

***Measuring the performance of telephone information
services:
A literature review***

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August 2002

EXECUTIVE SUMMARY

The Canadian Cancer Society's Cancer Information Service (CIS) is a national, bilingual, and toll-free service offering comprehensive information about cancer to cancer patients, their families, the general public and healthcare professionals. This literature review aims to collect information about other telephone information services, their performance indicators and user satisfaction measures.

The initial search yielded 224 publications, whose abstracts were reviewed for inclusion in the literature review. Based on the selection criteria outlined above, a total of 14 articles and book chapters were retained for full analysis. In six of these studies, the subject of review was five cancer information centres: National Cancer Institute US (NCI)'s Cancer Information Service, British Association of Cancer United Patients and their Families and Friends (BACUP), Dutch Cancer Society, Iranian Centre for Breast Cancer and Ireland's Action Cancer.

Performance indicators identified in the literature fall under the following categories:

- call centre operations
- caller characteristics
- reasons for calling
- service provided
- user feedback on service quality and call outcomes

The literature review findings provide a basis for addressing the two driving questions outlined in the methodology:

- 1) "What are the indicators and benchmarks for information service performance?"
- 2) "What are the indicators and benchmarks for user satisfaction?"

Results from the six studies that examined cancer information services are presented in tabular format and identify commonly measured indicators as well as trends and/or benchmarks in call centre performance. From this, several recommendations may be considered for application to the CIS operations and serve as context for interpretation of the next user survey report.

1.0 INTRODUCTION

1.1 Background

The Canadian Cancer Society's (CCS) Cancer Information Service (CIS) is a national, bilingual, and toll-free service offering comprehensive information about cancer to cancer patients, their families, the general public and healthcare professionals. In each of the four centres (Vancouver, Regina, Hamilton and Montreal), trained information specialists respond to inquiries in a supportive manner that ensures caller dignity and confidentiality. Since its inception in October 1996, the CIS has answered more than 400,000 inquiries on a broad range of cancer-related topics. Past user surveys (1998, 1999, 2001) have indicated a high level of satisfaction among users about the service and testimonials from users continue to reinforce CIS's value to Canadians.

1.2 Purpose

The success of any large-scale communications system requires an understanding of its users: who they are, their information needs, their satisfaction with the information provided, and the system's influence on their behaviour (Freimuth et al. 1989). To this end, CCS conducts bi-annual evaluations of the CIS, specifically, surveys of its users. CCS has partnered with the Centre for Behavioural Research and Program Evaluation (CBRPE) in an effort to link research to practice and ensure its policy and programming are evidence-based. This literature review aims to collect information about other telephone information services, their performance indicators and user satisfaction measures so it may be considered for application to the CIS operations and serve as context for interpretation of the next user survey report.

2.0 METHODOLOGY

2.1 Key Questions

The methodology used was a modified version of a systematic literature review, which includes the clear identification of the question(s) to be asked. Based on consultation with the Canadian Cancer Society, two questions were identified:

- What *indicators* for telephone information service performance and user satisfaction are described in the literature?
- What *benchmarks* for information service performance and user satisfaction exist?

2.2 Selection Criteria

Inclusion criteria for publications were:

- 1) descriptive or evaluative studies and/or articles on telephone information service or call centre *performance* or *user satisfaction*, and
- 2) English-language articles.

Although cancer or health information services were the focus of the literature review, the search criteria was expanded to include other forms of information services and call centres to allow inclusion of a larger number of papers. Healthcare telephone services limited to hospital triage or clinical treatment advice, delivery or referral were excluded from the review.

2.3 Search Protocol

In July 2002, four electronic databases (MEDLINE, PsycINFO, Sociological Abstract and Social Services Abstract) were searched from 1985 to 2002 using the Cambridge Scientific Abstracts search engine. The search terms included key words: call center; call centre; cancer information service; telephone information service; health information service; information helpline. In addition, a search using PubMed, Social Science, and Internet databases from 1996-2002 was conducted under the search term 'call centre performance'. Only those abstracts meeting the selection criteria were reviewed for inclusion. The reference list of each selected article was also searched for additional publications meeting this criteria.

2.4 Limitations

There are a few limitations of this literature review that should be taken into consideration in interpreting its results.

- There were limited related articles were available. Scientific rigor of the studies was variable and there was a lack of evaluative studies, published materials.
- Difficulty was experienced accessing more obscure, out-of-print publications on call centre performance and health communications; some relevant literature may have been overlooked.
- To ensure an adequate number of articles in the analysis, the review was not limited to cancer information services, and all results may not be applicable to the CIS.
- Time constraints prevented extending additional search efforts.

3.0 FINDINGS

The initial search yielded 224 publications, whose abstracts were reviewed for inclusion in the literature review. In the event that an abstract was unavailable the full article was reviewed. Based on the selection criteria outlined above, a total of 14 articles and book chapters were retained (Appendix 1) for full analysis.

