

Leeds Metropolitan University
Leeds Business School

Masters in European Public Relations (MARPE)

Communicating to illiterate populations

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STATEMENT OF ORIGINALITY AND AUTHENTICITY

This dissertation is an original and authentic piece of work by myself. I have fully acknowledged and referenced all material incorporated from secondary sources. It has not, in whole or in part, been presented elsewhere for assessment.

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ABSTRACT

This dissertation examines the communications problem of communicating to illiterate populations. It presents statistics on illiteracy, an explanation of illiteracy as a communications problem, applicable communications theory, a case study of an attempt to communicate to a largely illiterate public and an analysis of the case.

The statistics clearly show that illiteracy is a significant global issue. The challenge of communicating to illiterate people and the repercussions of an inability to communicate to them are demonstrated.

Theory on the sender-receiver relationship, the role of public relations practitioners as boundary-spanners, communications models, diffusion of innovations and specific communications campaigns theory is examined.

A communications campaign to recruit women aged 50 to 69 in the Canadian province of New Brunswick, a demographic that includes a large illiterate segment is detailed, including the development and execution of the campaign plan and some results.

The case is analysed using the theory. The analysis breaks down the elements of the case, analysing the planning and execution of the campaign.

The author concludes that the adoption of the two-way asymmetric model of communication would have been appropriate in the case for communicating to a public with an illiterate segment. He also concludes that the adoption of this model should be understood throughout an organisation so that public relations practitioners are involved in planning of such campaigns, for the adoption to work. He also concludes that communications efforts directed at populations that include illiterate segments must make reaching the illiterate segment the overriding priority and approaches should include outreach and targeting opinion leaders.

The author recommends further research be conducted on communicating to illiterate populations, the development of tools to reach such publics, the perception of public relations practitioners within organisations and the adoption of the two-way asymmetric model.

TABLE OF CONTENTS

1. Introduction
2. The problem of Illiteracy
3. The Communication Problem posed by illiteracy
4. Methodology
5. Communications Campaigns Theory
6. The Case
7. Case Analysis
8. Conclusion and Recommendations
9. Appendices
10. References
11. Bibliography
12. Research Brief

INTRODUCTION

The subject of this dissertation, as stated in the title, is communicating to illiterate populations. Simply put, the dissertation will examine the problem of how to effectively communicate to people who do not read and write. The problem will be examined by presenting the reality of illiteracy, the communication problems it poses, applicable theory, a study of an attempt to communicate to a largely illiterate public, the author's conclusion on the best means to solve this communications problem and recommendations for further research.

The author first came into contact with this issue during his work term that was required by the Masters in European Public Relations program. As described later, a significant percentage of the population of western industrialised countries can be considered illiterate. This means that many of the traditional tools of public relations, the ones that rely on the written word, such as press coverage, brochures, letters, posters and others, do not effectively reach that portion of the public.

The author of this dissertation believes that there are some organisations whose responsibility it is to communicate effectively to all members of society. An example of such an organisation is government. Many of the messages coming from governments contain information that is important for every citizen in its jurisdiction. Also, there are some messages that are important to only a select segment of the population, but that segment may also have a significant percentage of people who are illiterate. An example of this is the case presented in this dissertation. The target population had a high percentage of people who were illiterate, yet there was no attempt to reach this group.

In researching the topic of communicating to illiterate populations, the author uncovered very little that approached the topic. There are volumes of works on, and indeed much work has been done on, solving the problem of illiteracy. It begs the question, what about those who are not literate now? While work is being done to address the problem, how are the needs of those who are illiterate being addressed?

The author believes that the study of meeting the information needs of illiterate people is important particularly for those organisations that have the responsibility of communicating equally to all members of a population, such as governments.

THE PROBLEM OF ILLITERACY

To appreciate the importance of communicating to illiterate populations, the state of illiteracy should be understood. This chapter describes the international, Canadian and New Brunswick levels, and the level of illiteracy of the target population in the project described in the case presented in this dissertation.

An important definition must first be made here. The term "illiteracy" is not used by many in the field of literacy, as it is often used to describe a large group within which various literacy skill levels exist. However, for the purposes of this dissertation, the term will be used to describe those to whom it would be applied to by people outside the field of literacy. The 1994 International Adult Literacy Survey (IALS) of seven countries, the most comprehensive international study of literacy rates ever completed, used a scale of one to five. For the purposes of this dissertation, the first two levels of that scale will be termed "illiterate." These two levels are typified by people who have "serious difficulty dealing with printed materials" and those who "can only deal with material that is simple and clearly laid out" (Highlights, 1995).

The 1994 International Adult Literacy Survey, co-ordinated by the Organisation for Economic Co-operation and Development (OECD), was the first multi-country and multi-language assessment of adult literacy. The survey was conducted in eight industrialised countries: Canada, Ireland, Germany, the Netherlands, Poland, Sweden, Switzerland and the United States. It provides the most comprehensive view of the state of illiteracy ever (Literacy, Economy...1995).

The survey developed three categories of literacy to reflect that people in industrialised countries face many different types of written material and require different skills to understand and use the information. The three categories are prose literacy, document literacy and quantitative literacy. As mentioned above, a scale of one to five was applied in each category.

As written earlier, this dissertation will group the first two levels of the IALS scale into the "illiterate" group. According to the IALS, for Germany by example, this includes 48.6% of the population in the prose category, 41.7% of the population in the document category and 33.3% in the quantitative category. By contrast, Poland had 77.1 % total of its population in the first two levels of the prose category, 76.1% in the document category and 69.2% in the quantitative category.

The United States' levels were as follows: 46.6% in the prose category, 49.6 in the document category and 46.3% in the quantitative category. To repeat, for the purposes of this dissertation, these percentages reflect the percentage of the population the author terms "illiterate."

The results for Canada were as follows: 42.2% in the prose category, 42.9% in the document category and 33.3% in the quantitative category (Literacy, Economy...1995).

The report "IALS - A New Brunswick Snapshot" (1998) provides findings of the province alone as gathered in the IALS project. The report also says that reading practices in New Brunswick are typically weaker than in the rest of Canada, except at the highest level of literacy.

The combined findings of levels 1 and 2 for the province of New Brunswick are as follows: 59% in the prose category, 59% in the document category and 59% in the quantitative category.

Jean J.R. Pignal, one of the Canadian co-ordinators of the International Adult Literacy Survey, also the author of "IALS - A New Brunswick Snapshot", provided, at the author's request, specific statistics for the demographic of the case presented in this dissertation. These statistics about women in the province of New Brunswick aged 50-69, were gathered as part of the IALS.

The combined results for levels 1 and 2 for women in the province of New Brunswick aged 50-69 are as follows: 75.1 % in the document category, 69.7% in the prose category and 76.8% in the quantitative category. Mr. Pignal cautions that there are high levels of error associated with these statistics (1997).

There can be no doubting that internationally, in Canada, in the province of New Brunswick and in the target population of this dissertation's case, the level of illiteracy is significant.

These statistics provide the background for the exploration of the communications issue of communicating to illiterate populations.

THE COMMUNICATION PROBLEM POSED BY ILLITERACY

Statistics such as those taken from the International Adult Literacy Survey make the state of illiteracy clear. This section will offer some examples of the difficulty this poses for those who attempt to communicate to such audiences.

The problem was recognised in a professional marketing publication examining effective, means of reaching consumers, specifically whether direct mail is more effective than phone surveys (Inguanzo, 1997). In the article, its author argues that phone surveys are cheaper than mail outs, when judged on "completions", or response rates. One reason he cites is that those who respond to direct mail self-select. Another, "even more compelling" reason, in the author's words, "many of the people receiving the surveys can't read them."

The article's author cites a Journal of the American Medical Association study, "The Test of Functional Health Literacy in Adults", used to measure the ability to read and understand medical instructions and health care information administered to patients in urban public hospitals. The study found that of 2659 patients, 41.6% could not understand directions for taking medicine, 26% were unable to understand information regarding their next appointment, and 59.5% could not understand a consent document (Inguanzo, 1997).

He also points out that the numbers in the study were higher for the elderly: more than 80% of those over 60 could not understand directions written at a fourth-grade level for a specific procedure.

The author concludes that direct mail rules out too large a percentage of the population (those who cannot read it) to be effective, and indeed that the replies generated may themselves be suspect due to the large percentage of those who receive them being unable to understand properly and therefore properly respond (Inguanzo, 1997).

The problems of illiteracy may be most important when they affect health messages. As in the above case, it has been pointed out that basics such as instructions for taking medicine or information about appointments can be misunderstood by those with low level literacy skills.

As Ruth Parker, M.D., of the American university Emory in Atlanta, Georgia, says, "Health literacy is a very functional capability. It's really the body of knowledge and understanding people need in order to read, interpret and comprehend all material on bottles, slips, written and oral material and oral instructions and multiple forms of printed material" (Illiteracy may...1997, pg.4).

The American Robert Wood Johnson Foundation conducted a study on the issue of health literacy. Conducted by Ruth Parker, M.D. and Mark V. Williams, M.D., both of Emory University, along with David W. Baker, M.D., the study measured the ability of patients to perform health-related tasks that require reading and computational skills. Using the Test of Functional Health Literacy in Adults, a tool they developed, the researchers examined the impact of literacy skills on hospitalisation of 1008 patients at Grady Memorial Hospital in Atlanta, Georgia, over a period of 2 years. The researchers found a 52% increase in the risk of hospitalisation in patients with inadequate literacy compared with patients with adequate literacy (Marwick, 1997).

Within the American medical system, the study estimated that the increase in hospitalisation of illiterate persons alone could translate into excess hospital costs of U.S.\$8 billion to \$15 billion.

There are a number of important issues arising from the state of illiteracy. As demonstrated in the International Adult Literacy Survey, illiteracy is a global problem. Projections of the state of illiteracy show that although some progress is being made, illiteracy will continue to be a dramatic problem.

Michael F. Bloom, PhD., president of Bloom Forecasting, has developed scenarios for the world in 2020. Trends projection by the United States Bureau of the Census show that world illiteracy, in percentage terms, will decline, from 25.7% in 1990 to 18.9% in 2020. However, the world population will continue to expand strongly, increasing the number of illiterate people from 683 million in 1990 to 780 million in 2020.

This means that the information age 20 years on, will have 780 million people in it who cannot receive, use or create information, are unable to read how to improve farming methods, unable to read instructions to install an appliance, unable to read instructions on a medicine bottle or over-the-counter medication. Most importantly, this enormous group of people will be denied access to the critical tool of our time: the computer (Bloom, 1995).

This future shows starkly the importance of approaching illiteracy both with the intention of eradication and also with the intention of communicating effectively with those who do not read and write.

METHODOLOGY

This dissertation examines the issue of communicating to illiterate populations, which the author frames as a communications issue.

The research undertaken by the author for this dissertation was qualitative.

In the primary research of the case included in this dissertation, the author's research paradigm is naturalist, most closely following participant observation. The author was working on the case he was researching, so the relationship between researcher and subject was close. However, enough distance was maintained to provide the author a researcher's role. While the paradigm was naturalist, the research methods, observation and interviewing, centre on a case study. This approach follows what Stake (1994) calls an intrinsic case study, as the case is studied for its intrinsic value, not because it is representative of anything. Within the paradigm of participant observation there were different roles and those are described below (Price, 1996).

The author viewed the case as an interesting communications exercise - an attempt to communicate to a largely illiterate audience, and sought to record it so that he could analyse the attempt.

Secondary research was conducted in the form of a literature review of applicable theory and case information. The author designed the research approach to provide context to the case and to the importance of the issue it raises, communicating with illiterate populations.

Communications theory was researched to guide the analysis of the case. It is important to note that communications theory was the theoretical focus, as the issue was approached as a communications issue.

Comparative studies that approached the topic in the same manner were sought, but no directly comparable studies were found.

The aim of the primary research was to examine and record, as an "informed" interviewer, interviewer and participant observer, the case of the attempt by the Department of Health of the province of New Brunswick in Canada to communicate to an illiterate population. During the process of examination the author's role shifted from participant observer, an employee of the department working on the examined case, to an informed interviewer once he had left the employ of the department. At such times when the author was an employee of the department and a participant observer, those with whom he had contact were not aware that anything was being recorded or observed for any other purposes than those of their employment. Indeed, the only information that was recorded was that required for the purpose of the author's employment. This research forms the primary research of this dissertation.

The actors within the case were as follows: the author and Gerald Weseen, Director of Communications at the New Brunswick Department of Health and Community Services (DHCS), were members of the DHCS department of communications. Stephanie Smith was the first member of the department of policy and planning who held responsibility for the planning and implementation of the Breast Cancer Screening program within the DHCS. She was later replaced by Chris Heissner. Diane Novaczek and Kathy Henderson were the field personnel responsible for the program's implementation in Health Region 2. Sylvana Bosca was responsible for the implementation of the program in Health Region 6.

The author acknowledges a bias towards the importance of developing communications programs that take into consideration the illiterate populations contained in the target audience of such a program. It is important to note that at the beginning of the author's involvement in the case featured in the primary research, the author did not have such a bias. His observations of the development of the case led him to this bias. The author does not believe that the bias that he developed led him to inaccurately record the facts of the case.

The following research methods were used to investigate the objectives of this dissertation.

The primary research was conducted through interviews, conversations and meetings. Primary data source research was conducted through gathering materials from the author's workplace (which became his former workplace during the course of the research) and from related workplaces. Observational research was conducted during the time of the author's employment at the DHCS, from October to December 1994. The author conducted interviews with field personnel in 1996 and 1997 to provide information on some results of the program. Interviews were conducted with Mr. Weseen in 1994 and 1995 and Mr. Heissner in 1997 to provide more information about the design and implementation of the communications effort.

Secondary research took the form of topic searches on data bases and computer networks and academic texts. The New Brunswick Statistics Agency and the Canadian federal government body Statistics Canada provided statistics.

Primary research:

Personal communication forms an important part of the research. This takes a number of forms. Firstly, personal contacts with personnel that were part of the author carrying out his duties in his work term. The role of the author in these personal contacts was that of participant observer and the author did not initiate or undertake in any way to act beyond his duties as an employee.

Personal contact with personnel with whom the author worked during his work term was recorded so that the paper reflects the development process of the communication attempt. As an actor within the process, the author communicated with other actors as the communications effort developed. This communication took place formally in the form of memos and as discussion in meetings, which the author recorded in notes. Again, the author's role here was that of participant observer.

