



ORIGINAL ARTICLE

Telephone announcements encouraging common cold self-management reduce demand for general practice appointments

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Received 5 October 2018
 Revised 9 January 2019
 Accepted 25 January 2019
 Published Online First
 16 February 2019

ABSTRACT

Background Patients consulting with the common cold contribute to seasonal demand for general practice appointments. Seeing a community pharmacist or using self-management may have been more appropriate options. The study aimed to measure if the use of telephone announcements signposting appropriate patients with the common cold in the direction of community pharmacy or self-management reduced demand for general practice consultations.

Methods Patients telephoning a UK general practice to request an appointment between December 2017 and March 2018 heard announcements regarding management of the common cold. The percentage of callers choosing to continue to speak to a receptionist was compared with baseline data prior to the intervention. The mean waiting time to the third available routine general practice appointment during the intervention was compared with the previous year.

Results Routine calls continuing to reception reduced by 5.5 % ($p < 0.001$) when the incidence of the common cold is at its highest and by 3.9% ($p < 0.001$) throughout the intervention. The mean waiting time to the third available routine appointment reduced by 21%.

Conclusion This study has demonstrated that the use of telephone announcements signposting appropriate patients with the common cold in the direction of community pharmacy or self-management reduces calls to reception. This strongly infers that the telephone announcements reduce demand for general practice appointments and is supported by the reduced mean waiting time to the third available routine appointment. Implementation of this intervention could help general practitioners reduce seasonal demand in their own practices.

INTRODUCTION

Seasonal respiratory tract infections including the common cold place a large burden on general practice in the UK.¹⁻³ Demand for consultations and general practitioner (GP) workload are rising to what some authors propose is saturation point.^{4,5} Yet estimates of GP consultations that could have been dealt with by a community pharmacist or with self-management range from 5.5% to 7%.⁶⁻⁸ Online and telephone national health information services encourage patients to self-manage the common cold and take advice from a community pharmacist when required rather than consulting with a GP.^{9,10} There is an opportunity to use these resources for patient education and to reduce demand. Unfortunately, the opportunity has already been lost by the time the patient has booked an appointment and is consulting with the common cold. It has been proposed that better use of technology at the time of appointment booking, including telephone announcements, could help with this.⁷ This study proposes to measure if the use of telephone announcements signposting appropriate patients with the common cold in the direction of community pharmacy or self-management reduces demand for GP appointments. Positive consequences could include reduced burden for GPs and their reception staff plus reduced appointment waiting times for patients to see a GP with more appropriate and complex medical conditions.

METHODS

The study took place at Teviot Medical Practice, Hawick, Scottish Borders, UK, which has high levels of disease prevalence and deprivation.^{11,12} It is semirural with a practice population of over 11 000 patients.



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To cite: Kerr R, Grainger A, Messer C, *et al.* *BMJ Innov* 2019;**5**:60–64.





Figure 1 Baseline Custom Call Routing tree.

The Private Branch Exchange telephone system used was Nortel Business Communications Manager 400, version 4.0. The content of the telephone announcements was taken from the NHS Inform webpage regarding the common cold.⁹ A Custom Call Routing tree was created for patients telephoning the practice shown in [figure 1](#). This had been in use for several years prior to baseline data being collected in October 2017. [Figure 2](#) shows the tree for when the intervention took place from 1 November 2017 to 31 March 2018. These are the months when there is a high incidence of the common cold in the UK.¹⁻³ The [figure 2](#) tree was in use from 08:00 to 18:00 hours, Monday to Friday with the exception of public holidays during the data collection period. The announcements contained in [figure 2](#) were also displayed on the practice's website next to the weblink for online appointment booking.

Data on the total number of calls per day and how those patients navigated the trees were stored within the telephone system and collected on a weekly basis. This was because the system only had capacity to store 1 week of data at a time. A technical problem prevented data collection during November 2017 and the system capacity meant these data could not be collected more than 1 week retrospectively once the issue was resolved. There were no patient identifiers in the data collected and so no anonymisation was required.

Call data were aggregated for those navigating to reception routinely by holding as shown in the [figure 1](#) tree or by pressing 2, 2 or 2, 1, 2 as shown in the [figure 2](#) tree. Call data were also aggregated for those navigating to reception urgently by pressing 1 in both the [figure 1](#) and [2](#) trees. Key 0 was the system's designated repeat key and as such does not count as an option on its own. An N-1 χ^2 goodness of fit test was used to identify statistically significant differences in the proportion of calls navigating routinely or urgently. Tests were carried out within Microsoft Excel.

