to check this thing with you."

– **PN#1, A**

Workarounds to improve fit

"That [adding alerts] didn't seem like it was going to work, because I don't think people even read some of the alerts sometimes. What I found best was putting an alert note within their notes…So, it brings your eye to it and you have a quick read of whatever it is. That seemed to work well."

– **PN#1, A**

Tailoring the mode and message

"I didn't really [follow the script]. I'm a bit of a rebel, I think. I don't go for set things really. I think you've got to tailor it to the patient to a certain extent. I mean, you'll frighten some patients if you start talking about blindness or whatever, whereas other patients might need to be frightened. It's an individualised thing, I think."

– **GP#1, B**

good fit with the practice systems and staff skills/experience *(see Table 1)*. Some practices already had a diabetes register to facilitate audit or a recall/review system to facilitate face-to-face reminders. The decision to assign staff to deliver the intervention was not always based on the best fit of skills, but rather fit in with workload and availability. Practice nurses' perceptions of skills and confidence varied across practices. The audit was challenging as it required familiarity with Microsoft Excel software and led to delays in some practices.

While most staff (86%, n = 19) agreed the intervention was doable, only 71% (n = 15) agreed it was easy to use. While it was feasible to deliver in the short-term during the study period, staff had mixed views on the sustainability of specific aspects of the intervention, eg. the phone call reminders. Some staff were concerned that the practice could focus too much on DRS, just one part of diabetes care. Instead, they felt they should deliver the intervention as part of existing diabetes care processes. Suggestions included incorporating DRS reminders within existing contacts and saving targeted calls for smaller numbers of patients.

Some staff used workarounds to make the intervention a better fit with existing practice systems and skills, eg. using a note in patients' records in lieu of a pop-up alert that would be ignored. Likewise, where the practice did not have a structured approach to diabetes care, nurses offered extra appointments to discuss DRS and register patients.

Practices took additional steps to make the intervention more personal and a good fit for patients. In terms of mode of delivery, practices were more likely to use telephone reminders than send letters to patients. Some staff felt verbal reminders, particularly phone calls, could be more impactful because they are unusual. They suggested that letters or leaflets only suited some people. Telephone calls were perceived to be preferable for patients who might not be coming into the practice or who might not attend DRS after being registered. Messages were personalised; in some cases, staff abandoned or deviated from the script to avoid scaring or giving too much information to patients with a limited understanding of diabetes. Staff also recognised the need for some patients to hear the 'grave details', or to step back when patients were negative about attending DRS or generally disengaged from their diabetes care.

Patient feedback

Patients who received a reminder phone call appreciated the effort. The reminder was a behavioural cue for some but only when patients were in the position or mindset to act on it (eg. already generally interested in their health or had existing concerns about their eyes). Their relationship with the GP or practice nurse influenced their actions or intention to act. According to patients, someone who knew them well enough was able to "put things across right", reflecting practice team efforts to tailor both the reminder mode and messages. For previously unregistered patients, once the patients were made aware of DRS and helped through the steps, they followed the recommendation and took part in DRS.

Attendance and registration

In total, 716 patients from eight practices were audited. Most patients who were not registered at baseline in intervention and control practices were registered by practice staff during the six-month intervention period (intervention: n = 47/52, 90%; control: n = 22/25, 88%). In the intervention group, 22/71 (31%) of the baseline non-attenders had subsequently attended retinopathy screening at six months, compared to 15/87 (17%) in the control group.

Cost

The total intervention delivery cost (four practices, 363 patients) was €2,509, averaging €627 per practice and €6.91 per patient ranging from €3.34 to €11.60. If a practice nurse completed all tasks, the cost was €655 per practice (€7.22 per patient). If some tasks (practice audit, electronic alerts and follow-up letters) were completed by practice administration, then the cost would be reduced by 15% to €535 per practice (€5.89 per patient).

Discussion

The findings suggest this intervention designed to remind patients to attend DRS is feasible to deliver in general practice. This was a small pilot trial, and although our findings suggest the intervention may improve screening attendance, effectiveness cannot be determined without a full-scale trial. It is important to note that we examined attendance over a short six-month period, and practice records may not have been up to date with respect to DRS attendance.

The findings raise the question of whether and how balance can be struck between targeted stand-alone efforts to improve DRS uptake and embedding an intervention within routine care. At the time of the study, some staff found that separate calls about DRS were time-consuming and unsustainable. However, with shifting care models and remote consulting during the Covid-19 pandemic, this reminder mode may be more feasible. In general, reminders have been shown to improve uptake of screening programmes.[14,15,16] Evidence suggests greater efficacy of phone reminders compared to letters,[17,18] which aligns with the perception among some staff in our study that verbal reminders could be more impactful than letters because they are unusual.

Some staff experienced challenges when conducting the audit of screening attendance. Ideally, practices would be notified by RetinaScreen more systematically about their patients who have not attended screening. This would require technological solutions to facilitate electronic sharing of data between GP practices and the screening service.

Staff adapted the intervention to make it more feasible and appropriate for their practice and patients. In future research we hope to test and provide a suite of theory-based, co-designed messages and delivery modes. This would allow local tailoring while incentivising delivery of the core elements of the intervention.[19] This study highlights the potential for practice teams to support attendance at DRS, which will have clear benefits for their patients with diabetes.

Authors: Fiona Riordan is a senior postdoctoral researcher at the School of Public Health, UCC; Colin Bradley is professor of general practice at UCC; Susan Smith is professor of primary care medicine at RCSI and Sheena McHugh is senior lecturer at the School of Public Health, UCC

* The full published study is available in BMJ Open:
Riordan F, Murphy A, Dillon C, et al Feasibility of a multifaceted implementation intervention to improve attendance at diabetic retinopathy screening in primary care in Ireland: a cluster randomised pilot trial. BMJ Open 2021;11:e051951. doi: 10.1136/bmjopen-2021-051951

References on request