As stated earlier, the author also conducted formal interviews with some of the personnel with whom he interacted carrying out his duties. Six separate interviews were conducted with the communications director of the DHCS and with the co-ordinator of the project, a role filled by two different people during the course of research. These were done to more fully reveal motives behind actions. The author's role during these contacts was as an informed interviewer. Interviewees were informed at the outset that information from these contacts would not be given to the department, their employer, as the interview was being conducted as part of an academic study. This approach resulted in actors being more forthcoming than perhaps they might have been in other circumstances.

Personal communication is also included as advice received from the New Brunswick Statistics Agency. In the initial research of the illiteracy statistics for the target demographic, the author was guided by personal communication with staff of the agency. The author's personal communication here was done in his role as an employee of the government, as a participant observer.

Other interviews were also conducted with field personnel who did not play a role in developing the communication program, but were charged with the responsibility of implementing the whole program, including communications activities. These interviews, three in total, were conducted with senior administrators at the hospital level. These were done to discover how the communications effort was actually carried out as opposed to how it was prescribed.

These interviews, also framed as part of an academic process, were very helpful in revealing the difficulties encountered at the field level and were, in the author's opinion, much more effective than other possible means, such as letter exchanges or the gathering of official reports and feedback. These interviews provided the opportunity for follow-up questions and for building personal trust with the interviewees, therefore allowing them to be more candid. The interviewees were once again informed that the content of these sessions would not be passed on to the department. The author here is once again an informed interviewer, with this known to both sides.

Interviews were also held with other health professionals who face the problem of communicating with illiterate populations. There were three such interviews, with a community physician, a public health researcher and writer and with a community health centre administrator. These interviews were particularly helpful in the author's formulation of a thesis, especially in the face of the lack of academic research on the topic of this dissertation that was uncovered by the author's secondary research. The author's role here was strictly that of an interviewer.

Primary data source research:

Many documents are primary data source material as they were gathered from the personnel who created them (including the author) or were used in the author's carrying out of his duties during the work term on which this paper is based. These came from the author's workplace, the New Brunswick Department of Health and Community Services and related workplaces, such as hospitals.

Other documents, such as the "Breast Cancer Screening Services in New Brunswick: Policy and Standards" ([Appendix A](#)), the Breast Cancer Screening brochure ([Appendix C](#)) and examples of letters of invitation from the regional hospital corporations ([Appendix D](#)) were gathered as the tangible output of the communications campaign.

Statistical results from the program as given to the author by field workers implementing the program, may also be considered primary data source research. The statistics, which can be viewed as the response rate to the attempt to communicate, were gathered by field workers and then passed on to the author. These statistics are very important in that they show how many members of the target group were successfully recruited through the communication attempt.

Difficulties in obtaining research were faced on various fronts. The author at times needed to work to convince actors within the Department and at regional health corporations that although he was at times an employee of the Department, his research was for something outside his employment and would not be reported to others in the Department or the health corporations. The author feels, however, that he was successful in making this case, and his interviews and contact with those involved in developing and implementing the communications effort in the case were candid and valid.

Secondary research:

Research into applicable theory was conducted through academic text searches. Secondary research also took the form of topic searches of journals and popular media through business and health CD-ROM directories, the Lexus-Nexus commercial and academic network and Internet searches. All secondary research was conducted at the University of New Brunswick in Fredericton, New Brunswick, Canada, and Leeds Metropolitan University in Leeds, United Kingdom.

As the bibliography reflects, the author found very little in the way of academic study of the communications problem of communicating to illiterate populations. Therefore, materials used by, and interviews with those facing the problem directly such as those in the New Brunswick Department of Health and Community Services and regional health corporations and those working in community centres provided most of the insight gained in the research of this communications problem.

Despite the dearth of study of the specific topic in an academic way, there is theory that applies. The author was able to apply communications theory, found through secondary research, to his topic. The theory includes models that can be applied to the task of communicating to illiterate audiences and theory on communications campaigns.

Statistics on the target demographic of the case were provided by the New Brunswick Statistics Agency and Statistics Canada.

There is no specific statistical information available on the literacy level of the target demographic of the case presented. Some conclusions can be drawn from existing studies, and the author was provided with the best information available on the demographic from the author of the most recent, most comprehensive study. This information, however, is, in the words of Statistics Canada, "unreliable and most likely invalid."

COMMUNICATIONS CAMPAIGNS THEORY

In considering the communications challenge of effectively reaching an illiterate population, there is applicable communications theory. This chapter presents some communications principles, describes models that can be used to guide efforts to communicate to an illiterate audience and provides context for public communication campaigns. This theory will be applied to the analysis of the case, which follows this chapter.

It is one of the most important aspects of planned communications that planners should know as much about the target audience as possible before deciding on how to most effectively communicate to that audience. This can be couched in theoretical terms as "feedforward". Hornik (1988) sees the need for this to be considered in Third World agricultural development work, where government workers often do not consider the needs of farmers.

Another important principle is the sender-receiver relationship. In the area of communicating to illiterate populations, two specifics should be considered. First, the gap between sender and receiver. Windahl et al. (1997:22) in describing the gap, state that "the chances for successful communication usually decrease as the gap (social, cultural, etc.) between sender and receiver widens."

Second, the receiver's perception of the sender/receiver relationship has an impact when communicating with illiterate populations. It has been suggested that the receiver's perception of the relationship between sender and receiver and the receiver's expectations of the relationship can be a factor in the effectiveness of the communication (Reardon, 1987). The more open a receiver is to a message the more effective the communication will be. If a receiver has trust in the relationship through which the communication takes place, that receiver is more likely to be open to the message received.

Consideration of these opening factors could lead the planner to decide on a number of different options to reach the target audience. It is the author's contention that the decision on which means to use to reach an audience should be led by information about that audience. Although it is costly to consider every characteristic of a target audience, no plan should be conceived without first understanding the basic make up of the group. It follows from this that the planning stage should begin with all options open. As Windahl et al. state, "rarely is there any excuse for falling back on routine solutions without first considering alternatives" (1997: 17).

The role of public relations practitioners within organisations is also important. Crucially, if the public relations staff is regarded as having responsibility for understanding publics, and is given the task of ensuring that they are informed about audiences, then consideration of the characteristics of the audience will be given. This two-way communication perspective sees the role of public relations practitioners as boundary-spanners (Grunig and Hunt, 1984). This has practitioners "spanning the boundaries" of the organisation and the publics with which it communicates. It fits the definition of public relations as being the management of communications between an organisation and its publics and between the publics and the organisation.

One could go so far as to say practitioners using this approach have "one foot in the organisation and one foot outside" (Grunig and Hunt, 1984:9).

Following on, if this role is recognised within an organisation, it will lead to this consideration in the planning process. "The planners must balance what they need to communicate to the organisation's environment with attention to the information coming from the environment" (Windahl et al., 1997:87).

This positioning of the public relations function is important, as it must permit the effective straddling of the boundaries while keeping the trust of the organisation and the audience, according to Grunig and Hunt (1984). The author feels that for most practitioners, keeping the trust of the organisation is most important, as the idea of keeping the trust of the audience presupposes more contact with that audience than most practitioners probably have. As well, current thinking is that the ideal position for the practitioner must be near the top of the relevant organisation or organisational unit so that the necessary flexibility is provided (Grunig and Hunt, 1984).

Models

The author believes that the model that best describes this balance is the two-way asymmetric. This model, while maintaining that communication attempts to persuade and influence an organisation's publics, also accounts for feedback from those publics. As one can ascertain from the title of the model, however, the amount of information flowing to the publics and back from the publics is not equal, it is asymmetric, with more flowing from the organisation than back to it. Additionally, the perceived weight or importance of the information is biased in favour of the organisation.

The author does not believe the model that is sometimes seen as the next step, the two-way symmetric model, is applicable to this case. The goal of the two-way symmetric model is to have equal amounts of information, with equal significance, flowing between the organisation and its publics, eliminating the roles of sender-receiver and creating a mutual understanding (Grunig and Hunt, 1984). Although it might be said that the two-way symmetric model would be embraced by organisations at some stage, it is not the modern reality of public relations practice.

The diffusion of innovations concept is very important to communications planning. Communication planning often centres on promoting an innovation such as a new product or ways to live more healthily. The desired outcome of the communication planning is for the target of the communication to do something, adopt the innovation.

The adoption process described by E.M. Rogers (1983 and 1987) is the series of stages, in order of occurrence, taken to get to adoption. The stages are knowledge, persuasion, decision, implementation and confirmation.

Firstly, the knowledge stage. Acquisition of knowledge happens when a person is exposed to the innovation and what the innovation does. The receiver of the information is either passive or active. Active seekers are searching for a solution to a problem, while passive receivers may come across information when not looking for it. Reaching the passive group should be done by using channels where such people normally look for other types of information (Windahl et al., 1997).

Rogers (1987) points out that a common mistake here and indeed in all the phases of the diffusion process is the failure of planners from one culture to account for factors that are inherent in the culture of the potential adopters.

Secondly, the persuasion stage. Here people decide what they think, positively or negatively about an innovation.

Thirdly, the decision stage. Here, the innovation is either adopted or rejected.

Fourthly, the implementation stage. Here, people begin to use the innovation.

Lastly, the confirmation stage. Here, positive post-adoption information from the organisation encourages the adoption of the new innovation, confirming the choice. Negative post-adoption information, usually from other sources, can result in the innovation being abandoned.

Throughout this adoption process, each stage has one or more preferred channels of communication. Generally, mass media is considered most effective in the first stages, while interpersonal channels are better at later stages (Windahl et al, 1997).

The adoption process as laid out in this format does not necessarily mean that each receiver of information moves through each stage in sequence. Indeed some eventual adopters may only adopt later in the process than others. For example, after an attempt at official dissemination of information occurs, word of mouth may reach later adopters who quickly move to adopt.

Additionally, the choice of channel should be led by information about the audience.

"Many planners have stories about situations where an employer says 'Look we have a problem here. Let's come up with a brochure and send it to all households in the community.' The audience has been defined - prematurely - as 'brochure readers,' making the chances of reaching the relevant audience marginal at best. Obviously, this is beginning communication planning at the wrong end. The 'whom-to-reach' question should precede the 'what-channel' question" (Windahl et al, 1997:169).

Chaffee (1986) points out that later adopters may rely more on interpersonally transmitted information, which could be due to a lack of resources, such as money, education and literacy. These are people who typically do not use the media, the first option of disseminating information for many organisations, so they develop awareness later in the adoption process. It must be noted that interpersonal communication is not necessarily the preferred medium of receiving information for this group, only that structural constraints make this form of information acquisition more practical for this group.

Also, types of media are effective at different stages. For example, television, although useful in creating interest or transmitting emotional content, is not seen to be useful to disseminate facts (Atkin, 1981).

The conventional wisdom is that mass media is generally thought of as being useful for information dissemination and interpersonal communication is best for influencing decision making and behaviour change. Of course this should be tempered by the realities of campaign situations. In other words, if field workers cannot feasibly communicate directly to each member of the target audience, the media that is available must be used in such a manner as to promote decision making (Hornik, 1989).

Rogers (1987) has applied his diffusion of innovations concept to the promotion of preventive behaviour. Here, the innovation is one that, if adopted, could prevent something negative from happening to the adopter. These innovations are characterised by being something that is delayed in time and being something that can be difficult to assess because even if they are not adopted, harm might never occur.

Some key codas emerge from the application of the diffusion of innovations to preventive innovations:

- Interpersonal communication through peer networks is of particular importance
- The perceived credibility of the source of communication partly determines the success of that communication

There is no one theory of communication campaigns. There have been attempts to synthesise findings to offer a basic construct.

Four basic elements of communication campaigns can be said to be the following:

- the campaign is purposive - specific results are intended
- the campaign is aimed at a large audience
- the campaign occurs during a given time period
- the campaign involves a planned set of communication activities

(Rogers and Storey, 1987)

There are a number of factors that need to be considered in order to conduct a successful communications campaign. Windahl et al (1997), drawing on Rice and Atkin (1989) and Rogers and Story (1987) summarise these factors into the following seven:

1. The role of the mass media. Initial awareness and knowledge can be created by mass media.
2. The role of interpersonal communication. Interpersonal communication, especially through peer groups and social networks, is instrumental for behaviour change and the maintenance of the change.

3. Characteristics of source or medium. Credibility of the source can influence the outcome of the campaign.
4. Formative evaluation. The campaign message must be tested against the viability of it in reality. The means to achieve the message being promoted must exist.
5. Campaign appeals. Campaigns must be specific to individuals in order to appeal to their values and have the desired effect.
6. Preventive behaviour. Long-term prevention goals are difficult to achieve because the rewards are delayed and are not certain.
7. Timeliness, compatibility and accessibility. The message of a campaign must be timely and culturally acceptable and the channels used must be available to the target audience.

Rice and Atkin (1989) offer this footnote: Campaigns must set reasonable goals. Often, public communication campaigns set higher standards for success than the most successful of commercial campaigns.

Theoretical codas

Society may well consider that everyone should have the same opportunity to be healthy. If some portions of the population have better access to health information because of having more resources, they will be healthier (Windahl et al 1997).

Rogers (1983) suggests that the adoption of an innovation usually widens the socio-economic gap between earlier and later adopters. Rogers suggests three strategies for narrowing the gaps.

1. When the resourceful have greater access to information:
 - make the information appropriate and interesting to the lower socio-economic status portion of the audience, even if it becomes less interesting to the higher socio-economic status portion
 - use communication channels that target the underprivileged
 - form small groups of the resource-poor to discuss the innovation
 - concentrate the efforts of those carrying out the communication on late adopters
2. When the privileged have greater access to information from peers than do the underprivileged:
 - identify the opinion leaders of the lower socio-economic status portion of the target audience and feed them information
3. When the privileged have more slack resources available for complying with the message to innovate than do the underprivileged:
 - recommend innovations and behaviours that are appropriate to the lower socio-economic status portion of the target audience
 - invite the lower socio-economic portion to take part in the planning of the program

In conclusion, the principles that open this chapter can be and should be applied to most public relations efforts. They are not only specifically instructive to the case presented in this dissertation, but to many cases.

Additionally, the two-way asymmetric model lends itself to this case particularly in how it informs the boundary-spanning function of public relations practitioners. The model illustrates how the management of communication between the publics and the organisation can be organised. Within the case this points the way to how the public relations function should be perceived as crucial to developing communications strategies of the DHCS because the function must by definition play the role of understanding the publics.

Diffusion of innovations theory applies directly to the case presented in this dissertation in an important way. Breast cancer screening is an innovation to the target audience in that the policy was developed by the department to reach a specific group that had the best chance of early cancer detection and to offer the service for the first time in a centralised fashion to all within that group.