Studies	Subject
5	Performance of and/or user satisfaction with a cancer information service
1	Descriptive analysis of the callers of the cancer information services
3	User satisfaction with healthcare and call centres
5	Strategies and best practices for improving call centre performance

Each of the five cancer information centres studied (National Cancer Institute (NCI)'s Cancer Information Service, British Association of Cancer United Patients and their Families and Friends (BACUP), Dutch Cancer Society, Iranian Centre for Breast Cancer, Ireland's Action Cancer) provide a range of services including provision of general and specialized cancer information, advice as well as psychosocial support to cancer patients, their families and friends, and the general public. The three healthcare call centres (England's NHS Direct, Swedish medical call centre, Californian after-hours HMO call centre) provided health and medical information, advice, and the latter two also provide telephone triage services.

Performance indicators can be used to measure an information service's activities (quality of service delivery), outputs and impact. Performance indicators identified in the literature are outlined below under the following categories:

- call centre operations
- caller characteristics
- reasons for calling
- service provided
- user feedback on service quality
- call outcomes.

3.1 Call centre operations

Call centre operations are critical to the efficient and effective performance of an information centre. Everything from the service delivery model to the scheduling of centre staff plays a key role in its operation. Establishing a clear service delivery model, which may include provision of information, referrals and/or support, is critical. The American Productivity and Quality Center's (APQC) Call Centre Performance Benchmarking Study (1996) stresses linking the model and performance indicators with organization vision and goals.

Running a successful call centre starts with the hiring and systematic and continuous training of superior personnel, maintaining open lines of communication among staff and management, and recognizing staff for exceptional service (APQC, 1996; Fleisher

et al., 2001; Freimuth et al., 1989; Serafino, 2000). A large part of staff management is ensuring appropriate staff scheduling for call volume to ensure optimal call centre performance. Monitoring call volume trends, including speed of answer, length of call, time in queue, missed calls and abandonment (hang-ups), will enable the forecasting of required staff levels for the call traffic (peak periods) and reduce idle time (Anton & Gustin, 2000).

Managing call centre activity requires an investment in appropriate technology, i.e. automated call routing system, database (APQC, 1996; Serafino, 2000) and implementing systems for quality assurance, i.e. standardized processes, internal monitoring, call documentation, user feedback (APQC, 1996; Fleisher, 2001; Healthcare Demand, 1998; Serafino, 2000). Serafino (2000) reminds us that all operational strategies and activities should focus on the relationship with the end user.

Call operations indicators identified in the literature were call volume, speed of answer, length of call, time in queue, missed calls and abandonment rate (hang-ups).

Confidentiality was alluded to as an important aspect of any call centre, but none of the literature provided processes for guaranteeing or tracking caller confidentiality.

3.2 Caller characteristics

Caller demographics were indicators used in eight of the studies examined. In each of these, women comprised the over-whelming majority of callers, up to 80 percent in Slevin et al., O'Cathain et al., and Venn et al., all of which are evaluations in British health information services. This can be explained by the fact that women are often the 'gatekeepers' for health information and healthcare decision-making for their families.

Six of the studies identified the target groups represented in their callers. Most commonly used target groups were patients, relatives and friends calling on behalf of a patient, health professionals and the general public. Manning & Quigley (2002) additionally distinguished individuals exhibiting cancer-related symptoms and Freimuth et al. (1989) identified individuals with symptoms together with their families/friends. Inconsistent trends in caller breakdown by the three target groups were observed (see Table 1). Venn et al. (1996) identified that different target groups, specifically patients and relatives/friends, had varying predictors for emotional impact overall satisfaction, suggesting that the needs of patients and their significant others are different; patients are looking primarily for information, while relatives and friends are in need of reassurance and support. Lechner & De Vries (1996), on the other hand, found that patients had a greater need for interpersonal feedback than relatives and friends.

Eight of the studies included age in the data collected and analyzed. Overall, users tend to be 30-49 on average. Cancer incidence rises with age yet individuals 60 and over are typically under-represented (Slevin et al., 1988; Lechner & De Vries (1996); Manning et al.), when compared to their age-adjusted risk for cancer, perhaps because oftentimes calls aren't from patients themselves, but from patients' friends or family.

This theory is reinforced by the fact that studies with higher representation from patients have an older caller pool, while those with more calls from relatives and friends have relatively younger callers.

Four studies (Freimuth et al., 1989; Lechner & De Vries, 1996; Montazeri et al., 1999; Wahlberg & Wredling, 2001) examined education level of callers and found that users are consistently more educated than the population as a whole. This is consistent with general utilization rates of community health and prevention services. Alternatively, it is perhaps simply because people of higher education are more likely to access health information via telephone.

Only two studies (Slevin et al., 1988; Venn et al., 1990) observed socio-economic status, generally as a function of occupation. In both cases, the majority of callers were middle-class, which is consistent with the higher-than-average education level of the common caller profile.

Both Slevin et al. (1988) and Freimuth et al. (1989) found that ethnic minority groups were under-represented compared to their representation in the general population, but this can perhaps be a function of socio-economic status and/or education level rather than ethnicity.

In the two studies that collected data on marital status (Montazeri et al., 1999; Lechner & De Vries, 1996), the majority of callers (82-85%) were married. That most callers are also women adds strength to the rationale that women often access information on behalf of family members.

To assess distribution of callers among multiple regional information centers, three of the studies captured geographical location of callers (Slevin et al., 1988; Montazeri et al., 1999; Freimuth et al., 1989).

