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Patient perception of telephone follow-up after resection for colorectal cancer: Is it time for an alternative to the out-patient clinic?

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Cover Page Footnote

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Abstract

The economic reality of modern healthcare provides a timely reminder to clinicians of their duty to provide outstanding and cost-effective care. Although multiple guidelines outline investigation, management and surveillance of colorectal cancer, none advocate a particular delivery method. Nurse-led telephone follow-up in multiple specialties has demonstrated equivalent clinical outcomes and patient satisfaction when compared to traditional outpatient department follow-up. This paper aims to compare nurse-led telephone and outpatient follow-up, following surgical resection of colorectal cancer (CRC), focusing on patient perceptions. This cross-sectional study distributed adapted patient satisfaction questionnaire (PS-Q 18) to patients undergoing surveillance following CRC resection via either nurse-led telephone clinics (TC) or standard outpatient department appointments (OPD). 161 questionnaires were distributed (100 OPD, 61 TC); the response rate was 70% for the OPD group, and 87% for the TC group ($p=0.02$). There was no statistically significant difference between patient reported satisfaction or in preference for healthcare delivery system between groups. More patients in the TC group had serum CEA measured than OPD group. This survey demonstrates high patient satisfaction with telephone follow-up. Owing to the financial benefits on both a patient and healthcare provider level, as well as improved screening uptake (CEA) in our study, a role for this innovative specialist nurse-led telephone clinic clearly exists. The benefits of telephone follow-up in terms of health economics, health equity and adherence to screening protocols support its exclusive role in long-term CRC surveillance.

Keywords

Patient perception, quality of care, nurse-led follow-up, telephone clinic, colorectal cancer, health equity, health economics, national health service, innovation

Introduction

Effective economic healthcare provision is a crucial challenge faced throughout the world. At a time when the National Health Service (NHS) is tasked with finding productivity improvements valuing £22 billion by 2020, there has never been a greater demand for innovation¹.

Colorectal cancer is the third most prevalent cancer worldwide, conferring an increasing economic cost². With the introduction of the '2-week rule' for suspected cancers, coupled with: a strict adherence to the 18-week patient pathway; a growing population living ever longer; earlier detection of cancers; consistent incidence rates; and 5 year survival rates doubling between 1971 and 2011; there has never been a greater population requiring colorectal cancer services³. National Institute for Clinical Excellence (NICE)

guidelines dictate best practice, with an expectation that NHS Trusts provide a broad continuum of care, including: screening, surgical treatment, and post-operative surgical follow up⁴.

Post-operative follow-up (surveillance) following curative surgery is characterised by three main aims:

- 1) Early identification of local recurrence or metastasis;
- 2) Detection of late effects and;
- 3) Optimisation of quality of life.

Current surveillance guidelines do not stipulate any particular method of delivery for clinical review, instead focusing on screening tools such as Carcinoembryonic Antigen (CEA) measurement, Computed Tomography (CT) and colonoscopy (Table 1).

Table 1: A summary of NICE 2011 Guidelines (Colorectal cancer: diagnosis and management)

Start follow up clinics 4-6 weeks after potentially curative treatment.
A minimum of two CTs of the chest, abdomen and pelvis in the first 3 years.
Regular serum CEA tests (at least every 6 months in the first 3 years).
Offer a surveillance colonoscopy at 1 year after initial treatment. If this is normal consider further colonoscopic follow up after 5 years, and thereafter as determined by cancer networks.
Start re-investigation if there is any clinical, radiological or biochemical suspicion of recurrent disease.

The potential of telephone follow up as an innovative approach to healthcare delivery has been previously investigated in both breast and colorectal cancer, proving multiple advantages: continuity of care⁵, improved accessibility⁶, improved economic efficiency⁷⁻¹¹, superior patient satisfaction with information (and subsequent reduced anxiety)¹², greater patient adherence to care plans, increased convenience for patients¹², and improved personalisation of care^{12,13}. Furthermore, patient willingness to receive telephone follow up has been demonstrated¹² and advocated by Macmillan Cancer Support, a leading cancer charity.