However, the direct application of the theory falls short in this particular case. This is due to the target audience's high rate of illiteracy. Those that miss out on the information due to their lack of understanding of the method of communication cannot go through the stages of diffusion. The first stage of the theory is the knowledge stage. Right at that stage the group that is the focus of this dissertation, those whose level of literacy is not high enough to handle the communication, fall to the side.

It is the synthesis by Windahl et al (1997) of the factors of a successful communications campaign as described by Rice and Aitkin (1989) and Rogers and Story (1987) that is most applicable. Application of these factors directly guides the examination of the case and permits insight into the challenges of the planners, the areas where the planners planned well and perhaps where the planning fell short.

Additionally, the theoretical codas described at the conclusion of this chapter offer guidance to those attempting to meet the challenge of the problem examined in this work: communicating to illiterate populations.

THE CASE

The following is a chronological description of the central case of this dissertation, that of the attempt by the Department of Health and Community Services (DHCS) of the province of New Brunswick, Canada, to communicate with a largely illiterate audience.

The objective of the description of this case is to provide a focus for this dissertation, illuminating the dissertation's subject, communicating to illiterate populations, through an example. The analysis of the case, which follows, provides a context for the application of theory to an attempt to communicate to an illiterate population.

The case is presented in four segments: background, program planning, communications involvement in program planning and some program results.

Background

The author worked on the project described here during his practical experience work term for the Masters in European Public Relations program. This section includes a description of the author's involvement in the project and concentrates on the parts of the case that relate specifically to the subject under study in this dissertation, communicating to illiterate populations.

In autumn 1994, the author was working in the communications department of the New Brunswick Department of Health and Community Services in the Canadian province of New Brunswick. One of the author's tasks was to help co-ordinate the communications campaign for a new program, breast cancer screenings for women aged 50-69 in the province who were "asymptomatic", that is, not previously diagnosed as having symptoms of breast cancer.

The Breast Cancer Screening program was a result of a policy on breast cancer screening developed by the DHCS to build on a report by the New Brunswick Breast Cancer Screening Committee and the restructuring of the hospital system into seven separate hospital corporations (Appendix E). Also considered was the breast cancer incidence and mortality rates and evidence supporting the effectiveness of breast cancer screening for women 50 to 69 years of age (Standards for Breast Cancer Screening Services, 1994:i).

Program Planning

The communications campaign for the program was already established when the communications department of DHCS was given the task. It was published by the Department shortly after the beginning of the author's involvement, in the "Breast Cancer Screening Services in New Brunswick: Policy and Standards" ([Appendix A](#)). The main thrust of the campaign was to recruit the target group, women aged 50-69 in New Brunswick, to take part in the program, that is, to have a quality breast cancer screening once every two years.

It should be noted that in the province of New Brunswick, the seven separate hospital corporations, as directed and informed by the Department, deliver hospital services such as this. Therefore, the "Standards" publication is used to direct each corporation to carry out tasks using the same standards as other corporations. Each corporation may make its own judgements about how to carry out some specific tasks.

Under "Recruitment" in the "Standards" document, personal letters of invitation and physician referral were described as the "most effective ways to recruit women to breast cancer screening services" (Standards, 1994:2). The references for these recommendations were studies of recruitment for similar services. The recommendation of personal letters was supported by a cited reference for a year-end report of a similar service in another jurisdiction, as well as a publication that examined impediments to screening recruitment as found in a study of breast cancer screening.

The recruitment section also listed other means of communication such as recommendation/referral by family physicians, endorsement and promotion by women's groups and community organisations, group presentations and the media.

Finally, the recruitment section set a goal of a 70% participation rate of the target group once every two years (Breast Cancer..., 1994).

The next section of the "Standards" publication was titled "Promotion of Breast Cancer Screening Services."

In the promotion section the "Standards" document states, "The Department of Health and Community Services shall implement general provincial efforts to promote breast cancer screening services, including the development of a standard brochure aimed at encouraging participation of the target group and the mailing of introductory explanatory letters to health professionals and provincial associations/organisations requesting their support" (Breast Cancer...1994:3).

The "Standards" document also states, "Region Health Corporations should promote breast cancer screening services through regional and local initiatives directed at health professionals and the target women" (Breast Cancer...1994:3).

The promotion section listed other means of promotion to the target group: information and educational sessions to be offered to local women's groups, media notices, educational materials at screening sites, sending the standard brochure with a letter of invitation to all members of the target group, making the standard brochure available in appropriate locations, posters in appropriate locations, and "other local communication channels." No references were cited for any of these recommendations (Breast Cancer..., 1994).

Communications involvement in program planning

The author first became involved in the communication project in October 1994. As mentioned earlier, the means of communication, as laid out in the Standards document, were set. This included what would be the first information most of the target audience would view: a letter of invitation from the local hospital corporation to make an appointment for a breast cancer screening examination. The letter, containing 319 words in eight-point print, is included in the Standards publication ([Appendix A: Appendix D](#)).

Upon viewing the means of communication in the Standards document and seeing the letter, the author researched the literacy level of the target population. Solid, reliable data about the literacy levels of the target group, 50-69 year old women in New Brunswick, was unavailable in October 1994, and is currently unavailable. However, if one accepts the data available at the time, the 1990 Literacy Skills Used in Daily Activities (LSUDA) survey information, and factors in reliable trends, a fairly reliable assumption about the group can be achieved.

The LSUDA study reflected an almost 40% illiteracy rate in Canada (Highlights...1995). Generally, the aged of the population have a lower level of education and a lower level of literacy. So, one can make the assumption that the level of illiteracy of the target group was over 40%. Staff at the New Brunswick Statistics Agency told the author, in his role as participant observer, that the illiteracy rate of the 50-69 year old women group was almost certainly over 50% and probably much higher (New Brunswick Statistics Agency, 1994).

Upon the discovery that the majority of the population would almost certainly not be able to understand the letter of invitation, the author, as a participant observer, communicated this to the project co-ordinator at the Department, Stephanie Smith. Ms. Smith was responsible for the central, departmental co-ordination of this program and a number of other programs. Additionally she was responsible for advising on health policy in the DHCS. Ms. Smith understood the problem, but explained that the letter was a result of input from many different sources, and was only a suggestion. This is a recollection by the author.

This intervention by the author was the first contact by any of the six DHCS communications personnel at any stage in this breast cancer screening project.

The major activity of the communications department was to assist in the designing and copy writing for the brochure, despite the general perception internally that the communications department and in particular its director, was strong. The author was the first communications staff member to draft copy. The author, with the recognition of the high level of illiteracy in the target audience, put forward the idea that the brochure's copy should be minimal, with short, simple words. Ms. Smith wanted more detail and suggested the copy be written at a primary school grade six readability level, the author recalls. The author advocated a much higher level of readability and the discussion soon took the form of memos, suggested copy and many series' of revisions.

Throughout this correspondence ([Appendix B](#)) there are mentions that attention should be given to make the brochure readable by those of lower literacy levels. The development process for the brochure began in October 1994 and continued after the author left his position in the Department in December 1994, ending in June 1995.

The author's initial draft was sparse. Ms. Smith recommended much more information be added to the text. Subsequent drafts were distributed among a variety of people in the department, with occasional mentions of "readability". The attention that was paid to the literacy issue focused on attempting to make ideas clear using simple language ([Appendix B](#)).

The breast cancer screening program took a long period to begin. The author monitored the program for the next three years, gathering information for this dissertation.

It was concluded by the Department that the suggestion to the seven Hospital Corporations would be to send out the fore-mentioned letters of invitation along with the brochure. The attention to readability was not reflected in the suggested letter. Despite the author's lobbying for a far simpler letter, it was unchanged as recommended to the corporations.

Some program results

The author chose two of the seven Hospital Corporations, one in the predominantly French, northern region of the province and one in the predominantly English southern region of the province, as representative groups of the project. The author, acting as an informed interviewer, held two update sessions with the Region 2 corporation in the southern region - April 24, 1996, and November 28, 1997. One session was held with the Region 6 corporation in the northern region, on December 1, 1997.

At the first meeting in Region 2 on April 27, 1996, Kathy Henderson and Diane Novaczek, program co-ordinators for Region 2, said that they judged that 40% of the target in that region had responded to an invitation. The invitation program had begun the previous August. The author was provided with a copy of the Region 2 version of the letter of invitation. It mimicked the suggested letter from the Standards publication. When the author informed the staff that this letter ([Appendix D](#)) was probably unreadable by a large portion of their target audience, the staff responded that they were not aware of that possibility (1996).

At the second meeting, November 28, 1997, Kathy Henderson indicated that the estimation was that 55% of members of the target group had been screened. It was indicated to the author that the initial recruitment effort of sending a letter of invitation had not caused the desired response and during the interim between the two meetings, a number of other efforts had been undertaken. These efforts included information sessions with family physicians, outreach to community groups that included members of the target audience and revising the letter of invitation, following the author's comments at the previous meeting, to a more readable level ([Appendix D](#)). Mrs. Henderson attributed the increase in responses to the outreach efforts. It should be noted here that the author is aware that in commenting on the content of the letter and the subsequent action of the Region 2 staff, his role was that of participant observer (1997).

The author interviewed Sylvana Bosca, co-ordinator of the program for Region 6, on December 1, 1997. Region 6 corporation's program began on November 1, 1995. As of October 31, 1997, 36% of the target audience had responded. Region 6 had also undertaken a number of efforts to supplement the letter of invitation mailings, including public forums on women's health issues, meetings with family physicians and announcements on community television (1997).

On September 29, 1997, the author, acting as an informed interviewer, spoke with Chris Heissner, who replaced Stephanie Smith as Department staff person with responsibility for the program. He characterised the response rate to the program overall as "low." He said that planning was underway to redouble communication efforts and to potentially adopt some of the outreach techniques seen in the regions on a province-wide basis to recruit those from whom no response to the letter of invitation had been received (1997).

CASE ANALYSIS

This chapter will present an analysis of the case of the Department of Health and Community Services (DHCS) in New Brunswick, Canada attempting to communicate with a largely illiterate audience. The analysis will include application of the theory outlined earlier.

The message that the DHCS attempted to communicate was that the receiver, women aged 50-69 in New Brunswick, should make an appointment for a breast cancer screening test. This could be done by the receiver calling a cancer screening centre directly.

A critical step towards the communication of the message, planning the campaign, was conducted and completed without any input from the communications staff of the DHCS, as shown in the case.

Application of the principles

It follows to examine the methods chosen by the non-communications personnel to disseminate the message.

The letter of invitation, to be sent to the members of the target audience, was chosen as one of the "most effective ways to recruit women to breast cancer screening services" (Standards for Breast Cancer Screening Services, 1994). This direction comes from a cited source of an example of where this tool had been used before. As outlined in the theory chapter, it is a fundamental in deciding the tools to use in communicating that the sender should know as much as possible about the receiver. Windahl et al. (1997) see ignoring this as making a predetermined decision about the target audience, saying the "whom-to-reach question" should precede the "what-channel" question.

The sender-receiver relationship comes into play here. It has been stated that the receiver's perception of the relationship between receiver and sender, and the receiver's expectations of that relationship, are factors in the effectiveness of the reception of the message. The more open a receiver is to a message, the more effective the communication will be (Reardon, 1987).

So, in planning the means to reach the audience in the case, the first question asked by the planners of themselves should have been "Who is our audience, what defines its members?", followed by "What do they expect of us?" If these questions had been asked at the outset, the literacy rate of the target group would have been uncovered, with the most likely reaction being to choose a tool other than one that requires reading. Also, an examination of the perception of the receiver of the sender-receiver relationship could have led to much helpful information. One could see the conclusion being that the information normally received by the audience from this particular sender, the local hospital corporation, was negative, or off-putting, and that indeed it necessitated the changing of the sender itself to nurses, community leaders or others.

However, these two key questions were not asked, and the decision about the tools chosen to communicate to the audience was not guided by such information.

Along with a letter of invitation, physician referral was also encouraged. It was recommended in the Standards document that information be sent to health professionals to introduce the program and that they be kept informed through education sessions, brochures and journal articles and newsletters.

Other tools were also set out in the Standards document. These were information and education sessions for women's groups, media notices, educational material at screening sites, posters, and "other local communication channels." Finally, it recommended the development of one standard brochure, for inclusion in the first contact with the letter of invitation and distribution in appropriate locations.

None of the recommendations reflect market research of the target audience or communications theory. Gerald Weseen, the Director of Communications, holds that governments habitually choose brochures as the main vehicle for information dissemination (1995).

It appears that the tools chosen for this communication campaign were standard solutions - particularly two of the main tools, the letter of invitation, adopted from another similar campaign, and the standard brochure. Windahl et al. (1997) state that "rarely is there any excuse for falling back on routine solutions without first considering alternatives." If decisions about which tools to use in this case were guided by information about the group, it follows that the process of deciding which tools to use would begin with all options open, including, as stated earlier, changing the sender.

The role of communications

The point at which communications personnel - the staff tasked with the communications efforts of the DHCS - came in contact with this project is crucial. When the author first came in contact with the project, the first member of the communications personnel to do so, his first response was to do the elementary, that is, find out more about the target audience. Although this led the author to believing that the principal means of communicating, the invitation letter, was inappropriate, it was too late in the process to effectively influence the development of the communications campaign.

The responsibility for understanding an organisation's publics usually resides with communications or public relations staff (apart from those with dedicated research or polling staff), but this is only the first step. As stated in the theory chapter, this two-way communication perspective sees the role of public relations practitioners as boundary-spanners (Grunig and Hunt, 1984). That is, practitioners span the boundaries of the organisation and publics.

The second step is the internal recognition that it is the task of communications staff to be aware of the characteristics of target audiences or to undertake research in the event of a segmented "new public" being created.

If this role is understood within the organisation, it will lead to the inclusion of communications practitioners in the planning process. "The planners must balance what they need to communicate to the organisation's environment with attention to the information coming from the environment" (Windahl et al., 1997:87).

Grunig and Hunt (1984) also point out that the ideal position for the public relations function is near the top of the organisation. This position helps provide the flexibility required to keep the trust of the organisation and the external audiences. It follows that such a position would also allow internal publics to understand the importance of the function and to include it in planning. It must be pointed out that communications at the DHCS was a staff function reporting directly to the top, the minister. However, as has been stated above, the communications function was not considered at the early planning stage of the case, when it could have made an important difference.