On an annual basis, in the month of March, Teviot Medical Practice collects data on the waiting time to the third available routine GP appointment as this is The Royal College of General Practitioners approved means to measure appointment availability.¹³ The Royal College of General Practitioners methodology is used for data collection.¹³ From March 2017 to March 2018 variables including the number of GPs, number of sessions worked and appointment templates all remained constant. The only change in that time frame was implementing the intervention Custom Call Routing tree ([figure 2](#)) from 1 December 2017. Therefore, comparison of the annual third available routine GP appointment mean would help determine if the intervention influenced appointment waiting times for patients.

RESULTS

The results for calls navigating the trees routinely or urgently are shown in [table 1](#). This shows a statistically significant 3.9% ($p < 0.001$) fewer routine calls navigating to speak to a receptionist routinely, with no significant difference in the proportion of urgent calls during the intervention ($p = 0.56$). The intervention resulted in a statistically significant reduction in the number of routine calls to reception to request an appointment after listening to the telephone announcement on how to self-manage the common cold. There was no increased use of the urgent navigation option during the intervention.

[Table 2](#) breaks the data down by month. This shows that the intervention was at its most effective in December reducing routine calls to reception to request an appointment by 5.5% ($p < 0.001$) when the incidence of the common cold is at its highest.³ A 2.9% ($p < 0.001$) reduction was recorded in March which remains statistically significant.

The mean waiting time to the third available routine GP appointment in March 2017 was 4.42 days. This reduced to 3.50 days in March 2018 at the end of the intervention. All other controllable variables were unchanged during that time period. There was a 21% reduction in the mean waiting time to a third available routine GP appointment at the end of the intervention.

DISCUSSION

This study has demonstrated that the use of telephone announcements signposting appropriate patients with the common cold in the direction of community pharmacy or self-management reduces calls navigating to speak to a receptionist. This strongly infers that the telephone announcements reduce demand for GP appointments. There was a 5.5% reduction in the number of calls navigating to reception staff to request a routine appointment in December when the incidence of the common cold is at its highest.³ There was a mean reduction of 3.9% in the number of calls navigating to reception to request a routine appointment from December 2017 to March 2018 when the intervention took place. This simple way to facilitate self-management by appropriate