There is little evidence to suggest a superior survival benefit from patients undergoing more regular face to face clinical examinations. Although intensive follow up has been shown to improve overall survival in colorectal cancer², there is no evidence specifically advocating the importance of clinical examination. Indeed, in a comparable specialty, Beaver *et al.* found that clinical examinations offered “little actual benefit in terms of detection”².

The goal of this quantitative study is to investigate whether the 3 aims of surveillance can be satisfied by specialist nurse led telephone follow up in a busy NHS District General Hospital, with a focus on patient perceptions of the quality and utility of this alternative model of healthcare delivery obtained through additional free-text questions.

Methods

A single centre, cross-sectional survey, comparing patient satisfaction between those followed up by telephone clinic (TC) to those followed up in an outpatient department (OPD) was carried out in the surgical department of a busy District General Hospital (DGH) between 30th October and 11th December 2016. The survey tool is based on a questionnaire validated across multiple clinical settings (PS-Q 18)¹⁴, adapted to meet specific predetermined research aims. Patient demographic data, treatment and surveillance data were correspondingly collected.

Patients were initially sourced from a central hospital database detailing those colorectal cancer patients being

followed up. All sixty-one patients already undergoing telephone follow up were identified, and 100 patients were randomly selected from amongst the list of outpatient attendees for colorectal cancer surveillance. Patients were eligible for the study if they were over 18 years old, had undergone a CRC resection within the last five years, and were currently under surveillance by the colorectal team. No incentive was offered for participation. Randomisation was achieved using an online tool¹⁵. Questionnaires were posted to the address held on file for each patient and results were collated six weeks from the day the questionnaires were sent.

Statistical analyses were conducted using SPSS (IBM, London): unpaired Students T-test was used for continuous variables, with Chi-squared and Fisher’s exact tests used for categorical and dichotomous variables respectively. Only 3 questionnaire items had missing data: these patients were subsequently excluded during analysis of this particular item.

Ethical Considerations

Ethical approval for distribution of the questionnaires was obtained from the Trust’s Ethics Review Panel. Prior to receiving a questionnaire, patients consented to take part in the survey. Patients were under no obligation to complete the questionnaire and were free to leave the research study at any time.

Results

One hundred and sixty-one questionnaires were sent out (100 OPD, 61 TC) of which 123 (76.4%) were completed and returned (70 OPD, 53 TC). Nine patients were subsequently found not to have had cancer on histological assessment of their resected tumour (8 OPD, 1 TC) and 3 patients in the OPD follow up had been treated at a private clinic, and so little clinical information was available. The final sample used for analysis was 62 OPD and 52 TC.

The response rate was 70% for the OPD group, and 87% for the TC group ($p=0.02$). There was no significant difference between the characteristics of responders and non-responders (see Table 2).

Table 2: Selected demographic information of both responders and non-responders

	OPD			TC		
	Total patients (n=100)	Total respondents (n=62)	<i>p</i>	Total patients (n=61)	Total respondents (n=52)	<i>p</i>
Median Age (yrs)	71.5 (IQR 62-80)	72 (IQR 64-80)	0.74	73 (IQR 65-79)	73 (IQR 62-77)	0.91
Number of Males (%)	58 (58)	37 (60)	0.87	36 (59)	31 (60)	1.00
Number of emergency cases (%)	10 (10)	9 (15)	0.45	8 (13)	8 (15)	0.79

The mean interval between appointments was significantly longer in the telephone clinic group when compared to the OPD group (median time [IQR]: 6 months [0] Vs 4.5 months [2]), and there was a significantly longer period of time between the initial surgery and the questionnaire (median time [IQR]: 26.5 months [18.5] Vs 15 months [6.25]). Ninety-two percent (48/52) of patients in the telephone clinic group had no recurrence at the time of the questionnaire being sent, with 2 patients having had local recurrence and 2 patients developing metastases. In the OPD group, 77% (48) had no recurrence at the time of the questionnaire being sent, 6 developed metastases, 2 developed local recurrence, and 3 had both local recurrence and metastases. Differences in the rate of disease recurrence between the two groups is not significant ($p=0.10$).