The author believes that it is the perception of the communications or public relations function internally that has made the difference here. This might be linked to the political function of the minister and the role of the communications staff in aiding the minister in that role. Often difficult policy decisions are made in a department of health and then must be made palatable to the public. The head of communications, Mr. Weseen, was perceived at being good at this function. This may have led department personnel to believe the function of communications staff was to be given something after decisions are made and asked to "sell" or "spin" the policy. This leads to the situation of the case where all decisions of policy and indeed the communications planning itself was complete before the communications staff were asked to be involved.

As stated in the theory chapter, the two-way asymmetric model is believed by the author to be the model which would work best in the situation described in this case. This model acknowledges that the amount of information coming from the organisation is larger and more significant than the amount of information received from the publics and that the power in the relationship rests with the organisation. It also acknowledges that the information coming from an organisation is designed to persuade. Indeed, the investigation of a public is undertaken in the two-way asymmetric model to enable efficient persuasion (Grunig and Hunt, 1984).

In an organisation such as a department of health, the central task is to identify health problems for people and develop ways to prevent and treat them. The two-way asymmetric model aids this by committing practitioners to understand the message to be disseminated and then to disseminate it effectively through a strong knowledge and understanding of the target public to persuade that public to respond to the message in the desired manner. An institutionalised commitment to informing planning of communications efforts through knowledge of audiences through market or social research, part of the two-way asymmetric model, is not seen in the case.

The application of factors for successful campaigns

The factors of successful communications campaigns, as outlined by Windahl et al (1997), drawing on Rice and Aitkin (1989) and Rogers and Story (1987), can be applied directly to the case. Examination of the case through the application of these factors breaks down the elements of the case, providing insight into the challenges of the planners, the areas where the planners planned well and where the planning fell short.

1. The role of mass media. Initial awareness and knowledge can be created by mass media.

The only mention of media in the relevant sections of the "Standards" document is under recruitment, where means of recruitment are listed, such as letters of invitation, family physicians, community and women's groups and community organisations, group presentations, "the media, etc." (1994).

The media to be used was not defined. It was not accompanied by a centrally organised media campaign such as developed television or radio campaign. This was essentially due to budget. The only promotional tool committed to by the central department, the DHCS, was the standard brochure. The entire budget for promotion for DHCS was about £170,000 each year (G. Weseen, 1995).

Region 6 did advertise, as a public announcement, on community television. In New Brunswick there are free access public television channels broadcasting to the local community, which have low viewership when compared to commercial channels. On this, Region 6 made an announcement that included a number to call to make a breast cancer screening appointment (Bosca, 1997).

Region 2 did not conduct a media campaign. Kathy Henderson of Region 2 said she was "asking and hoping" for a "provincial" media campaign, meaning a province-wide campaign, co-ordinated by and paid for by DHCS (1997).

The initial awareness that could have been created by a province-wide mass media campaign was not therefore created. This would have been particularly helpful in creating awareness among the illiterate members of the target group. It is questionable whether this initial awareness would have been enough to motivate the illiterate portion of the target group to move through the adoption process to final action, making an appointment for a breast cancer screening. However, it could have established enough awareness to have the illiterate members of the group prepared for the message when the next exposure to the message occurred.

2. The role of interpersonal communication. Interpersonal communication, especially through peer groups and social networks, is instrumental for behaviour change and maintenance of the change.

The "Standards" document sets forward suggestions that could be seen as encouraging interpersonal communication: recommendations by family physicians along with initial information efforts for health professionals, promotion by women's groups and community organisations and information sessions to be offered to local women's groups.

There was no supporting information on how to conduct any of these activities.

Region 2 conducted some outreach, particularly as the process went on. Initially, the reliance was on the letter of invitation. The region did hold information sessions on women's health issues, where the topic of breast cancer screening was covered (Henderson and Novaczek, 1996).

Later, Region 2 began, as is stated in the case, to do more outreach. The DHCS suggestion of information sessions with family physicians was acted on. Also, nurses and technologists were enlisted to speak to women's groups that were already meeting for other reasons - women's clubs and church groups in particular (Henderson, 1997).

Region 6 also conducted outreach. Those working on the program met with family doctors. Also, public forums were held on the topic in community centres and general women's health issue meetings were held in co-ordination with local women's groups, with good turnouts.

Both regions took some time to develop outreach efforts. The lack of stronger definition of these efforts and a focus on them in the "Standards" document required the regions to work to define the opportunities and develop a program. A better-developed and perhaps centrally controlled program of outreach would have made outreach a focus from the beginning.

3. Characteristics of source or medium. Credibility of the source can influence the outcome of the campaign.

The source of the information in the first instance was the local regional hospital corporation. As covered in the case, the suggested letter was text-heavy. The exact format was up to the region. In the case of regions 2 and 6 it was sent on corporation stationery ([Appendix D](#)).

One characteristic of the source, in the case of the letter, is that it is official. The suggested text was also fairly complicated. Although the source was credible, the appearance of the letter could be off-putting. To someone who was unable to read the letter could easily be intimidating and useless.

This intimidation factor is lessened when the source is a person speaking directly to another person, in the case of outreach. This is particularly true if the source is a health professional, whose characteristics are generally accepted as credibility and compassion.

The "Standards" document does not take into consideration the perspective of the audience in recommending the letter as the first approach. The planning here fails to recognise that communicating first through a text-heavy, official letter may not open the receiver up to the message.

4. Formative evaluation. The campaign message must be tested against the viability of it in reality. The means to achieve the message being promoted must exist.

The message in the case is viable. The means to achieve the goal of the message - have women make a breast cancer screening appointment - exist. It is not apparent in the "Standards" document or during the author's experience working on the case, that formative evaluation was undertaken. At the least, the planners would have benefited from a thorough examination of the various available means that could have been employed to meet the goal.

5. Campaign appeals. Campaigns must be specific to individuals in order to appeal to their values and have the desired effect.

The campaign for breast cancer screening is very specific to the individual. In a general sense, the idea of "values" is addressed in that the campaign is asking its audience to do something that will benefit the audience's health. This concept is not an overriding concern of the case. It should be noted, however, that a critical examination of the campaign as to its appeal to individuals was not, to the author's knowledge, undertaken.

6. Preventative behaviour. Long-term prevention goals are difficult to achieve because the rewards are delayed and are not certain.

This is true of the breast cancer screening campaign. The message is essentially "Do this now so something bad does not happen in the future." The message has its own limitations, regardless of the channels used to communicate it. This handicap is not referred to in the "Standards" document. The suggested letter does refer to breast cancer screening as a step towards decreasing the recipient's chance of developing breast cancer, the preventative message, but the language is not motivational, but informational ([Appendix D](#)).

There was no consideration of this handicap of the message in the activities undertaken by either corporation in Region 2 or 6. It is the opinion of the author that in a large bureaucratic system such as a department of health, consideration of such factors is not undertaken because the message will not be changed as a result of such consideration, and the tasks will be the same. However, recognising the difficulties in communicating a message does have merit in that it informs the decision on the means to communicate.

7. Timeliness, compatibility and accessibility. The message of a campaign must be timely and culturally acceptable and the channels used must be available to the target audience.

In societal terms, health messages are probably better received now than in the past. Discussions of sexuality, prostate cancer and menopause are now common in the public domain whereas historically such discussions were taboo. One could conclude that the breast cancer screening message was culturally acceptable, although older segments of the population might have more reluctance to consider the issue than the younger segments.

The difficulty that this point exposes is with the channels used. The initial recruitment effort was the mailing of the letter of invitation and the standard brochure. As noted earlier, a significant percentage of the target audience for this message was illiterate. The channel of direct mailing of written communication was inappropriate and not available to a significant percentage of the population. Region 2 and Region 6 efforts both concentrated their efforts initially behind the mailings, as suggested by DHCS (Henderson and Novaczek, 1996 and Bosca, 1997). This is a major failing of the program.

Campaign goals

A case like this should also be evaluated in strictly tangible terms. As stated earlier, the "Standards" document set a goal of 70% of women aged 50-69 years participating in breast cancer screening once every two years.

As noted earlier, the program in Region 2 began in August, 1995, and at the first meeting for this dissertation, held on April 24, 1996, the participation rate was 40%. By the second meeting, November, 1997, two years and three months after the program began, the rate was 55%.

In Region 6 the program began in November, 1995 and on December 1, 1997, two years and one month later, the estimated participation rate was 36%.

Additionally, on September 29, 1997, Chris Heissner characterised the response rate to the program overall as "low" (1997).

Clearly, neither region reached the goal and their communications campaigns could not be judged to be successes.

As pointed out earlier, Rice and Aitkin (1989) assert that campaigns must set reachable goals, and that public communication campaigns often set higher standards for success than commercial campaigns.

This is an important point, but there is a certain logic to public campaigns setting high goals, particularly if the campaign is on a health message. If reaching an individual through a health message campaign can save that person's life, then it is difficult to set a target of 35%, for example.

Given this perspective, the 70% participation rate set for the breast cancer screening campaign is perhaps optimistic, but it would not appear unachievable, given the progress of Region 2.

Towards successful campaigns

Effectively communicating to illiterate populations is a communications challenge. In the case of health messages, it is a challenge that has particular consequences if it is not met.

As stated earlier, society may well consider that everyone should have the same opportunity to be healthy. If some portions of the population have better access to health information because of having more resources, they will be healthier (Windahl et al, 1997).

It is clear that if someone receives a letter of invitation to participate in a breast cancer screening program and cannot read the letter, understand it and act on the information, that person is put at a disadvantage compared to someone who is able to read. If the illiterate person is not able to adopt the innovation and take part in a preventative health activity, that person's health may suffer as a result of the inability to read.

This is supported by Rogers (1983) who, as stated earlier, suggests that the adoption of an innovation usually widens the socio-economic gap between earlier and later adopters.

Rogers suggests three strategies for narrowing the gaps.

In using Rogers' strategies to analyse the case presented in this dissertation, the terms "resourceful" and "privileged" apply to literate persons, while the terms "lower socio-economic status" and "underprivileged" apply to illiterate persons.

1. When the resourceful have greater access to information:
 - make the information appropriate and interesting to the lower socio-economic status portion of the audience, even if it becomes less interesting to the higher socio-economic status portion - use communication channels that target the underprivileged
 - form small groups of the resource-poor to discuss the innovation
 - concentrate the efforts of those carrying out the communication on late adopters

These points are highly instructive when looking at the problem of communicating to illiterate populations. The premise in this strategy is that if there is an underprivileged element to a target population, direct the planning towards that element.

In the case, there were attempts to ensure the language of the standard brochure was simple. However, this approach was not taken with the letter of invitation. If the presence of a significant percentage of illiterate people in the target population had been a focus at the beginning of the planning, the disadvantage of illiteracy in the target group could have been targeted.

The question of channels is very important. Choosing channels that target the underprivileged in the case means adopting channels other than those that rely on written communication. Those who planned the communication in the case stressed two channels as the most effective: physician referral and letters of invitation. The focus of the support of the central body, the DHCS, however, is the letters of invitation, to be accompanied by a standard brochure. The "Standards" document includes a suggested letter of invitation.

As stated in the case description, in the promotion section the "Standards" document states, "The Department of Health and Community Services shall implement general provincial efforts to promote breast cancer screening services, including the development of a standard brochure aimed at encouraging participation of the target group and the mailing of introductory explanatory letters to health professionals and provincial associations/organisations requesting their support" (Breast Cancer...1994:3).

The "Standards" document also states, "Region Health Corporations should promote breast cancer screening services through regional and local initiatives directed at health professionals and the target women" (Breast Cancer...1994:3).

So, the DHCS developed both the promotional brochure and a standard letter to support the suggested activity of direct mailing of letters of invitation. In support of the physician referral, DHCS planned an introductory letter and suggested the regions carry out other activities. Providing support to the suggestion of mailing personal letters of invitation but providing only one letter to the physicians focused activities on the letters of invitation idea and not on physician referral. The channel of letters of invitation, effective in reaching the privileged, the literate group, is given preference over the channel of physician referral which would be more effective in reaching the underprivileged, the illiterate group. There was an opportunity here that might have been taken if the planners had been aware of the characteristics of the group, to encourage personal contact with members of the target public.

Both regions interviewed did conduct meetings with groups, but these were not specifically target at members of the underprivileged, illiterate group and were not held to discuss the innovation.

There was no direction from DHCS in the "Standards" document to concentrate efforts on those who might be late adopters. Chaffee (1986) states that late adopters may rely more on interpersonally transmitted information, which could be due to a lack of resources, including literacy. If the literacy level of the target public had been understood, theory suggests the focus on late adopters would help address the issue.

2. When the privileged have greater access to information from peers than do the underprivileged:
 - identify the opinion leaders of the lower socio-economic status portion of the target audience and feed them information

Identification of opinion leaders of any group within the target population was not a strategy developed or recommended by DHCS in the "Standards" document. Opinion leaders are a key subsection of any public and identifying and informing them can be an effective tool in message dissemination. These leaders would have been particularly helpful in reaching the underprivileged, illiterate group, as the communication of such leaders is usually verbal.

3. When the privileged have more slack resources available for complying with the message to innovate than do the underprivileged:
 - recommend innovations and behaviours that are appropriate to the lower socio-economic status portion of the target audience
 - invite the lower socio-economic portion to take part in the planning of the program

As the health system in Canada is a public system, resources available for complying with the innovation, apart, possibly, from transportation in some remote areas, are not a difficulty. The innovation is appropriate to the target group, including the lower socio-economic portion.

The suggestion of involving the lower socio-economic portion of the group in planning communication could have been considered. Of course, recognising that group, in this case the illiterate portion of the target population, is the first step. Once the group is identified, holding discussions with members of the group to develop strategies to effectively communicate to it, would inform the planning. For a group that is defined by illiteracy, recruitment of members for planning might prove problematic due to the stigma of illiteracy. However, this exercise was not attempted in any way by DHCS.

CONCLUSIONS AND RECOMMENDATIONS

The author believes that the study of communicating to illiterate populations is particularly important for those organisations that have the responsibility of communicating equally to all members of a population, such as governments.

The theory presented in this dissertation, when applied to the case, offers guidance to the question of how to communicate to illiterate publics.

The theory, when applied to the case, suggests that within organisations, the first step towards communicating effectively to illiterate populations should be the adoption of the two-way asymmetric model of communication. The two-way asymmetric model institutionalises a channel of communication from an organisation's publics to the organisation. In order to facilitate the consideration of the characteristics of a target public, including illiteracy, communications practitioners must be committed to conducting campaigns effectively through a strong knowledge and understanding of the target public so to persuade that public to respond to the message in the desired manner.