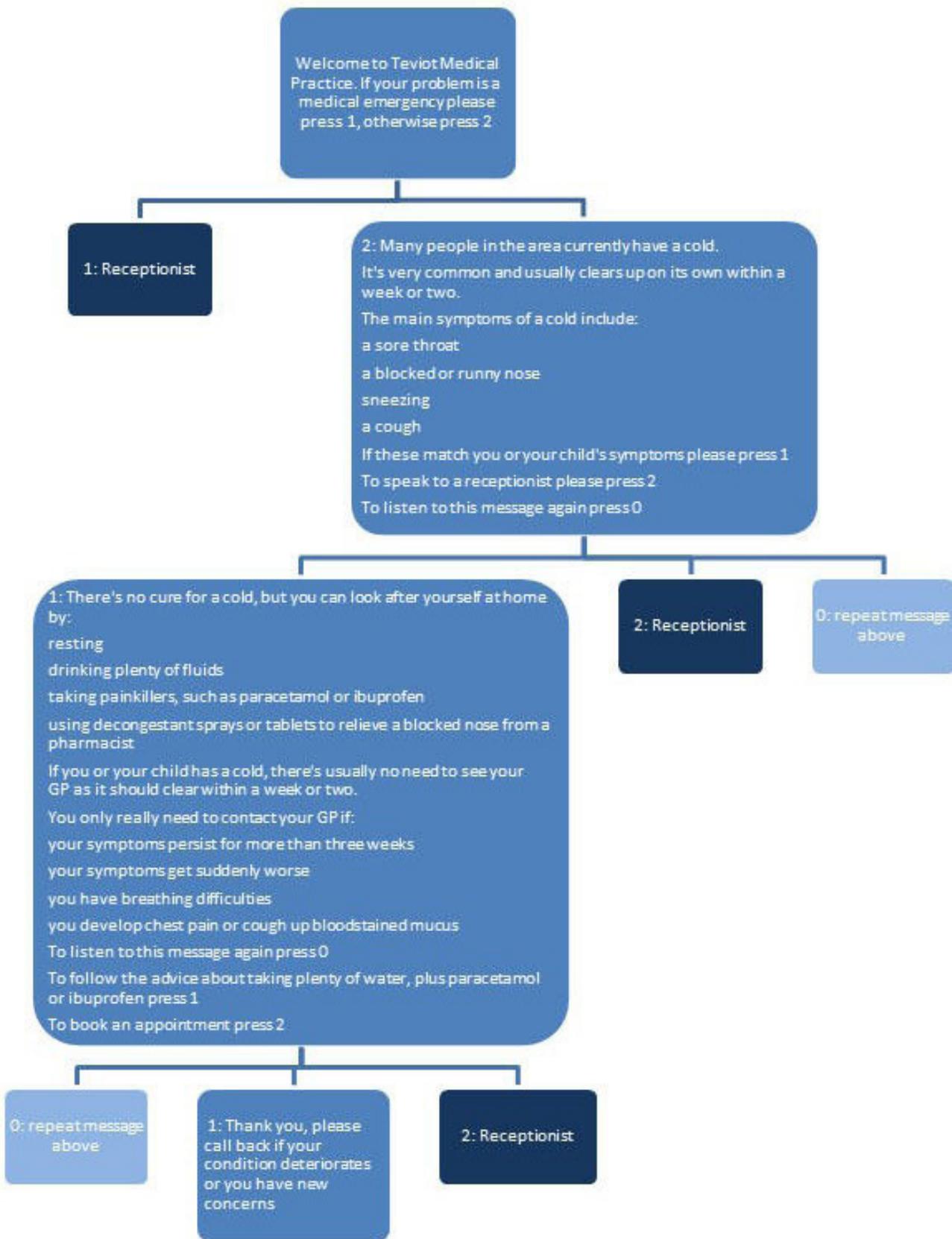


Figure 2 Intervention Custom Call Routing tree.

Table 1 Calls navigating the trees routinely or urgently

	Baseline	Intervention	Difference	P value
Total calls	1237	23 323		
Proportion routine	94.1%	90.2%	-3.9%	<0.001
Proportion urgent	5.9%	5.5%	-0.4%	0.56

patients and consequently reduce demand is important for GPs and their reception staff at a time when demand is known to be particularly high.^{4,5}

The intervention successfully reduced calls navigating to reception, which suggests reduced demand from patients with the common cold to consult with a GP. A resultant benefit for waiting times for routine appointments and therefore patient access would be an expected consequence. This is supported by an observed 21% reduction in the mean waiting time to the third available routine GP appointment when comparing data from March 2017 with¹⁴ March 2018.

This intervention has facilitated the practice's patient population consulting with more appropriate conditions for the skill set of a GP in a timelier manner.

A reduced proportion of patients choosing to self-manage in March (3.9%) compared with December (5.5%) correlates with a falling incidence of the common cold in that month.³ We believe this is the reason for the higher proportion of routine calls navigating to reception at the end of the intervention. If it had been down to patients learning how to navigate the trees then an increase in the proportion of urgent calls could be expected. However, this reduced during the intervention.

The incidence of the common cold varies annually and by region of the UK.^{1-3 14} Consequently, the practice's data on incidence of the common cold coded in GP consultations during the intervention period could not be reliably compared with practice data from previous winters or national data during the months of the intervention. To negate against the observed annual and regional variability in the incidence of the common cold,^{1-3 14} future studies measuring the effects of this intervention on common colds coded in a GP consultation could use a neighbouring practice of comparable demographics as a control group.

Table 2 Calls navigating the tree routinely by month

	October baseline	December	January	February	March
Proportion transferred (%)	94.1	88.6	90.3	89.9	91.2
Difference versus baseline (%)		-5.5	-3.8	-4.2	-2.9
P value		<0.001	<0.001	<0.001	<0.001

With the observed reduction in the mean third available appointment waiting time, the data size and variation in the annual incidence of the common cold prevented this from being shown to be statistically significant.

To the authors' knowledge this is the first published research to show that telephone announcements encouraging self-management of the common cold reduce demand on daytime general practice. Existing national health information services use online and telephone announcements to encourage patients to self-manage the common cold.^{9 10} Symptoms of cough, sore throat and cold made up 6.3% of all calls to such services.² The proportion is similar to the data from this study. These national health information services have proved useful in managing demand were 51.4% of paediatric calls regarding common cold symptoms resulted in telephone advice only.¹⁵ Satisfaction with these services is also reported to be high.¹⁶ A proportion of daytime general practice in the UK uses telephone triage to try to manage demand.^{4,5} But this can ultimately lead to more GP time being used to manage demand.⁵ This study uses targeted telephone announcements in daytime general practice at a time of year when a common problem is most prevalent,¹⁻³ to manage demand before a patient has spoken to a receptionist or a GP.

The authors encourage interested GPs to implement this intervention in their own practices to help improve self-management, reduce seasonal demand and improve patient access.

Correction notice This article has been corrected since it was published Online First. The paper has been made open access under CC BY-NC licence.

Contributors RK, AG, CM and HK planned the study. AG and CM collected the data. RK and HK reported the work. RK submitted the study and is responsible for the overall content as guarantor.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent for publication Not required.

Provenance and peer review Not commissioned; externally peer reviewed.

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