All patients ($n=52$) in the TC group were reviewed by a Colorectal Clinical Nurse Specialist (CNS). In the OPD group, 17 patients were reviewed by a Consultant, 1 by a senior trainee (Registrar), 26 by a Colorectal CNS. Fifteen were being followed up simultaneously by the Consultant and CNS.

Surveillance Adherence

Patients had their CEA levels measured 6-monthly in 88.5% (46/52) of patients in the telephone group and 57.6% (34/59) in the OPD group ($p<0.001$). All 49 patients in the TC group who were eligible for CT during the study were offered scans at one year and two years post resection, compared to 91.4% (32/35) eligible in the OPD group ($p=0.69$). In the TC group 93.9% ($n=46$) of those eligible were offered a colonoscopy at 1 year compared to 93.6% ($n=44$) in the OPD group ($p=1.00$).

Patient satisfaction and perceptions

Patients receiving telephone follow up were asked six questions relating to their experience of telephone follow up, as illustrated in Table 3. Fishers exact test revealed there was no statistically significant difference in patient satisfaction between TC and OPD patients. Notably,

analysis of patient preference regarding follow-up format (see Question 4, Table 3) failed to find any significant difference in preference for either healthcare delivery system.

Patients attending Outpatient Clinic follow up were asked three further questions relating to waiting times, travelling times, and cost to the patient (Figures 1-3). Most patients ($n = 39$ [56.5%]) reported a travel time of 15-30 minutes, however a minority reported travel times exceeding 60 minutes ($n = 4$ [5.8%]). Most patients reported travel costs of between £2-£5 ($n=31$ [46.3%]), however, of note, 12 patients (17.9%) reported costs of £5-£10. The majority of patients reported waiting times between 15-30 minutes ($n = 36$ [52.9%]), thus our study suggests that additional times of between 30-60 minutes were incurred for the majority of patients, in addition to the traditional 20-minute consultation.

This paper aimed to seek out the patient voice as an asset to care quality and safety, thus each questionnaire concluded with a free text area where patients were asked for their views on their follow up. Representative comments include, “[it is] important to have access to outpatient clinics if needed, but phone calls are useful to review wellbeing”, “prefer ease of telephone appointment”, “there are long waiting lists [in the OPD]”. Four patients commented that they would prefer an OPD clinic appointment rather than telephone review.

Discussion

Quantifying surveillance effectiveness goes beyond comparisons of mortality data and at a time when investigation protocols remain consistent and accepted, the logical next step is to focus on how best to meet the needs of the patient. By advocating a method that enables proficient utilisation of resources, a greater number may subsequently benefit, as well as providing an alternative perhaps better suited to busy, modern lifestyles.

Table 3: Outcomes from Questionnaire (options were Yes or No)

Question	OPD (n=62) Responding 'Yes' (%)	TC (n=52) Responding 'Yes' (%)
Q1 - Was the outpatient department/ telephone an effective way of reviewing your wellbeing?	62 (100)	51 (98)
Q2 - Was the clinician careful to check everything when you talked about your care?	62 (100)	52 (100)
Q3 - Was the consultation long enough to adequately deal with everything you wanted?	62 (100)	52 (100)
Q4 - Would it have been easier to discuss your concerns at a telephone/ outpatient clinic?	10 (16)	12 (23)
Q5 - Were you happy to be reviewed by a specialist nurse clinician?	N/A	51 (98)
Q6 - Overall were you happy with the service?	61 (98)	52 (100)

To our knowledge, this is the second and now largest study assessing and comparing patient satisfaction with nurse led telephone follow up in colorectal cancer, and the first to be conducted in patients already undergoing follow up in the TC. Beaver *et al.* (2012) have previously published a 50 patient randomised controlled trial, where patients already undergoing follow up in the OPD, were allocated to either the TC or OPD group, concluding that nurse led telephone follow up was 'acceptable and feasible'¹⁶.