An organisation's adoption of the two-way asymmetric model gives the responsibility of gathering information and developing an understanding about the organisation's publics to the public relations or communications staff. This is the boundary-spanning role, with practitioners straddling the boundaries between the organisation and the public (Grunig and Hunt, 1984).

The analysis of the case using the theory presented in this dissertation suggests that the adoption of the two-way asymmetric model should be understood by public relations staff inside an organisation. It is safe to say that all public relations practitioners do not see themselves as boundary-spanners.

The analysis also suggests that non-communications staff within an organisation must recognise the role of public relations personnel as boundary spanners for the adoption to work. Additionally, the other may need to have a correct impression of public relations' role as a key function in the planning of any communications campaign. If this understanding exists, the staff might turn to public relations for information on the external public that is the focus of a campaign for information on that public and strategies to incorporate that information into planning. This should in turn keep the pressure on public relations to be informed about external publics and on techniques on how to meet the goal of having such information. It would seem to be important that staff understand that information on external publics is important to planning, not just implementation. The analysis of the case in this dissertation illustrates a misunderstanding of this point.

The author has concluded that for those public relations practitioners who are part of organisations that have the responsibility of communicating equally to all members of a population, such as governments, there needs to be the realisation that illiteracy is usually a characteristic of a percentage of their target publics. Given the statistics presented earlier in this dissertation, it would be difficult to imagine a public of an organisation such as a government that would not include a significant portion that is illiterate, using this dissertation's definition.

Meeting the challenge of communicating to illiterate populations first requires this realisation. For those practitioners who must reach all members of their target audience, it should be a golden rule that the illiteracy level of a target public must be determined as best it can in advance of planning any campaign.

Once practitioners are committed to ascertaining the literacy level of a target public, they need the tools to reach the illiterate portion of that public effectively.

Rogers' (1983) strategies for communications campaigns for an adoption of an innovation directed at groups with differing levels of resources and privileges point directly to the tools to meet the challenge.

When directing a campaign towards a public that includes people with differing levels of literacy, it seems that it is those methods that will reach the illiterate segment of that public that must be adopted. The information should be made appropriate to the illiterate group. For example, this could include plain writing of written information to reach more of the group through simple language, even though the literate consumers of such information may find it too simple. Those that find it too simple will certainly understand it.

Communication channels should be chosen with the illiterate group in mind and it follows that outreach should be a focus of any campaign directed at a target public that includes a significant percentage of people who are illiterate. This outreach should be particular to the group to which the organisation wants to communicate. In this dissertation's case, for example, family physicians were an excellent channel of interpersonal communication, one that if focused on at the outset could have been a main recruitment tool. Additionally, using the case as an example, sending health professionals to where members of the target group gather in the community, such as women's clubs, spas and health clubs, church meetings, community centres, women's shelters, and other outreach opportunities should have been a focus of the campaign from the beginning.

Late adopters can be reached by outreach. These are adopters of innovations that only come around to adoption after resisting the innovation. It is precisely these late adopters that Chaffee (1986) states may rely more on interpersonally transmitted information.

Beyond direct outreach, opinion leaders can facilitate interpersonal communication. To reach illiterate publics, practitioners must become practised at identifying opinion leaders of target groups and communicating to a larger group through them. If an opinion leader is seen to endorse something, a member of a target group who looks to that leader for guidance is more easily persuaded of the merit of a message. All of this communication can take place non-verbally.

Recommendations for further research

The author believes that the study of communicating to illiterate audiences as a communications issue generally needs to be examined much more thoroughly than it has been examined. As revealed by the statistics presented earlier in this dissertation, the problem of illiteracy is significant. We do not know the impact on illiterate people of communications campaigns that do not consider these statistics and undertake measures to ensure that illiterate people receive the same information as literate people.

Another recommendation is that research into tools to communicate to illiterate populations should be conducted. A number have been identified in this dissertation, but studying the topic independent of a framework such as this dissertation's topic might reveal new tools to help meet this challenge.

Additionally, more research should be conducted on the perception of public relations by non-public relations staff within organisations such as government departments. The presence of the public relations function at the planning stages of communications campaigns is critical in designing a successful campaign. If that presence is not practice, studying the reasons for this and what steps can be taken to ensure this occurs would make a helpful contribution to the field.

The final area that should be examined is the adoption of the two-way symmetrical model of communication. Theory should lead practice, but practice needs to be checked to see if theory is leaving it behind. The practice must inform the theory and studies should be done to see what the gap is, testing the theory. Both of these last two recommendations have direct bearing on the communications challenge of communicating to illiterate populations. As described earlier, the adoption of the two-way asymmetrical model and the correct understanding of it guides a process that should ultimately consider illiteracy in communications planning.

LIST OF APPENDICES

Appendix A - "Breast Cancer Screening Services in New Brunswick: Policy and Standards"

Appendix B - Internal DHCS correspondence on the standard breast cancer screening brochure

Appendix C - Standard breast cancer screening brochure

Appendix D - Letters of invitation to breast cancer screening - Regions 2 and 6

Appendix E - Map of New Brunswick, with Health Regions

APPENDIX A

***BREAST CANCER SCREENING
SERVICES
IN NEW BRUNSWICK:
POLICY AND STANDARDS***

November 1, 1994

New  Brunswick
Health and
Community Services

TABLE OF CONTENTS

SECTION I: INTRODUCTION

PROVINCIAL POLICY ON BREAST CANCER SCREENING
OBJECTIVE
METHOD OF IMPLEMENTATION: OVERVIEW

SECTION II: STANDARDS FOR BREAST CANCER SCREENING SERVICES

1. ELIGIBILITY
2. RECRUITMENT
3. PROMOTION OF BREAST SCREENING SERVICES
4. SERVICE COMPONENTS
5. RADIOLOGISTS
6. MEDICAL RADIATION TECHNOLOGISTS
7. MEDICAL PHYSICIST
8. SCREENING SITES
9. EQUIPMENT
10. REPORTING AND FOLLOW-UP
11. DATA MANAGEMENT AND INFORMATION SYSTEMS REQUIREMENTS
12. QUALITY ASSURANCE/RISK MANAGEMENT

APPENDICES

- Appendix A. References
- Appendix B. Eligibility Checklist
- Appendix C. Registration and Return Visit Update Questionnaires
- Appendix D. Letter of Invitation (Model)
- Appendix E. Quality Control Testing and Mammographic Equipment Standards
- Appendix F. Letters to Women and Their Physicians or Designated Health Center
- for "Normal" Results
- Appendix G. Letters to Women and Their Physicians or Designated Health Center
- for "Abnormal" Results and "Need for Repeat Exam"
- Appendix H. Breast History and Screening Mammography Report
- Appendix I. Follow-up Action Reports
- Appendix J. Reporting Requirements
- Appendix K. International Standards for Breast Screening
- Appendix L. Glossary of Abbreviations

Note: A list of references used in the development of this document is attached as [Appendix A](#). Within the document, each reference is identified by a number which refers to the appropriate listed source. A glossary of abbreviations used in the text is found in [Appendix L](#).

SECTION I

INTRODUCTION

Building on the report of the New Brunswick Breast Cancer Screening Committee¹ and the restructured hospital system, the Department of Health and Community Services is introducing organized, targeted breast cancer screening services congruent with the following principles:

- *providing services consistent with available resources;*
- *being efficient and effective in supporting the well-being of New Brunswickers;*
- *implementing/providing selective programming/services that are appropriate to need;*
- *providing services on an equitable basis;*
- *adopting a provincial planning framework with decentralized deliver; and*
- *being results oriented.*

PROVINCIAL POLICY ON BREAST CANCER SCREENING

Given the breast cancer incidence and mortality rates in New Brunswick¹⁻² and the evidence supporting the effectiveness of breast screening for women 50 to 69 years of age³⁻⁵, the New Brunswick government has adopted the following policy:

That asymptomatic women aged 50-69 be offered and encouraged to participate in early detection services for breast cancer, consisting of mammography, physical examination of the breasts by a health professional and the teaching and monitoring of breast self-examination every 2 years; and

That the validity of early detection procedures for women outside this age group be determined in consultation with their family physician based on risk factor assessment.

OBJECTIVE

The objective of breast cancer screening is to find cancers of the breast in the earliest possible stages of development. The goal of organized breast cancer screening services is to decrease mortality from breast cancer.

METHOD OF IMPLEMENTATION: OVERVIEW

Mammography Screening

Mammography screening shall be available through the use of selected, existing mammography units in New Brunswick hospitals. Region Hospital Corporations shall be responsible for ensuring the provision of mammography screening services in accordance with the provincial standards that follow. Mammography screening shall be accessed through self-referral or physician referral. Women shall be informed of the results of their mammogram by a letter from the screening centre. Reports and radiologist's comments, where appropriate, pertaining to the screening mammogram shall be forwarded to the family physician or the Health Center designated by the women. Family physicians or the Health Center shall be responsible for directing follow-up care in the event of abnormal mammography screening results. (Note: Family physicians will continue to refer women to diagnostic mammography when appropriate. Diagnostic evaluation is indicated at any age if a woman has a lump or other signs of disease. In contrast to diagnostic assessments, screening mammography is a routine measure seeking to detect early disease in asymptomatic women).

Clinical Breast Examinations

Women who present themselves for mammography screening shall be encouraged to have clinical breast examinations (CBE) as part of their comprehensive women's health care. The letters sent to both women and their physicians concerning mammography screening results shall also reinforce this message. Compliance with CBE recommendations shall be monitored through self-reports from women upon their return visits for mammography screening.

Education and Breast Self-Examination

Mammography screening sites shall also provide an educational service for women. Educational materials on general breast health shall be available, as well as pamphlets and video instruction on breast self-examination (BSE). Where possible/available contacts for further instruction or workshops on BSE will be provided to interested women. Monthly BSE shall also be reinforced to women through their mammography screening results letter.

Note: It is anticipated that organized breast screening services be operational in N.B. by January, 1995.

SECTION II

STANDARDS FOR BREAST CANCER SCREENING SERVICES

The words *shall* and *should* are used differentially in this document and have been chosen with purpose. The word *shall* indicates a recommendation that is essential to meet the currently accepted standards; *should* indicates an advisory recommendation that is highly desirable and is to be implemented where applicable/feasible.

The term *Health Center* in this document refers to facilities operated by Region Hospital Corporations.

The provincial standards provide those concerned about breast cancer with a reasonable consensus on the conditions required to achieve quality breast screening with the lowest possible risk for the ultimate benefit of New Brunswick women.

1. ELIGIBILITY

1.1 The target population for breast screening services shall include **asymptomatic women between the ages of 50-69 who are residents of N.B.**

1.2 Asymptomatic women outside the 50-69 year age group (i.e., women under 50 and over 69 years of age) shall be accepted for mammography screening services only upon referral by a physician. If these women attempt to self-refer they should be advised that routine breast screening of women their age is controversial³⁻⁸ and to discuss the merits of breast screening for themselves with their family physician.

1.3 The following conditions shall warrant permanent ineligibility for breast screening services:

- past diagnosis of breast cancer
- breast enlargement surgery such as implants or injections

1.4 Women with the following conditions shall be temporarily ineligible for breast screening services:

- mammogram within the previous year
- breast surgery in the previous two years
- breastfeeding in previous three months ,
- possible pregnancy

As well, screening services are not appropriate for women with any signs or symptoms of potential breast cancer (e.g., solitary breast lump, bloody nipple discharge). Such women shall be referred to their family physicians for appropriate diagnostic assessment.

1.4.1 Screening sites shall follow the provincial protocol to discuss and explain ineligibility.

1.5 Breast screening services shall be accessible to eligible women through either self-referral or physician referral;

1.6 Any woman who contacts the designated screening site for an appointment or for whom a referral has been received shall be asked a standard series of questions (see [Appendix B](#)) to determine her eligibility status. Women who are ineligible should be told the rationale for their ineligibility and advised re options available/appropriate for them. Women who are temporarily ineligible should be advised when they would be considered eligible for a future appointment and, if feasible, be provided with an appointment date that respects the time stipulation(s) specific to their condition(s).

- 1.7 Upon registration (see [Appendix C](#)), all women shall be asked to identify the name of their personal physician or designated Health Center where screening results can be forwarded. Screening sites shall have available a list of physicians willing to accept patients from the local screening service. Women who do not have a physician shall be asked to select one from this list.

2. RECRUITMENT

Significant reduction in breast cancer mortality (i.e., 30-40%) is dependent on high participation rates of target women. A **minimum of 70% of women 50-69 years of age must be participating in quality screening^{4,9,10} once every two years.** Recommendation by a family physician¹¹⁻¹⁴ and personal letters of invitation^{9,12} have been found to be the most effective ways to recruit women to breast screening services.

- 2.1 The geographical area of recruitment shall be the catchment area for each Region Hospital Corporation.
- 2.2 A variety of methods should be used to encourage participation of target women in breast screening: personal letters of invitation, recommendation/referral by family physicians, endorsement and promotion by women's groups and community organizations, group presentations, the media, etc.
- 2.3 Region Hospital Corporations shall have access to a Department of Health and Community Services' registry of women (including their names and addresses) in their recruitment areas between 50-69 years of age. Women identified on the registry shall receive a letter of invitation (see [Appendix D](#)) to participate in breast screening services.
- 2.4 Region Hospital Corporations shall attempt to achieve at least a 70% participation rate of target women once every two years.

3. PROMOTION OF BREAST SCREENING SERVICES

The Department of Health and Community Services shall implement general provincial efforts to promote breast screening services, including the development of a standard brochure aimed at encouraging participation of the target group and the mailing of introductory explanatory letters to health professionals and provincial associations/organizations requesting their support.

Region Hospital Corporations should promote breast screening services through regional and local initiatives directed at health professionals and the target women.