Four of the five information centers collected information of the cancer type (Montazeri et al., 1999; Freimuth et al., 1989; Slevin et al., 1988). Breast, lung, colon and genital/reproductive cancers were most common subjects of inquiry. Compared to population incidence rates, breast and genital cancers were often over-represented and cancer of the lung and colon under-represented.

3.3 Reasons for calling

Both Freimuth et al. (1989) and Montazeri et al. (1999) found that callers were looking primarily for information when they contacted the service. Specifically, they sought information on cancer prevention, risk factors, treatment and cancer in general. Other cited reasons for calling were for emotional support or healthcare referral. Ninety-five percent of callers in O'Cathain et al.'s (2000) study of a healthcare advice line, not surprisingly identified advice as the purpose of their call, specifically on what type of medical care they required, i.e. emergency services, visit to general practitioner, self-treatment. It would seem, in the case of the cancer information services, that the

service is filling in an information gap in communication with primary healthcare provider.

3.4 Service provided

The service provided during the call was tracked in two of the studies. O'Cathain et al.'s (2000) examination of the healthcare advice line detailed the type of medical attention the callers were recommended to seek. In Freimuth et al.'s study, sixty-two percent of callers were sent materials related to their subject of inquiry. Callers were also frequently (39%) advised to contact a community health agency or service, or to visit their doctor or obtain a second opinion (28%). Twenty-one percent were asked to share the information with others or have another person call the service. Two-thirds of the calls averaged 1 to 5 minutes in duration. In a few cases (4%), a follow-up communication was required. At the NCI's Cancer Information Service, in cases where information or advice of a medical nature is discussed, the information specialists give callers a medical disclaimer that directs them to a physician for complete advice.

3.5 User feedback related to service quality

User feedback was gathered in eight of the studies and has been categorized in the following five areas: service characteristics, quality of information, information specialist characteristics, degree that expectations were met and overall satisfaction.

3.5.1 Service characteristics

Various elements of the service itself were evaluated by users in the literature examined. Lechner & De Vries (1996) looked at the telephone as an appropriate channel for communicating information and found that 93 percent viewed it positively. Montazeri et al. (1999) investigated utility of the service in general and 97 percent of callers reported it as useful or very useful.

Twelve percent of callers in Lechner & De Vries (1996) study indicated the service was insufficiently accessible. Dissatisfaction with accessibility often involved trouble getting through to an agent, either because the line was busy or the wait was too long, as reported by Wahlberg & Wredling (2001). This study also received feedback on convenience of a telephone-operated service; callers commented on the time and money saved using the phone instead of making a visit to an institution. Offering a toll-free service removes financial barriers and ensures more equitable access.

Caller satisfaction is also a function of the responsiveness of the service. Issues like long wait times, frequent busy signals or unanswered calls all have a negative impact on user satisfaction. Service responsiveness is also reflected by agent access to information; the quicker the caller can be provided with the information they are looking for, the more satisfied with the service they are (Anton & Gustin, 2000).

Most callers (61-69%) learned of the service through the media in both Freimuth et al. (1989) and Montezari et al. (1999), the only two studies that examined this aspect.

Other sources of familiarity with the service included the telephone directory, referral from a health professional and through word-of-mouth.

3.5.2 Quality of information

All eight of the evaluations of call centers looked at the quality of information provided. Many (Lechner & De Vries, 1996; Venn et al., 1996; Slevin et al., 1988; Montazeri et al., 1999) investigated the level of comprehension, whether it was clear and sufficient both in quantity and detail, and reported high ratings (80-95%). Others asked for feedback specifically on the advice provided (O'Cathain et al., 2000; Venn et al., 1996; Chang et al., 1999) and over ninety percent of respondents reported that it was helpful. Freimuth et al. (1989), Venn et al. (1996) and Lechner & De Vries (1996) found the information useful and relevant to callers' needs. Fifty-four percent of participants in Freimuth et al.'s (1989) evaluation stated the information was new to them.

3.5.3 Staff characteristics

Four studies captured feedback on qualities related to the call centre staff. The information has been grouped in the following categories: behaviour, knowledge and communication skills. Responses in all four (Freimuth et al., 1989; Lechner & De Vries, 1996; Venn et al., 1996; Wahlberg & Wredling, 2001) were positive with respect to the staff's behaviour, specifically that it was reassuring, friendly, respectful and sympathetic. Lechner & De Vries (1996) found that patients rated this aspect more favourably than the public. Freimuth et al. (1989), Venn et al. (1996), Wahlberg & Wredling (2001) also reported positive reviews on staff knowledge and expertise. In addition, communication skills, such as listening, attentiveness, and speech clarity were rated highly by the majority of respondents in Lechner & De Vries (1996) and Venn et al. (1996).

3.5.4 Degree that expectations were met

Lechner & De Vries (1996) were the only group to compare the service provided with the caller's stated expectations of the call. Callers often cited multiple expectations that were often reflective of the stated purpose of the call and the majority of callers indicated that their expectations were met, varying from 72% for getting medical information, 73% for getting help with problems, 75% for getting advice, 81% for getting practical information to 89% for getting sympathy.

3.5.5 Overall satisfaction

Data collection relating to overall satisfaction with the service ranged from completion of a rating scale on general satisfaction with the service (Freimuth et al., 1989; Lechner & De Vries, 1996) to asking callers to consider certain elements of the service, i.e. access, communication skills, information and advice, needs met (Montazeri et al., 1999) and in the case of Venn et al., 1996, completing aggregate scores for the various elements. In all cases, the reported satisfaction was 90 percent or higher.