Analysis of Results

Demographics between the two groups in our study, including those who didn't respond, were similar, suggesting surveys returned came from comparative samples. Response rates achieved with both groups were high, with a higher response rate in patients being followed up by telephone, this may be representative of the level of engagement and motivation of those people being followed up by telephone clinic¹⁷.

Notable findings during our research were that patients in both groups were satisfied with their healthcare delivery model, as well as finding statistically similar preference for the alternative models (*i.e.* TC vs OPD). This corroborates with evidence gathered from patients with alternate types of cancer¹⁸. The most significant trial to date, by Beaver *et al.* (2009), compared OPD and telephone follow up satisfaction in a breast cancer population of 346 patients, concluding that "telephone follow up was well received by participants, with no physical or psychological disadvantage"¹⁷. Our paper serves to add to the growing body of evidence supporting the role of TC across a diverse range of healthcare settings.

In this study, the telephone clinic was conducted by a nurse specialist who knew the patients being followed up. Patients and families were able to communicate with a clinician familiar with their case, attending to the holistic needs of patients without inconveniencing those who would otherwise be left waiting in the OPD. Feedback in the free-text section supported the importance of this in satisfying patients concerns. Additionally, the research process represented an opportunity for patients to engage with, and potentially influence, policy making that directly affects their care provision.

There was no significant difference in recurrence rates between the two groups but despite this, a difference was found with CEA testing participation with a greater uptake of CEA screening amongst the TC group ($p < 0.001$). Given that patients attending the out-patient department are more likely to have blood samples performed during the same visit to the hospital, we believe that this difference is due to junior (and even senior) members of the team forgetting to complete the request forms. Anecdotally patients have also reported that they are deterred from waiting because of long queues in the phlebotomy department when they have already waited for their appointment. Conversely in the nurse-led TC group the patients have a blood request form sent to them two weeks before their telephone appointment which then acts as a reminder if the blood had not already been taken.

A higher percentage of patients in the telephone follow up underwent appropriate CT scanning and colonoscopy, although this was not statistically significant. This is a very interesting finding as most of our OPD patients were seen in clinic by the consultant or nurse specialist who were familiar with the follow up protocols. Errors in follow up

management might be linked to time constraints incurred when clinics overrun, limiting the capacity of the attending clinician to thoroughly review previous follow-up data. There are also problems with clinic cancellations and 'routine' follow ups being moved months into the future thereby breaching the colorectal cancer surveillance protocol.

Although not the case in this study, many readers will also be aware that in routine surgical clinics the most junior members of the team (junior non-specialist or specialist trainees) often review the surveillance patients. As a consequence of the rotational nature of these training posts in the UK, it could be the case that at each six-month follow-up the patients are being reviewed by a 'new' trainee who is unfamiliar with local and national surveillance guidelines. This would be negated by providing continuity of care via a dedicated team of nurse specialists.

Economics

Operational costs in the NHS are reflected by specific tariffs, dictating the value of reimbursement to a hospital trust for providing a service. The current 2017 NHS tariff for an appointment in the outpatient department is £66.76, compared to £24.01 for a telephone clinic appointment¹⁹. This reflects the significant additional fiscal burden of clerical and nursing staff in the OPD.