- 3.1 Information on the service components, delivery system and monitoring and evaluation methods should be provided to health professionals through:
 - continuing education sessions
 - brochures, updates for physicians and other health professionals
 - journal articles and newsletters
- 3.2 Promotional material that provides a description of the service and encourages participation should be directed to women of the target group through:
 - information and educational sessions offered to local women's groups
 - media notices
 - educational materials available at all screening sites
 - inclusion of the standard brochure with target women's letters of invitation
 - making the standard brochures available in appropriate locations (e.g., doctors' offices, pharmacies)
 - posters in appropriate locations (e.g., shopping centres, beauty salons)

- other local communication channels (e.g., Public Health Offices)

4. SERVICE COMPONENTS

4.1 Mammography screening services shall consist of the following components:

- a pre-booking interview, usually by telephone, to determine eligibility and to provide general information (see [Appendix B](#))
- completion of a registration or return visit update questionnaire (see [Appendix C](#)) and facility outpatient registration/admission form
- a two view mammogram: the mediolateral oblique and craniocaudal views shall be the routinely performed views for all mammographic screening examinations^{5,8}

4.2 In addition to mammography, screening sites shall ensure that:

- educational pamphlets on general breast health are provided
- educational pamphlets and video instruction (and contacts for further instruction/workshops, where available) on breast self-examination are available
- provision is made for participants to have clinical breast examinations as a part of their comprehensive women's health care

5. RADIOLOGISTS

Screening mammography shall be performed in a radiologic facility under the general direction of a radiologist. A radiologist supervising and/or interpreting screening mammography shall:

- be certified in Diagnostic Radiology by the Royal College of Physicians and Surgeons of Canada or the Corporation professionnelle des médecins du Québec, and be registered as specialists by the College of Physicians and Surgeons of New Brunswick;
- be licensed to practise medicine in New Brunswick and a member of the medical staff of the hospital;
- have demonstrated experience in clinical mammography which should include a minimum of two years experience and at least 2,500 mammographic interpretations^{15,16};
- have documented 40 hours of Continuing Medical Education credits in mammography (time spent in residency specifically devoted to mammography may be included)^{15,17,18}.
- read a minimum of 1,200 mammograms per year (includes diagnostic and screening mammograms)^{19,20};
- maintain records concerning outcome data for correlation of positive mammograms to biopsies done and the number of cancers detected¹⁷; and
- document 15 hours of Continuing Medical Education Credits in Mammography every three years^{15,17,18}.

6. MEDICAL RADIATION TECHNOLOGISTS

Medical Radiation Technologists performing screening mammography:

- shall be registered with the Canadian Association of Medical Radiation Technologists (CAMRT), New Brunswick Division;
- shall maintain active membership in CAMRT;
- shall have special training (e.g., special courses) and/or experience in clinical mammography^{17,19,21};
- shall perform at least 100 mammographic procedures per month (includes diagnostic and screening mammograms) to maintain the necessary skills required for the procedure¹⁹;
- should have successfully completed levels I and II of CAMRT's mammography quality control program; and
- should document 15 hours of Continuing Medical Education Credits in mammography every three years.

7. MEDICAL PHYSICIST

- 7.1 There shall be access to a medical physicist for consultation and interpretation of the required assessments of equipment performance and quality control parameters^{17,21,22} (see items 9 and 12).
- 7.2 The medical physicist shall either be a physicist from or one approved by Radiation Protection Services of the Department of Health and Community Services²³⁻²⁴.

8. SCREENING SITES

- 8.1 Each Region Hospital Corporation shall determine the number and location of breast cancer screening sites in its Region.
- 8.2 The hospital radiologic facilities of breast screening sites selected by Region Hospital Corporations shall be approved for breast screening by the New Brunswick Department of Health and Community Services.
- 8.3 Administration of the services shall be the responsibility of the Region Hospital Corporation.
- 8.4 The hours of operation should be flexible and convenient to encourage participation by the target population (see [item 2](#)).
- 8.5 Provisions should be made for privacy and comfort of women attending screening.
- 8.6 Screening facilities should be accessible within one hour's travel time for those driving.

Breast Cancer Screening Services in New Brunswick

9. EQUIPMENT

- 9.1 New Brunswick Radiation Safety Standards²³⁻²⁴, Canadian Standards Association and federal legislative requirements²¹ shall be met.
- 9.2 Mammograms shall be performed only on dedicated mammographic x-ray equipment^{17-19,21}.
- 9.3 There shall be an adequate device for compressing the breast²⁴ and a grid shall be available^{17,19,21}.
 - 9.3.1 The compression force applied to the breast shall range between 20-40 pounds²⁵.
- 9.4 A quality assurance program shall be in place that examines the equipment, film processing, and ensures adequate image quality^{5,10,17,19,21,23-25} (see [item 12](#)).
- 9.5 The target material, focal spot size and filtration shall be appropriate for the characteristics of the image receptor^{17,21}.
- 9.6 There shall be a processor that is designed and engineered to appropriately process mammographic film.^{17,19}
- 9.7 Cassette screens should be replaced annually and shall be replaced at least every two years.
- 9.8 The quality assurance technologist/engineer (see [item 12.3](#)) shall perform tests on all site equipment prior to screening start-up to ensure it meets provincial equipment standards (see [Appendix E](#)) and to provide a baseline standard of performance for comparative purposes during ongoing quality control testing. The quality assurance technologist/engineer shall also perform ongoing tests on equipment as specified in [Appendix E](#)^{17,21,22}. Test results shall be made available to Radiation Protection Services of the Department of Health and Community Services.

10. REPORTING AND FOLLOW-UP

- 10.1 Letters indicating the screening mammography results shall be forwarded to the women. In addition, a report on the results of the screening mammogram shall be sent to their family physician or designated Health Center. This information should be made available as soon as reasonably possible following the examinations. In at least 95 % of cases, the women and their physicians or designated Health Center shall be informed within 15 working days of the screening visit (See [Appendices F and G](#)).
- 10.2 When mammography screening results are "normal", a letter (see [Appendix F](#)) shall be sent to the woman and her physician or designated Health Center advising them of the results and recommendations for appropriate ongoing screening. This letter shall also advise women to have physical breast examinations as part of their comprehensive women's health care and to continue practising breast self-examination.
- 10.3 The coordination of follow-up and diagnosis for "abnormal" mammograms shall be the responsibility of the woman's family physician or designated Health Center. When mammography screening results are "abnormal", notice (see [Appendix G](#)) shall initially be sent to the woman's physician or designated Health Center advising that further follow-up is required. A copy of the radiologic report with recommendations for further follow-up shall also be included (see [Appendix H](#)).
 - 10.3.1 All screening reports in the abnormal category should be communicated to the family physician or designated Health Center by telephone, certified mail, or in such a manner that receipt of the report is assured and documented. This correspondence shall be clearly marked to indicate that immediate action is required. It shall note that the physician's office or designated Health Center may wish to contact the woman immediately to advise her of the results, prior to her receipt of the results letter from the screening site.

Breast Cancer Screening Services in New Brunswick

- 10.3.2 Following forwarding of report/notification to the family physician or designated Health Center, a letter (see [Appendix G](#)) shall be forwarded to the woman advising her that more follow-up is required and asking her to contact her doctor if she has not already been contacted.
- 10.4 The screening service shall initiate a review process (see [Appendix I](#)) with the family physician or designated Health Center 2 weeks following the mailing of an abnormal report and continue to follow-up monthly until follow-up action and diagnosis has been determined and reported back to the screening site.
- 10.5 Any and all original forms or reports shall become part of the patient's clinical record.
- 10.6 Film Retention: Original mammograms shall be retained and available to the patient for a period of at least 5 years¹⁷.

11. DATA MANAGEMENT AND INFORMATION SYSTEMS REQUIREMENTS

Specific data elements shall be captured to determine participation rates, monitor technical quality, evaluate service effectiveness, and assess results with respect to reducing morbidity and mortality from breast cancer. Potential data elements for the provincial data collection system are outlined in [Appendix J](#)²⁶. International standards/targets have been established for many of these data which quality breast screening services should be achieving/striving to achieve (see [Appendix K](#)).

11.1 To ensure standard collection of the data required for monitoring and evaluation purposes, the following forms (or adaptations thereof which include the content of the standard forms as a minimum) shall be used by Corporations for breast screening services:

- Eligibility Checklist (see [Appendix B](#))
- Registration/Return Visit Update Questionnaire (see [Appendix C](#))
- Letter of Invitation (see [Appendix D](#))
- Result Report Letters to Women and Their Physicians for "normal", "abnormal" and "need for repeat exam" cases (see [Appendices F and G](#))
- Breast History and Screening Mammography Report (see [Appendix H](#))
- Follow-up Action Reports (see [Appendix I](#))

12. QUALITY ASSURANCE/RISK MANAGEMENT

Mass mammography screening of the target population has the potential to significantly reduce mortality from breast cancer. The effectiveness and success of such screening depends on consistent production of high resolution, high contrast, low dose mammographic images^{9,10,17-19,21,25,27}.

- 12.1 Region Hospital Corporations shall be expected to pursue accreditation for breast screening sites through the Canadian Association of Radiology (CAR) Mammography Accreditation Program.¹⁷
- 12.2 Region Hospital Corporations performing mammography shall be responsible for the quality of mammography and for the implementation of an effective quality assurance program at each screening site^{21,23,24}.
- 12.3 To ensure consistency in quality control test performance, a single technologist or clinical engineer per screening site shall be selected and trained to perform this task²⁷. A back-up should also be available to perform these tests when necessary.

Breast Cancer Screening Services in New Brunswick

12.4 A documented quality control program with procedure manuals and logs shall be maintained and be available to all staff^{17,21,25}. The quality control program shall include the quality control testing outlined in Appendix E as a minimum. The testing as described in the American College of Radiology mammography quality control manuals^{22,27,28} should be followed.

12.5 The Procedures Manual shall contain:

- clearly assigned responsibilities and procedures for quality assurance/quality control testing
- procedures for proper use and maintenance of equipment, including the appropriate image receptors and kVp-target-filter combinations for mammography
- mammographic techniques to be used, including pertinent information on positioning, compression, exposure techniques, image quality and average glandular doses with those techniques
- precautions to protect the operator of the equipment, the patient, and individuals in surrounding areas from unnecessary radiation exposure
- policies and employee responsibilities concerning personnel radiation monitoring
- proper maintenance of records, including records of all quality control testing, equipment service and maintenance, and quality assurance meetings.

12.6 There shall be a system in place for reviewing outcome data from mammography, including follow-up re the disposition of abnormal mammograms, and correlation of surgical biopsy results with mammogram reports^{5,16,17,19,26,27}.

12.7 Prior mammograms should be available for comparison when practical¹⁷.

12.8 The following quality assurance mechanisms shall be in place:

- double-readings of at least 5%¹⁵ of screening mammograms; individual monitoring and feedback to radiologists consisting of: (a) referral rates, (b) outcomes of assessments, including rate of cancers detected per 1000 women screened at prevalence and incidence rounds, rate of small cancers ($\leq 15\text{mm}$) detected, and (c) rate of interval cancers^{15-17,29}; and
- inservice education programs and access to professional development workshops related to mammography^{15,16,19,21,30} (e.g., Level I, II and III Tabar courses in mammography) .

Other possible strategies include:

- monthly site reviews/rounds that include the radiologists and technologists to discuss new breast cancer cases detected, interval cancers, cases where opinions differed on double-reads, etc.^{15,16};
- annual multidisciplinary rounds where the radiologists, surgeons, pathologists and family physicians meet to review assessment findings^{15,16};
- submission of a portion of mammograms for review by external radiologists^{16,30}; and
- Review of Breast Cancer Screening statistics.

Note: A list of references used in the development of this document is attached as [Appendix A](#). Within the document, each reference is identified by a number which refers to the appropriate listed source.

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30. Alberta Cancer Board. (1993). [Sample materials and forms used by Screen Test - Alberta Program for the Early Detection of Breast Cancer]. Unpublished raw data.
31. Screening Mammography Program of British Columbia. (1993). [Sample materials and forms used by the screening mammography program of British Columbia]. Unpublished raw data.
32. National Health Service (NHS) Breast Screening Program. (1993). *Standards for the NHS breast screening program*. England: Author.

ELIGIBILITY CHECKLIST

PROCEDURE:

1. Ascertain the eligibility of the caller using the checklist below.
2. If the woman is eligible, schedule an appointment. Ask her to:
 - bring her Medicare card, the name and address of her family physician or name of designated Health center the day of her visit. If she does not have a physician, advise her that she will be asked to select one from a list of physicians willing to accept clients from the screening service.
 - not apply any deodorant or body powder the day of her visit.
3. If the woman is ineligible due to a temporary condition, she may--if feasible--be provided with an appointment date that respects the time stipulation(s) specific to her condition(s).
4. If the woman is permanently ineligible, explain that:
 - follow-up and management of women who have had breast cancer is best provided by their personal physician; and/or
 - breast enlargement surgery requires specialized mammography positioning that is beyond the scope of screening. Mammography for these women should be arranged through their physician.
5. If the woman is a returning screenee who was last examined at another N.B. screening site and it is not feasible for her to return to the previous site, initiate a request for her file through hospital facility clinical records.

ELIGIBILITY CHECKLIST	ELIGIBLE (if <u>all</u> checked)	INELIGIBLE (if <u>any</u> checked) (P) = permanently
What is your current age?	<input type="checkbox"/> ≥ 50 years and ≤ 69 years	<input type="checkbox"/> < 50 years or > 69 years
Are you a New Brunswick resident?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Have you had a mammogram in the last year?	<input type="checkbox"/> No	<input type="checkbox"/> Yes
Do you now have any breast symptoms or complaints such as a solitary lump or nipple discharge?	<input type="checkbox"/> No	<input type="checkbox"/> Yes (Refer to GP)
Have you had breast cancer?	<input type="checkbox"/> No	<input type="checkbox"/> Yes (P)
Have you had breast enlargement surgery, such as implants or injections?	<input type="checkbox"/> No	<input type="checkbox"/> Yes (P)
Have you been breastfeeding in the last 3 months?	<input type="checkbox"/> No	<input type="checkbox"/> Yes
Is there a possibility that you are currently pregnant?	<input type="checkbox"/> No	<input type="checkbox"/> Yes

REGISTRATION AND RETURN VISIT UPDATE QUESTIONNAIRES

PART I – INITIAL VISIT ONLY

(Space to be allotted for addressograph)

HOSPITAL FACILITY _____

DEMOGRAPHIC INFORMATION

LAST NAME: _____ FIRST NAME: _____ MIDDLE INITIAL: _____

MAIDEN NAME: _____

BIRTH DATE: ___/___/___ (yyyy/mm/dd)

PROVINCE/COUNTRY OF BIRTH: _____

TELEPHONE: (home) - _____

(work)- _____

HOME ADDRESS: Street: _____ City/Town: _____

Postal Code: _____

MAILING ADDRESS: Street: _____ City/Town: _____

Postal Code: _____

FAMILY DOCTOR: Name: _____ Mailing Address: _____

Postal Code: _____

N.B. MEDICARE NUMBER: _____

Facility Unique Identifier: _____

Residence Code: _____

BACKGROUND INFORMATION

Please help us determine your health profile by answering these questions:

1. Have you ever had a mammogram (breast x-ray)?

- Yes No

If **Yes**, when was your most recent mammogram?