3.6 Call outcomes

Action taken as result of the call and the emotional impact of the call were the two call outcomes that were examined in the literature. In incidences where advice was provided, the majority of advice was followed; 97 percent in O'Cathain et al. (2000) and all callers in Chang et al.'s (1999) study. More than ninety-three percent of callers in Freimuth et al. (1989) reported taking action following their call, most commonly reading materials mailed to them, sharing the information or seeking medical attention. In Montazeri et al. (1999) and Slevin et al. (1988) the most frequently reported actions taken were making a doctor's appointment or contacting a support group or another service.

Emotional impact was measured by reduced fear or anxiety or an improved mood. In Lechner & De Vries (1996) the majority of respondents were tense or frightened before they called the helpline; after calling, tension decreased by 42% and fear likewise in 31%. Wahlberg & Wredling (2001) also identified a calming effect experienced by callers. Participants in Montazeri et al. (1999) and Slevin et al. (1988) reported feeling more cheerful and less worried after their call to the service. Venn et al.'s (1999) emotional impact score represented a mean score of thirteen 5-point scales and they too found that calls had a positive emotional impact on callers.

4.0 DISCUSSION

4.1 Performance Indicators and Benchmarks

The literature review findings provide a basis for addressing the two driving questions outlined in the methodology: "What are the indicators and benchmarks for information service performance and user satisfaction?" Table 1 identifies commonly measured indicators as well as trends and/or benchmarks in call centre performance.

4.2 Implications for CCS/CIS

- Investigate the different information needs of the various target groups - patients, significant others, the general public.
- Consider/continue providing tailored service appropriate to their needs, including targeted promotional efforts.
- The recruitment, education and training of telephone specialists should place a strong emphasis on their supportive and communicative roles.
- A standardized process for internal quality monitoring is crucial to the effective operation of the CIS.
- User survey should measure certain elements of the service including service characteristics, quality of information, information specialist characteristics, degree that expectations were met, and overall satisfaction.
- Benchmark for user satisfaction is 90%.
- Consider using media as promotional tool.

Table 1 – Indicators and Benchmarks for telephone health information service performance and user satisfaction

Note: Only results of the five cancer information services are presented below.

Indicator	NCI (1989)	U.K.¹ (1996)	Dutch (1996)	Iran (1999)	Irish (2002)	CIS (2001)
Operational²						
Call volume (# inquiries)	370,000+/yr	~20,000/year	10,000+/yr	1,000/yr	10,000+/yr	78,000/yr
Length of call	67% 1-5 min					6-8 min
Outside-call work-time	61% 1-5 min					
Reach³ (Caller characteristics)						
Target Group ⁴	47% public	39-62% family/friends ⁵	46% patients	86% patients	54 % patients	34% public 26% family/friends
Age	30-39 yrs	30-49 yrs	30-49 yrs Avg 46.9 yrs	Avg 34 yrs	31-59 yrs	30-59 yrs
Gender (Women)	71%	80%	74%	95%	77%	73.8%
Education	53% HS+		27% highly ed.	80% HS+		59% postsecondary
Ethnicity (White)	88%	97.6%				
Socio-economic status		Middle class				
Marital status			85% married	82% married		
Cancer type	Breast, colorectal, lung	Breast		Breast	Breast, prostate, bowel, lung	Breast, prostate, colorectal, lung
Reason for calling	Information		Information	Information	Information	Information and referral to services
Service						
Service provided	62% sent info					~30% sent info
Service quality measures						
Service useful	Positive	89%	74%	97%		95%
Information provided	96%	95%	78%	80%		96.6%
Staff characteristics (knowledge/behaviour)	95/97%	90%	97%			88.9/ 93.1%
Expectations/needs met			76%			70%
Overall satisfaction	94%	4.5/5	94%	99%		98.5%
Outcomes						
Action taken	93% read info	MD appt		MD appt		
Info shared/Referral	58/50%					2.8% referred from family or friend
Emotional impact		3.8/5	positive	80%		
Made easier to understand, cope, communicate						40-80%

¹ Two studies (Slevin et al. and Venn et al.) examined the U.K.'s BACUP.

² Speed of answer, time in queue, missed calls, abandoned calls (hang-ups), number of calls/agent/shift are other operational indicators which may be tracked, but these studies did not collect this data.

³ Reach indicators have implications for promotion. No one reports percent of target using the service but they present the caller profile of those that do call.

⁴ Patients represents those diagnosed as well as individuals exhibiting symptoms.

⁵ In Venn et al., inquiries from health professionals or for materials only were excluded from the study.