Despite the above, there is however some disagreement regarding the economic benefits of telephone follow up. Although the NHS tariff system implies significant savings, Beaver *et al.* (2009) argue that the training and setting up costs can negate this, concluding 'telephone follow-up for breast cancer may reduce the burden on busy hospital clinics but will not necessarily lead to cost or salary savings.'¹⁶ However, this analysis described the training of a significantly larger number of specialist nurses than this DGH study (7 vs. 2) for a comparable number of patients. Conversely, Kimman *et al.*'s (2011) economic evaluation of a 299 patient RCT, concluded the superior cost benefits of the TC¹⁶. At our busy DGH, no specific additional costs were incurred through training, reflecting the experience and seniority of existing specialist nurses. Therefore, in our study, it can be suggested that telephone follow-up represents a saving of £42.75 per patient in comparison to traditional OPD. Although the training cost implications should certainly be considered, it is hoped that the findings from this paper, and others discussing similar benefits, might lead to future inclusion as part of a standard training programme for all colorectal specialist nurses. In this way, this cost will be equated to the initial and ongoing training of medical students and junior staff.

It is also important to discuss several of our study findings from an equity perspective. As can be seen from the feedback of the OPD group, 15 patients spent in excess of

£5 getting to their appointment, possibly due to hospital parking, and the majority waited 15-30 minutes to be seen once they had arrived. Whilst for the majority of patients, transportation costs may at first appear negligible, accumulation over the follow-up course (suggested to be at least 5 years according to NICE guidelines⁴) may represent a significant barrier to accessing care amongst lower socioeconomic groups. Additionally, the opportunity cost of attending clinics, including waiting and travel times, might be felt more acutely amongst certain demographic groups. Previous research suggests that healthcare costs increase with declining income, whilst patients living further away from healthcare facilities experience poorer health outcomes, including in terms of non-attendance^{20,21}. Telephone consultations, which can be arranged at mutually convenient times and do not require costly, physical travel, might therefore represent a viable alternative as a means to addressing health inequity in access and outcomes between socioeconomic groups.

Limitations

Despite the many beneficial conclusions that can be drawn from our study, the authors recognise several important limitations.

Firstly, this was a cross-sectional study conducted in a single geographical location. It is therefore not possible to draw any causal relationships between intervention groups and results. Additionally, the authors cannot rule out geographical confounders influencing patient willingness to participate in alternative healthcare delivery model. However, the authors feel that this research complements previous findings of alternative studies in diverse locations, increasing its subsequent utility.

Secondly, given that this paper made use of ongoing TC groups, it was neither possible to use a probability-based sampling method, nor to conduct sample size power calculations. The non-random sampling method used to select patients from TC group, as well as their propensity to be more engaged in care, might limit internal validity of our paper as well as reducing generalisability of findings.

Lastly, the overriding positive feedback regarding all forms of patient follow-up limited variability across questionnaire parameters. This makes it difficult to formulate conclusions regarding divergent outcomes between the two groups and draws into question the reliability of these survey questions.

Conclusion

This survey demonstrates high patient satisfaction with the OPD and telephone follow up systems. Despite its advantages, the TC system is not standard practice in the NHS. This may be a consequence of medical or patient

perceptions (is a specialist nurse as competent as a Consultant surgeon? Do patients expect to see a ‘doctor’?), or it may be that expertise is lacking, and there is little drive for a change in practice where nurses need to be trained to conduct telephone clinics.

In this current climate where cost savings are necessitated, clinicians have an obligation to provide outstanding care, in a cost-effective manner. This study has shown the superiority of TC follow-up compared to OPD follow up, in routine colorectal cancer patients. Owing to the financial benefits and improved screening uptake (CEA) in our study, there is clearly a role for the specialist nurse led telephone clinic. The benefits of telephone follow-up in terms of health economics, health equity and adherence to screening protocols have been demonstrated, whilst continuing to support a patient-centred approach to care. Our study shows patients are happy with telephone follow-up as an alternative to out-patients. We advocate that long-term colorectal cancer surveillance can be undertaken predominantly in a telephone clinic setting and should be implemented as part of standard colorectal specialist nurse training programme.

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