- 1-2 years ago 2-3 years ago
- 3-5 years ago more than 5 years ago

2. Have you ever had a physical examination of your breasts by a doctor or other trained health professional?

- Yes No

If **Yes**:

- When was most recent exam? less than 1 year ago 1-2 years ago
- 2-3 years ago more than 3 years ago
- Who completed the exam? a doctor a nurse
- other trained health professional

3. Have you ever been taught how to do breast self-examination?

- Yes No

If **Yes**, by whom?

- doctor other health professional in a private session
- a class pamphlet other

13. Your approximate weight:
_____kg **or** _____lbs

New Brunswick Breast Cancer Screening is trying to reach as many New Brunswick women as possible. To do this we need to know which groups of women we may be missing. Please help us assess our recruitment and advertising methods by answering these questions:

14. What is the highest level of education you have attained? (Please check ✓ only one answer)

- Grade 9 or less Some high school High school diploma
 College/Some university University degree

15. In your paid job, what is (or was) has your main occupation been? (Please check ✓ only one answer)

- farming/fishing/processing sales/services clerical
 management professional other

16. Where did you hear about the breast screening services? (Please check ✓ all the answers that apply to you)

- doctor friend/relative
 invitation letter magazine/newspaper
 poster/pamphlet radio.
 television other please specify _____

17. Of all the ways you heard about the Breast Screening Services, which one convinced you to come for screening? Underline the most important one in the list above.

CONSENT FOR RELEASE OF INFORMATION: INITIAL VISIT

I _____ of _____ hereby consent to _____ breast screening service accessing any and all information contained in my clinical (health) record retained by - for the following purposes:

- (1) for the Department of Health and Community Services to evaluate the effectiveness of Breast Cancer Screening Services in meeting its objectives and goals;
- (2) for the Department of Health and Community Services to collect statistics on the early detection of and treatment of breast cancer in New Brunswick to determine whether or not breast cancer mortality is decreasing in the province; and
- (3) utilization in the Canadian Breast Cancer Screening Database for research concerning breast cancer.

Signed by _____ day of _____ 199__.

WITNESS

SIGNATURE OF _____

PART II – RETURN VISIT UPDATE

(Space to be allotted for addressograph)

NAME: _____

HOSPITAL FACILITY: _____

DATE OF RETURN VISIT: _____

MEDICARE NUMBER: _____

1. Have you had a mammogram (breast x-ray) since your last visit for a screening mammogram?
 Yes No

If Yes, when?

- < 1 year ago 1-2 years ago 2-3 years ago
- 3-5 years ago more than 5 years ago

2. Have you ever had a physical examination of your breasts by a doctor or other trained health professional?
 Yes No

If Yes:

- When was most recent exam? less than 1 year ago 1-2 years ago
- 2-3 years ago more than 3 years ago
- Who completed the exam? a doctor a nurse
- other trained health professional

3. Have you ever been taught how to do breast self-examination?
 Yes No

If Yes, by whom?

- doctor other health professional in a private session
- a class pamphlet other

4. How many times a year do you do breast self-examination?
 0 1-3 4-8
 9-15 15 or more

If you do breast self examination, do you feel confident that you are doing it correctly?
 Yes No

5. Have you ever had breast biopsies taken?
 No Yes, aspiration/needle biopsy Yes, surgical biopsy
 Yes, unsure of type

If Yes:

- How many? _____
- Date of most recent? _____

6. Have you menstruated in the last year?
 Yes No

If No:

- How old were you when your menstrual periods stopped? _____
- Did you have a hysterectomy at that time? Yes No Unknown
- Have you had both ovaries totally removed? Yes No Unknown

7. Have you ever taken estrogen containing drugs (e.g., birth control pills, premarin, climacteron or hormone injections)?

- Yes No

If Yes, are you **currently** taking estrogen (or other hormones)?

- Yes No

What is the total number of years you have been taking estrogen? _____

8. Is there a history of breast cancer among your 1st degree blood relatives (i.e., mother, full sister or daughter)?

- No Yes, sister(s) Yes, mother
 Yes, daughter(s) Unknown

If Yes:

- Were any of them diagnosed before age 50? Yes No Unknown
- Were both breasts involved for any of them? Yes No Unknown

9. Your approximate weight:

_____ kg **or** _____ lbs

CONSENT FOR RELEASE OF INFORMATION: RETURN VISIT

I _____ of _____ hereby consent to _____ breast screening service accessing any and all information contained in my clinical (health) record retained by _____ for the following purposes:

- (1) for the Department of Health and Community Services to evaluate the effectiveness of Breast Cancer Screening Services in meeting its objectives and goals;
- (2) for the Department of Health and Community Services to collect statistics on the early detection of and treatment of breast cancer in New Brunswick to determine whether or not breast cancer mortality is decreasing in the province; and
- (3) utilization in the Canadian Breast Cancer Screening Database for research concerning breast cancer.

Signed by _____ day of _____ 199__.

WITNESS

SIGNATURE OF _____

LETTER OF INVITATION (MODEL)

Dear -----

Please accept my personal invitation to participate in a special breast cancer screening service for New Brunswick women between 50 and 69 years of age. This service is offered by Region Hospital Corporations to help decrease women's risk of breast cancer death.

In New Brunswick, breast cancer is the most common cancer for women and is the number one cause of women's cancer deaths. As a woman, your risk for breast cancer increases with age; in fact, aging is a much stronger risk factor than even a family history of breast cancer.

We know that a special x-ray of the breasts called a "mammogram" can often detect a cancer 2 or 3 years before it is large enough to be felt as a lump. This "head start" in finding a problem can improve your chances of beating breast cancer. It makes sense to call for an appointment now when you have no lumps or breast problems.

Breast cancer screening services in New Brunswick have been established to provide the best quality mammogram in a comfortable setting. We can also provide you with important information on what you can do to promote breast health. Our goal is to reduce breast cancer deaths. You can take a positive step to decrease your own risk, and help us achieve our goal, by deciding to take part.

There is no charge for this service and a doctor's referral is not necessary. After your visit, you will receive a letter telling you the results of your mammogram. A report will also be sent to your family doctor or designated Health Center.

If you have not had a mammogram in the last year and have never had breast cancer, please phone the breast screening site in your area to make an appointment. To help us serve you better, please have your Medicare number ready when you phone.

Screening Sites:
(list of names/locations and phone numbers)

We hope to hear from you soon!
Sincerely,

QUALITY CONTROL TESTING AND MAMMOGRAPHIC EQUIPMENT STANDARDS

A documented quality control program with procedure manuals and logs shall be maintained and be available to all staff. The quality control program shall include the following tests as a minimum^{16-19,21-25}.

Radiation Technologist's Checks:Minimum Frequency

Darkroom Cleanliness	Daily
Processor Sensitometry	Daily
Screen Cleanliness	Weekly
Viewboxes and Viewing Conditions	Weekly
Image Quality with RMI 156 Phantom	Weekly
Visual Check List	Monthly
Screen Uniformity	Quarterly
Darkroom Fog Tests (non-daylight systems)	Semi-annually
Film/Screen Contact Evaluation	Semi-annually
Compression Assembly Evaluation	Semi-annually
Repeat Analysis Audit	Annually

Quality Assurance Technologist's/Clinical Engineer's Checks:

The following checks are to be completed semi-annually and after any servicing, with biennial audits conducted under the provincial radiation protection program. The performance criterion for each parameter is noted.

Parameter***Standard/Performance Criteria***

Mammographic Unit Assembly	all controls functioning normally
Grid	no lines
Radiation Output at 30 kVp, 60 cm	> 0.10 mGy/mAs
kVp Accuracy	± 1.0 kVp
kVp Reproducibility	± 0.5 kVp
mAs Linearity	± 10%
Half Value Layer (HVL) Measurement at 30 kVp	0.30 mm < HVL < 0.4 mm A1
Collimation/Beam Alignment	< 2 % of SID but ≤ 5 mm at chest wall
AEC kVp Compensation, Minimum Response Time & Backup Timer	± 10% O.D. over 25-30 kVp
AEC Object Thickness Compensation	± 10% O.D. over 2-6 cm
Image Quality with RMI 156 Phantom (minimum)	0.75 mm fibres 0.32 mm specks 0.75 mm mass
Irradiation Coefficient of Variation	5 %
Lucite Block Density	1.2 ± 0.1 O.D.
Breast Surface Dose	< 9 mSv
Average Glandular Dose	< 3 mSv per view

**LETTERS TO WOMEN AND THEIR PHYSICIANS OR DESIGNATED HEALTH CENTER -
FOR "NORMAL" RESULTS**

1. Letter to Family Physician or Designated Health Center (NORMAL RESULTS)

Dear -----:

New Brunswick Region Hospital Corporations provide screening mammograms to asymptomatic women aged 50-69. When a woman registers for her appointment; we ask for the name of the doctor or designated Health Center where we can send the report on the mammogram.

Recently, (insert woman's name) of (insert woman's address) attended for screening at our facility. She asked that we send the results of her mammogram to you.

The radiologist's review indicated that NO ABNORMALITIES were detected on the screening film. We have also sent a letter to (insert woman's name) to indicate this. We have suggested that she have a physical examination of the breasts as part of her comprehensive women's health care, and that she see you immediately if she notices any breast abnormalities before her next screening visit in two year's time.

As a clinical reminder, you are probably aware that about 10% of palpable breast cancers are not visible on mammograms. A NORMAL SCREENING MAMMOGRAM DOES NOT RULE OUT BREAST CANCER. Thus, if at any time your patient has a breast lump or other signs of possible breast cancer, further consultation and investigation would be warranted.

Sincerely,

2. Letter to Woman (NORMAL RESULTS)

Dear -----

Recently, you came to our breast cancer screening service for a mammogram (breast x-ray). I am pleased to inform you that your mammogram was found to be NORMAL.

Mammograms are the best method we have of detecting very small cancers, and so your normal result is very good news. It is important though, for you to know that mammograms are not foolproof, and should not be the only way you use to guard against breast cancer. We would recommend:

- 1) that you have a physical examination of your breasts as part of your comprehensive women's health care;**
- 2) that you examine your own breasts on a monthly basis (we have enclosed a brochure that discusses this); and**
- 3) that you return to the screening service in two years time for your regular mammogram.**

The breast screening service is designed to benefit women without present signs or symptoms of breast cancer. If you notice ANY abnormalities of your breasts, such as a new lump, now or before your next screening visit, you should contact your own doctor right away.

If you have any questions or comments about the screening service or your mammogram, please feel free to call us at (insert phone number). Also, please pass on information about us to women aged 50-69 who may benefit from our service.

We look forward to seeing you again.

Sincerely,

LETTERS TO WOMEN AND THEIR PHYSICIANS OR DESIGNATED HEALTH CENTER –
FOR "ABNORMAL" RESULTS AND "NEED FOR REPEAT EXAM"

1. Letter to Family Physician or Designated Health Center (ABNORMAL RESULTS)

Dear -----:

RE: ABNORMAL SCREENING MAMMOGRAM - FOLLOW-UP ACTION REQUIRED

New Brunswick Region Hospital Corporations provide screening mammograms to women aged 50-69. When a woman registers for her appointment, we ask for the name of the doctor or designated Health Center where we can send the report on the mammogram.

Recently, (insert woman's name) of (insert woman's address) attended for screening at our facility. She asked that we send the results of her mammogram to you.

The radiologist who examined her mammogram detected an ABNORMALITY. A copy of the report and the radiologist's comments are attached.

We will also now be sending a letter to (insert woman's name) to inform her that her mammogram results indicate that further tests are required. We will ask that she contact you as soon as possible for further discussion and follow-up. You may wish to contact her immediately to advise her of the results before she receives her results letter from us.

We will contact your office in 2 weeks time so that we may be sure you have received this woman's report and that her follow-up has begun. We will also be following-up in two months to ascertain the direction and outcome of the investigations. This information is critical for us to decide her further eligibility for screening, and to evaluate the screening service itself. Your assistance in this is most appreciated.

If you have any questions, please do not hesitate to contact me at (insert phone number).

Sincerely,

2. Letter to Woman (ABNORMAL RESULTS)

Dear -----

Recently, you came to our breast cancer screening service for a mammogram (breast x-ray).

Your mammogram was reviewed and an abnormality was found. While most abnormalities do not turn out to be breast cancer, they do mean that further tests are required.

Please make an appointment with Dr. (family physician's name) or Health Center to arrange for further examination. Your doctor or Health Center has been sent the results, including a copy of the radiologist's report.

I realize that this letter will concern you, so I hope that you will contact your doctor or Health Center in the near future for further follow-up. If you wish to discuss this letter further, please call me at (insert phone number).

Sincerely,

3. Letter to Woman (NEED FOR REPEAT EXAM)

Dear -----

Due to technical difficulties, we are unable to clearly interpret the recent mammogram (breast x-ray) you had at our site. We would like to request that you return for a repeat of ____ x-rays.

Please call at your earliest convenience to arrange for an appointment. Let the secretary know that you are calling for a repeat exam.

We sincerely apologize for the inconvenience and delay in having your mammogram interpreted.

Sincerely,

BREAST HISTORY AND SCREENING MAMMOGRAPHY REPORT

HISTORY

Outside Mammogram

Yes No Unknown

date of most recent: _____

where: _____

Current Estrogen Use: (e.g., premarin, climacteron)

Yes No

Breast Reduction Surgery

Yes No

date of surgery: _____

surgery to: Right Left

Breast Procedures:

Aspiration/needle biopsy

Biopsy – surgical

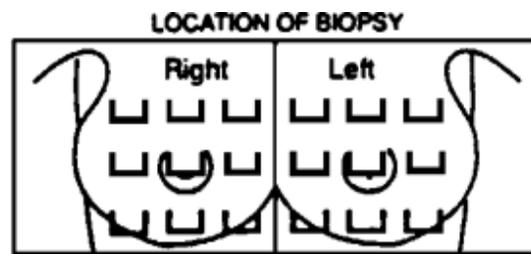
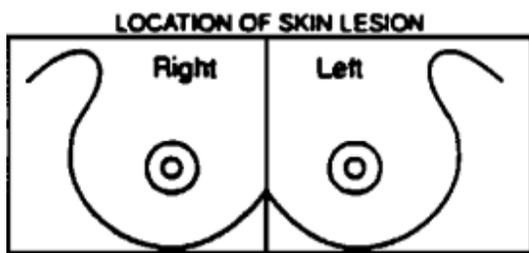
None

date of first biopsy: _____

date of most recent biopsy: _____

Presence of Breast Lump (patient reported)

Yes No



NUMBER OF MAMMOGRAPHIC VIEWS TAKEN: RIGHT _____ LEFT _____

Technologist Code: _____

SCREENING MAMMOGRAPHY REPORT

This screening mammogram was read by a radiologist.