REFERENCES

- American Productivity & Quality Center (1996). *Measuring call center performance: Consortium benchmarking study final report (Executive Summary)*. Houston, TX: American Productivity & Quality Center.
- Anton, J. & Gustin, D. (2000). *Call center benchmarking: How good is "good enough"*. West Lafayette, IN: Purdue University Press.
- Canadian Cancer Society's Cancer Information Service (2001). *Annual Statistics Report 2000-2001*.
- Canadian Cancer Society's Cancer Information Service (2001). *User Survey 2001*. Centre for Behavioural Research and Program Evaluation, NCIC, University of Waterloo.
- Chang, B.L., Mayo, A. & Omery, A. (2001). Consumer satisfaction with telehealth advice-nursing. *Medinfo 2001* (pp. 4-9). Amsterdam: IOS Press.
- Fleisher, J. (2001). A sharper focus on quality: How five call centers improve agents' communication with callers through a combination of monitoring, training and customer feedback. *Call Center*, July 2001, 90.
- Freimeuth, V.S., Stein, J.A. & Kean, T.J. (1989). *Searching for health information: The Cancer Information Service model*. Philadelphia, PA: University of Pennsylvania Press.
- Healthcare Demand & Disease Management (1998). Make CQI an integral part of call center management. *Healthcare Demand & Disease Management*, 4, 53-55.
- Lechner, L. & De Vries, H. (1996) The Dutch cancer information helpline: experience and impact. *Patient Education and Counselling*, 28, 149-157.
- Manning, D.L. & Quigley, P. (2002). Understanding the needs of people using a cancer information service in Northern Ireland. *European Journal of Cancer*, 11, 139-142.
- Montazeri, A., Haghghat, S., Vahdani, M., Jarvandi, S. & Harirchi, I. (1999). Evaluation of a national breast cancer information service: the Iranian experience. *Support Care Cancer*, 7, 154-157.
- O'Cathain, A., Munro, J.F., Nicholl, J.P. & Knowles, E. (2000). How helpful is NHS Direct? Postal survey of callers. *British Medical Journal*, 320, 1035.
- Serafino, R. (2000). Do's and Don'ts for Call Centers. *Health Management Technology*, 21, 42.
- Slevin, M.L., Terry, Y., Hallett, N., Jefferies, S., Launder, S., Plant, R., Wax, H. & McElwain, T. (1988). BACUP - the first two years: evaluation of a national cancer information service. *British Medical Journal*, 297, 669-672.
- Venn, M.J., Darling, E., Dickens, C., Quine, L., Rutter, D.R. & Slevin, M.L. (1996). The experience and impact of contacting a cancer information service. *European Journal of Cancer Care*, 5, 38-42.
- Wahlberg, A.C. & Wredling, R. (2001). Telephone advice nursing - caller's experiences. *Journal of Telemedicine and Telecare*, 7, 272-276.

APPENDICES

Appendix 1 - Table of Publications Reviewed

Citation	Service/Article Description	Descriptive/Evaluative	Evaluation Design (if applicable)	Participants	Indicators/Measures	Results (Possible Benchmarks)
American Productivity & Quality Center (1996) <i>Measuring Call Center Performance: Consortium Benchmarking Study (Executive Summary)</i>	Examination of key trends and best practices in the area of measuring call centre performance.	Descriptive (corporate)	<ul style="list-style-type: none"> Data was gathered through planning sessions, questionnaires, and interviews. APQC consortium 4-step benchmarking methodology (Plan, Collect, Analyze, Adapt) used. 	22 companies	<ul style="list-style-type: none"> People measures (hiring, training, communication, quality monitoring, rep empowerment) Center performance (service level, customer satisfaction, scheduling and staffing, technology) Linkages (link performance measures to mission/goals, call centre is link to customers) 	
Anton, J & Gustin, D (2000) <i>Call Center Benchmarking: How Good is Good "Enough"</i>	Benchmarking call centre performance measures.	Descriptive (corporate)			<p>Efficiency</p> <ul style="list-style-type: none"> Avg speed of answer Avg talk time Avg after call work time Avg abandonment rate Avg time before abandoning Avg time in queue # calls/agent/shift <p>Effectiveness</p> <ul style="list-style-type: none"> Caller satisfaction 	

Citation	Service/Article Description	Descriptive/Evaluative	Evaluation Design (if applicable)	Participants	Indicators/Measures	Results (Possible Benchmarks)
Chang, Mayo, & Omery (1999) <i>Consumer Satisfaction with Telehealth Advice-nursing.</i>	Seven after-hours medical call centres in California staffed by nurses	Evaluative - quality of nursing process and relationship with consumer perceptions. (clinical)	<ul style="list-style-type: none"> Over a 6 month period, calls were audiotaped with consent. Nurses reviewed each call's quality of nursing process using a standardized method. Follow-up phone calls were made to (all callers?) to assess caller satisfaction, helpfulness, and implementation of recommendations provided. 	157 - response rate unknown	<ul style="list-style-type: none"> Satisfaction with advice Helpfulness of advice Caller follow-through 	<ul style="list-style-type: none"> 95.5% were completely to somewhat satisfied with the advice. 93.2% found the advice to be helpful. All followed all or some of the advice.
Fleisher, J (2001) <i>A Sharper Focus on Quality: How five call centers improve agent's communication with callers through a combination of monitoring, training and customer feedback.</i>	Case studies on five company's quality assurance practices - call monitoring and customer feedback.	Descriptive (corporate)			<ul style="list-style-type: none"> Internal call monitoring - recording and reviewing random calls using call monitoring technology as well as 'side-by-side' monitoring. Calibrate scoring systems regularly between call monitors. Gather customer feedback via randomized phone and mail surveys. Recognizing call centre staff for outstanding customer service. 	

Citation	Service/Article Description	Descriptive/Evaluative	Evaluation Design (if applicable)	Participants	Indicators/Measures	Results (Possible Benchmarks)
Freimuth, VS et al. (1989) <i>Searching for Health Information: The Cancer Information Service Model</i>	The National Cancer Institute's Cancer Information Service - provides cancer information to the public.	Evaluative - analysis of call profiles and users' satisfaction with service and its impact on their health behaviour.	<ul style="list-style-type: none"> All instruments were pilot-tested. Standard data collection of all call record forms (which are completed for every call) occurred in all regional offices over a four year period. User survey was mailed to a sample of users from all regional offices that had been sent materials over a 16-month period with two follow-up reminders. The questionnaire evaluated: the degree to which CIS is able to meet informational needs of its users; relative effectiveness of CIS in affecting users' health (compared to other information sources); degree to which contact with CIS influences the health behaviour of users. All data was processed into a single data set and processed centrally by NCI. 	1,380,925 call record forms 7,530 user surveys (64.7% response rate)	Call Record Form <ul style="list-style-type: none"> User demographics (age, sex, education, ethnicity, target group, location, previous calls, how they found out about CIS) Administrative (date, staff, ID#, time of call, follow-up) Inquiry/response (subject of inquiry, behavioural suggestion provided) User Survey <ul style="list-style-type: none"> Reason for calling 	Call Record Form <ul style="list-style-type: none"> 80% of calls were from first-time users. Members of the general public represented 47% of calls, followed by family/friends (22%), patients (11%), professional (10%), symptomatic callers (8%). Females accounted for 71% of inquiries. Almost 88% of callers were white, compared to 80% of the US population. The most frequent users were between the ages 30-39 (25%), followed by 20-29 (19%). Over 53% of users had at least some post-secondary education. 61% learned of the service from the media (electronic and print), 12% via phone directory, 10% through a health professional and almost 8% by work-of-mouth. Information on cancer risk factors accounted for 22% of inquiries, followed by physician or healthcare referrals (21%), general cancer info (21%), treatment info and options (17%), prevention (13%). Almost 40% asked about a particular cancer site, with breast, colon, and lung being most common. Callers were most frequently advised to contact a community or health agency/service (39%). 28% were directed to visit their MD or seek a second opinion, 21% were asked to share the information or have another person call the service, and 11% were urged to stop/reduce their smoking. Two-thirds of inquiries average between 1 and 5 minutes in duration; calls lasting 6-15 min (24%) and those longer than 15 min (7%). Usually (61%) 1-5 minutes was spent off the phone for each call, however 30% of calls required no additional time. 62% of calls were sent publications. User survey <ul style="list-style-type: none"> Survey respondents indicated a high level of

				<ul style="list-style-type: none"> • Referral/diffusion of information • Quality and helpfulness information • Staff knowledge and behaviour • Satisfaction with the service • Utility of printed materials • Action taken as a result of the call 	<p>satisfaction in areas of information received, staff and overall usefulness.</p> <ul style="list-style-type: none"> • The majority indicated their motivation for calling was for information, others were looking for a physician referral (9%) or someone to talk to (12%). • More than 96% found the info given clear and easy to understand and 94.9% found it helpful. • 97.6% indicated they would call again in the future. • Almost 50% had already recommended the service to others at the time they were surveyed. • Respondents found the staff knowledgeable (94.8%), courteous (96.8%), friendly and sympathetic (96.7%). • Almost 94% of respondents labeled themselves very or somewhat satisfied with their overall use of CIS. • Prompt response, useful information, courteous and sympathetic staff, clear and understandable info and the free nature of the service were cited by a majority of the respondents as areas they liked most about the service. • 66.5% responded that nothing was unsatisfactory while some indicated busy signals (10.6%), hard to find number (6.2%), and wait time (3.4%). • 54.2% reported the information was new to them, others indicated the info received concurred or elaborated on the info they already had. • More than 93% of callers surveyed reported taking action following their call, most commonly: reading materials mailed to them (82.7%), sharing info (58.4%) and seeking medical attention (24.3%). Others included: seeking more info, behaviour change, self-detection. • 92% of callers responded that their contact with the service was important in their decision to take health-related action, relative to other commonly stated influencers (friends/family, media, physicians).
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Healthcare demand and disease management, (1998) <i>Making CQI an integral part of call center management</i>	Review of CQI strategies for medical call centres	Descriptive (clinical)			<ul style="list-style-type: none"> • Clinical algorithms to direct call response • Quality indicators • Performance means • Call monitoring • Reducing variances • Staff training 	
Lechner H & De Vries, H (1996) <i>The Dutch cancer information helpline: experience and impact.</i>	The Dutch Cancer Society's information telephone helpline which provides information about cancer or psychosocial support from trained oncology educators with a medical/paramedical background, equipped with a computerized documentation centre.	Evaluative - comparative analysis of the experience and impact of the service on its three target groups: cancer patients, friends and relatives, and the general public.	<ul style="list-style-type: none"> • All helpline callers during a four week period were asked to participate in the study. • Registration form completed during the call collected demographic characteristics to identify selective response to the questionnaire. • A questionnaire was mailed to those that agreed to participate, collecting information on 'input' and 'outcome' factors (listed in Indicators). 	532 (73% response rate)	<p>INPUT</p> <p>Caller Demographics</p> <ul style="list-style-type: none"> • Target group • Age • Gender • Educational level • Marital status <p>Channel (telephone)</p> <ul style="list-style-type: none"> • Accessibility • Approachability • Pleasantness • Appropriateness <p>Quality of information</p> <ul style="list-style-type: none"> • Clarity • Usefulness • Amount • Overall quality <p>Communication skills</p> <ul style="list-style-type: none"> • Sincerity • Respect • Attention • Empathy • Supportiveness • Reassurance • Expertise <p>IMPACT</p> <p>Degree that expectations met</p> <ul style="list-style-type: none"> • Medical info • Practical info 	<ul style="list-style-type: none"> • Patients represented the largest group (46%) followed by relatives/friends (37%) and the general public (17%). Patients were significantly older than friends/relatives and the general public. • Women comprised 74% of callers. • Avg age was 46.9 and 85% had a spouse. People with high level of education were somewhat over-represented. • The evaluation of the telephone as a channel for communicating about cancer was positive for all groups. • The information received was evaluated positively by all three groups. • All aspects of the educator's communication skills were perceived as positive; patients and relatives evaluated sincerity, respect and support more favourably than did the public. • Expectations were largely or completely met by most respondents in all groups. • The majority of respondents were tense or frightened before they called the helpline; after calling, tension decreased by 42% and fear likewise in 31% of all respondents. • Overall satisfaction with the information helpline was positive. • For the general public and relatives/friends, information received was the best predictor of satisfaction, while for patients the educator's communication skills proved to be the best predictor. • For patients and relatives, the educator's

					<ul style="list-style-type: none"> • Advice • Sympathy • Help with problems <p>Impact on:</p> <ul style="list-style-type: none"> • Fear • Tension <p>Overall satisfaction</p>	<p>communication skills were the only significant predictor of impact on anxiety.</p> <ul style="list-style-type: none"> • For patients and relatives, both information and communication skills were significant predictors of impact on meeting expectations. • Patients had a greater need for interpersonal feedback than the general public or relatives/friends. • Helplines should provide different target groups information that is matched to their specific needs: general information for the general public; emotional feedback and support for patients and significant others.
Manning, DL & Quigley, P (2002) <i>Understanding the needs of people using a cancer information service in Northern Ireland.</i>	Action Cancer - a cancer information service staffed by specialists and volunteers, provides that information, counseling and help to cancer patients, their families and friends.	Descriptive - a retrospective analysis of enquirers using the service.	<ul style="list-style-type: none"> • Inquiry record forms from first-time callers contacting the cancer information service over an 18-month period were analyzed. • Figures expressed as a percentage of total callers or standardized incidence rates. 	571	<ul style="list-style-type: none"> • Demographic details (gender, age, target group) • Nature of enquiry (cancer type and specific request) 	<ul style="list-style-type: none"> • Women (77%) were three times more likely to use the service than men. • Users were categorized into three groups: relatives or friends seeking information on behalf of a cancer patient (46%), individuals requesting information about cancer-related symptom (33%), and cancer patients (21%). • Though the majority of cancers occur in people over 60, most callers, whether patients or friends/relatives, were below the age of 60, indicating greater impact of a cancer diagnosis in younger life. • Disproportionately higher number of inquiries for breast, testicular, and cervical cancer than incidence figures would suggest. Bowel, lung and prostate cancer inquiries were under-represented.

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Montazeri, A et al. (1999) <i>Evaluation of a national breast cancer information service: the Iranian experience.</i>	Iranian Centre for Breast Cancer - national cancer information service, staffed by female GPs.	Evaluative - impact of contacting the service.	<ul style="list-style-type: none"> Used same methodology as Slevin et al. Call record form completed for each inquiry - relates to the demographics of the caller and nature of call. User survey completed via telephone - collects information on perceived quality of the information, feelings about contacting the service, overall satisfaction with the service and whether action was taken as a result of the call. 	1,000 call record forms 400 user surveys (response rate not reported)	<ul style="list-style-type: none"> Caller demographics (age, gender, education, marital status, location, target group) Reason for call Service utility Understandable information Emotional impact (mood) Action taken as a result of the service Overall satisfaction (access, timing, communication skills, information and advice given) 	<ul style="list-style-type: none"> Most callers were married women (95%) with relatively high level of education. Majority (77%) of callers were calling for more information about breast diseases, 13% for treatment options, 10% for emotional support. 86% of inquirers were cancer patients. 97% of respondents described the service as useful or very useful. 80% perceived the information as easy or very easy to understand. Over 80% reported feeling more cheerful and less worried after calling the service. Most common action taken was to make a doctor's appointment. 99% were satisfied with the overall service provided. People often require more - information and/or emotional support - than their doctor provides.
O'Cathain, A et al. (2000) <i>How helpful is NHS Direct? Postal survey of callers.</i>	NHS Direct - 24-hour telephone advice line - uses a computerized decision support system (clinical algorithms) to ensure consistent clinical advice. Offered from 3 sites in Britain, staffed by nurses.	Evaluative - callers' experiences and views of the service.	<ul style="list-style-type: none"> A sample of 350 consecutive calls was taken at the three sites over the course of a week. A questionnaire was mailed to the 1050 callers with up to two reminders, resulting in 719 responses. 	719 (71% response rate)	<ul style="list-style-type: none"> Caller demographics (age, sex) Reason for call Service provided Helpfulness of nurse advice Reason why advice was helpful Action taken as a result of the advice. 	<ul style="list-style-type: none"> Most callers (80%) were women (median age 35). Most (95%) reported calling the service for advice. 95% of respondents found the service very or quite helpful 97% acted on the advice given. The most common reason given for finding the advice helpful was that it was reassuring. Reassurance is an important aspect on nursing practice.
Serafino, R (2000) <i>Do's and Don'ts for Call Centers.</i>	Rules for improving call centre performance (efficiency, customer satisfaction).	Descriptive (corporate)			<ul style="list-style-type: none"> Maintain superior staff (hiring, ongoing training, communication) Measure quality performance Invest in technology Focus on customer 	

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Slevin, ML et al. (1988) <i>BACUP - the first two years: evaluation of a national cancer information service.</i>	British Association of Cancer United Patients (BACUP) - national cancer information service (telephone and written) staffed by oncology nurses.	Evaluative - nature of calls received and caller details, user satisfaction and outcome (emotional) of the call.	<ul style="list-style-type: none"> Based on the first 30,000 inquiries. Call record form completed for each inquiry - relates to the demographics of the caller and nature of call. User survey sent to first time users who received mailed information - collects information on reasons for calling, how easy/difficult it was to speak with the nurse, feelings about contacting the service, and whether action was taken as a result of the call. 	~30,000 call record forms 2,827 user surveys (47% response rate)	<ul style="list-style-type: none"> Caller demographics (age, gender, target group, SES, ethnicity, location) Type of cancer Understandable information Service utility Emotional impact (mood) Action taken as a result of the service 	<ul style="list-style-type: none"> Callers were generally white, middle class, female (80%), aged 30-49 inquiring about breast cancer. Relatives and friends represented 39% of callers, followed by patients (32%), health professionals (10%) and the general public (5%). 95% found the information easy or very easy to understand. 89% of respondents described the service as useful or very useful. The service had a positive affect on mood, particularly for those who phoned in. Most common actions taken were to make a doctor's appointment or contact a support group/service. People require information in two key areas: medical and support services.
Venn, MJ et al. (1996) <i>The experience and impact of contacting a cancer information service.</i>	British Association of Cancer United Patients (BACUP) - national cancer information service staffed by oncology nurses.	Evaluative - callers' perceptions of information, nurses' communication skills, emotional impact of call, and overall satisfaction.	<ul style="list-style-type: none"> Callers over a 10-day period asked to participate, from this a random adjusted sample was selected (breast cancer inquiries were deliberately under-sampled to include sufficient number of other cases). Questionnaire was mailed and one reminder sent. 16-page questionnaire collected information on access, reason for calling, perceived quality of information, communication skills of the nurse, impact of the call, and overall satisfaction. Comparative analysis conducted with patients' and relatives/friends' predictors on impact and satisfaction. 	282 (69% response rate)	<ul style="list-style-type: none"> Caller demographics (target group, age, gender, SES) Information (complexity, understandable, relevance) Nurses' communication skills (perceptive, understanding, sympathetic, listened, clear knowledgeable) Emotional Impact Satisfaction (access, relevance, information, advice, communication skills, overall service) Information tailored for patients vs. 	<ul style="list-style-type: none"> 62% of callers were family and friends, 36% were patients. 80% of callers were women. 53% of callers were 30-49 years of age. 78% of callers represented the middle-class. 90% of callers evaluated the information they received and the nurse's communication skills positively. They reported that calls had a positive emotional impact (3.8/5) and they were satisfied with the service (4.5/5). Emotional impact was predicted by quality of information for patients and nurse's communication skills for friends/relatives. Overall satisfaction was predicted by communication skills for patients and both measures for family/friends. The needs of patients and relatives/friends are different - patients want information; relatives/friends want support.

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<p>Wahlberg & Wredling (2001) <i>Telephone advice nursing - callers' experiences</i></p>	<p>Medical call centre in Sweden staffed by nurses</p>	<p>Evaluative - caller satisfaction with service.</p>	<ul style="list-style-type: none"> • Recruitment - every 10th caller asked to participate over one week period. • Questionnaire (25-item) mailed out, followed by one written reminder. • Two quantitative questions related to caller satisfaction and included areas for open-ended responses. • Data explored for themes related to satisfaction/dissatisfaction and comments fell into two categories: practical and emotional aspects. 	<p>144 (71% response rate) 81 (56%) provided qualitative data</p>	<ul style="list-style-type: none"> • Caller demographics (gender, age, education) <p>Qualitative data received on:</p> <ul style="list-style-type: none"> • Access • Convenience • Nurse knowledge • Nurse behaviour • Emotional impact 	<ul style="list-style-type: none"> • Avg age of callers was 37; 78% were female. • 69% of responses described a satisfactory experience - unsatisfactory comments mostly concerned access problems. • Important aspects stressed by callers: nurses' communication skills, receiving appropriate advice, being treated kindly and in a supportive manner. • The selection, education and training of telephone nurses should place more emphasis on their supportive and communicative roles.
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