Previous films were available for comparison 1 - DY <50%

2 - DY ≥50%

Results:

No significant abnormality; repeat screening mammography in 2 years

Requires diagnostic radiology workup

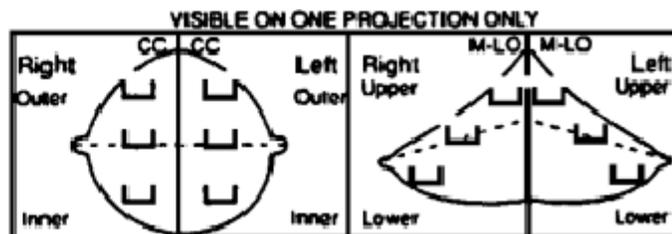
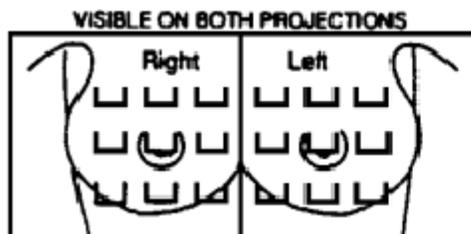
Requires repeat exam due to technical reasons

Recommendation:

First compare with previous films

Coned compression magnification views\

Ultrasound



COMMENTS: _____

Radiologist Code: _____

Phone GP with results

FOLLOW-UP ACTION REPORTS

Dear -----:

RE: FOLLOW-UP ACTION REPORT

Following an abnormal screening mammography report, the following patient was referred to you for coordination of follow-up and diagnosis. We would like to ascertain the outcome of this follow-up so that we are aware whether she is eligible for further screening visits. As well, this outcome information is critical in evaluating the effectiveness of our screening service. **Thank you very much for your assistance by returning this completed form in the enclosed postage prepaid envelope when her follow-up is complete.**

(insert woman's name, address and screening EXAM DATE)

Please complete the following if you examined this woman around the EXAM DATE shown above:

Date of exam: _____ YES NO
 Was physical breast exam performed?
 If YES, was there a palpable mass?
 was the mass suspicious for cancer?

FOLLOW-UP PROCEDURES Carried Out After EXAM DATE	Date & Place of Exam	TEST RESULT
Diagnostic Mammogram <input type="checkbox"/>	_____	malignant DCIS LCIS benign equivocal
Ultrasound <input type="checkbox"/>	_____	malignant DCIS LCIS benign equivocal
Surgical Consult <input type="checkbox"/>	_____	malignant DCIS LCIS benign equivocal
Fine Needle Aspiration <input type="checkbox"/>	_____	malignant DCIS LCIS benign equivocal
Core Biopsy <input type="checkbox"/>	_____	malignant DCIS LCIS benign equivocal
Open Biopsy with fine wire localization <input type="checkbox"/>	_____	malignant DCIS LCIS benign equivocal
Open Biopsy without fine wire localization <input type="checkbox"/>	_____	malignant DCIS LCIS benign equivocal
Other (please specify _____) <input type="checkbox"/>	_____	malignant DCIS LCIS benign equivocal
FINAL RESULTS OF FOLLOW-UP:		
<input type="checkbox"/> Malignant <input type="checkbox"/> DCIS <input type="checkbox"/> LCIS <input type="checkbox"/> Benign		

Any copies of reports you can provide would be greatly appreciated.
 Please provide any comments you may have on the back of this form.
 If there are further investigations, we would appreciate having you inform us.

RETURN IN THE ENCLOSED POSTAGE PREPAID ENVELOPE

REPORTING REQUIREMENTS

Specific data elements shall be captured to determine participation rates, monitor technical quality, evaluate service effectiveness, and assess results with respect to reducing morbidity and mortality from breast cancer. Potential data elements for the provincial data collection system are outlined below.

Reporting by Screening Site(s)/Region Corporation:

- number & percent of clients by age grouping (<50yrs; 50-59yrs; 60-69yrs; 70+yrs)
- profile and risk characteristics of participants (e.g., primary recruitment method, level of education, parity, age at first birth, gravidity, family history of breast cancer, menopausal status, estrogen use, hysterectomy, CBE and BSE practices, etc...)
- number & percent of screens "referred out" (abnormal rate) & follow-up status by age
- women referred for further/other tests by test type results by age (i.e., diagnostic mammogram, ultrasound, surgical consult, fine needle aspiration, core biopsy, open biopsy with fine wire localization, open biopsy with no fine wire localization, biopsy unspecified, other)
- screen-detected breast cancers by stage of disease and past screening habits by age
- cancer detection rates by screening interval (mammogram in previous 2 yrs versus no mammogram in previous 2 yrs; physical exam in previous 2 yrs versus no physical exam in previous 2 yrs)
- clients with interval breast cancers by screening results, age and interval since screening
- costs (per screening visit & per cancer detected)

Reporting by Provincial Epidemiologist and N.B. Provincial Cancer Registry:

- estimated number of target women in province by age (according to census data)
- provincial rates of breast cancers diagnosed among women by age at diagnosis
- size of cancers detected by age (<1cm; 1-2cm; 2-3cm; 3-4cm; >4cm; no size recorded)
- stage of cancers detected by age (both TNM and clinical staging)
- number & rates of female deaths due to breast cancers by age at death
- anticipated/standard cancer detection rates by age
- anticipated/standard "abnormal rates" (i.e., referred out from screening)
- anticipated/standard interval cancer rates in screening participants
- collation of all data to provide provincial status re measures reported regionally (above)
- cancer detection rates in nonparticipants by age

INTERNATIONAL STANDARDS FOR BREAST SCREENING

The following is a compilation of international standards/targets which have been established for many screening elements which quality breast screening services should be achieving/striving to achieve.

Criteria	Acceptable Standard	Achievable Standard
Uptake/Participation Rate of Eligible, Target Women ^{10,20,32}	70 % of invited women	75 %
Referred/Abnormality Rate ^{9,10,20,32}	10-14 %	5 % first round 3 % routine re-screen
Proportion of Women Undergoing Repeat Films (i.e., repeated exams) ³²	< 3 % of total examinations	< 2 % of total
Cancer Detection Rates in Eligible Women ^{9,10,20,32}	> 5/1000 first screen > 3.5/1000 re-screen	6/1000 first screen
Percentage of Cancers < 1.5 cm in Diameter Detected in Eligible, Screened Women ⁹	≥ 50 %	
Percentage of Node Negative Cancers Detected in Eligible, Screened Women ⁹	≥ 70 %	
Proportion of Screened Women that Undergo Biopsy ^{9,10,20}	< 1.5 %	
Malignant to Benign Biopsy Ratio ³²	1:1	1.5:1
Positive Predictive Value of Biopsy ³²	50 %	60 %
Benign Biopsy Rate ³²	< 5/1000 first screen < 3.5/1000 re-screen	< 4/1000 first screen
Interval Cancers in Screened Women ³²	≤ 3/1000 women screened	

GLOSSARY OF ABBREVIATIONS

AEC	-	automatic exposure control
AI	-	aluminum
BSE	-	breast self-examination
CAMRT	-	Canadian Association of Medical Radiation Technologists
CAR	-	Canadian Association of Radiologists
CBE	-	clinical breast examinations
CC	-	craniocaudal
cm	-	centimeter
DCIS	-	ductal carcinoma in situ
DY	-	fibroglandular tissue density
GP	-	general practitioner
HVL	-	half-value layer
kVp	-	kilovoltage, peak
LCIS	-	lobular carcinoma in situ
mAs	-	milliamperere-seconds
mGy	-	milligray
M-LO	-	medio-lateral oblique
mm	-	millimeters
mSv	-	millisievert
N.B.	-	New Brunswick
O.D.	-	Optical Density
P	-	permanently (as in permanently ineligible)
RMI	-	Radiation Measurements Incorporation
SID	-	source-to-image distance
TNM	-	an internationally recognized cancer staging system whereby "T" describes the extent/relative size of the tumour, "N" describes the involvement of the lymph nodes, and "M" describes the presence of metastases

APPENDIX B

New Brunswick Department of Health and Community Services (1994-5) *Internal communication on Breast Cancer Screening brochure.*

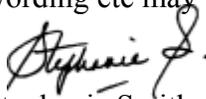
November 4, 1994			
Name and Title / Nom et titre	Department and Branch / Ministère et direction	Telephone/Téléphone	Reference / Référence
Kent Hovey-Smith			
Stephanie Smith	HPDP	453-2280	

Comments on draft pamphlet for breast cancer screening services

Thanks for inviting my comments on your latest draft.

I like the front much better on this version. I have scribbled my comments on the attached copy for your consideration. If you have any questions, please do not hesitate to contact me at work or at home (458-5878).

(I am attaching copies of the pamphlets I showed you last week that are used in other provinces as the wording etc may be of interest to you)


Stephanie Smith

Breast Cancer

Information for Women aged 50-69

Are you a woman
between the ages of 50
and 69

If you are, you are part of a group that has a high risk of breast cancer and you should have a breast examination once every two years. You can now have an examination at one of your local hospitals without a doctor making the appointment for you. Just call the number below and schedule a time for your examination.

If you are younger than 50 or older than 69, you can also have a breast examination at a local hospital, but you must see your family doctor first.

Please contact the
Cancer Screening Centre
nearest you:

Breast Cancer

Important Information for Women aged 50-69

If you are a woman between the ages of 50 and 69, you are part of a group that has a high risk of breast cancer. You should have a breast examination, once every two years. You can now have an examination at one of your local hospitals without a doctor making the appointment for you. Just call the number below and schedule a time for your examination. There is no charge for this service.

If you are younger than 50 or older than 69, you can also have a breast examination at a local hospital, but you must see your family doctor first.

As women get older, their chance of getting breast cancer becomes higher. In fact, growing older puts women at more risk than having a family history of breast cancer.

There is no way to prevent the disease. However, studies have shown that finding cancer early can improve a woman's chance of beating breast cancer. Breast cancer screening services like this one can find cancer very early, before it is even big enough to form a lump that you can feel.

So, if you are between the ages of 50 and 69, please contact your
Region Hospital
Corporation:

An
Important
Health
Message for
Women
aged 50-69

*Breast
Cancer
Screening*

**Are you a woman between the
ages of 50 and 69?**

- **If you are a woman between the ages of 50 and 69, you are at increased risk of breast cancer.**
- There is proof that regular breast screening examinations for women your age can help to find breast cancers early and improve chances of recovery.
- Provided you have no signs of possible breast cancer, **you should take part in breast cancer screening every 2 years.**
- New Brunswick region hospital corporations are now offering breast cancer screening services designed especially for you.
- Breast cancer screening services should include: a screening mammogram (breast x-ray), arrangements for an examination of your breasts by a health professional, and teaching of breast self-examination.
- You can take part in these services without a doctor making an appointment for you. Just call the phone number of the screening site in your area to schedule a time. There is no fee for this service.
- If you have any signs of possible breast cancer, such as a breast lump, please see your doctor right away.
- If you are younger than 50 or older than 69, please see your doctor to discuss what breast screening

If you are between the ages of 50 and 69, you are invited to contact the breast cancer screening site in your area.

(Or contact your local region hospital corporation for more information).

Smith, Stephanie

From: BREWER MARILYN @A1@DOH2
To: SMITH STEPHANIE
Cc: LAPLANTE ADELAIDE @A1@DOH2 ;SCOTT LOIS @A1@DOH2
Subject: Breast Screening Pamphlet
Date: Wednesday, February 22, 1995 9:17AM

Thank you for providing me with a copy of the revised draft. I realise that much thought has gone into the wording so far. Therefore, I assume that the parts to which I react have been purposely worded that way. However, for what it's worth:

In outlining the screening services, putting "should" before "include" leaves even the mammogram in doubt. The Standards to be met state that Screening Services "shall" include all 3 components in some way.

Suggest:

- deleting "should",
- following the standards a little more closely by:
 - listing "learning about" breast self-examination" 2nd (delete "teaching of");
 - referring to clin. breast exam. 3rd, delete "a" before "clinical Breast examination..." (I wish we could add "provision for", but it wouldn't pass the literacy test)

- I find the sentence about the "doctor" confusing. We all know that the "doctor" rarely 'makes an appointment', it's done by support staff. What we really mean is "without seeing/calling a doctor first" or "without a referral from a doctor".

I hope you can make sense of this. Let me know if there are questions.
"Bonne chance"!

		New Brunswick Nouveau Brunswick	Inter - Office Memo Note Interservices	
Date:				
Name and Title / Nom et titre		Department and Branch / Ministère et direction	Telephone/Téléphone	Reference / Référence
To: À:	Donna Boudreau	Communications		
From: De:	Stephanie Smith	HPDP	453-2280	
Copies Copies To: À:	Dr. Balram, Mary Scott			
Subject: Objet:	BCS Pamphlet - "Final Proof"			

I have reviewed the final proof of the BCS pamphlet provided on Wednesday and have shared it with a few others for comment. In general, **there is strong support for a number of changes before we could consider sharing it with the CCS-NB for their endorsement.** You will note that many of these "changes" were requested/outlined in my March 2nd memo and accompanying pamphlet that you have attached to this proof.

Some of these changes may seem minor and we realize timing is tight. However, we believe this exercise is important enough that a best-effort product is better than one that simply meets a deadline. An effective pamphlet can contribute to increased participation rates in this service-- an essential factor for successful outcomes. Thus, it is critical that the pamphlet be as well-designed as possible to encourage women 50-69 years to participate in breast screening.

I have summarized required changes and comments below. If you have any questions, please do not hesitate to call me. Furthermore, **I would be very willing to meet with the designer or whoever else to discuss our concerns and provide whatever insight/direction I can to help in the completion of a product that is agreeable to all.**

Requested Changes to Pamphlet:

1. Front panel requires redesign if it is to appeal to women in the intended age group (i.e., 50-69 years).
 - a) place opening text, "An Important Health Message...", at top of page so that it is visible if pamphlets are placed in a display stand
 - b) graphic is unacceptable for the intended target audience and service being promoted
 - it seems more suited to a marketing strategy for "alternative health services" for young women
 - it appears melancholy, gloomy, dark, ...
 - seems disproportionately small/unbalanced with rest of panel
 - c) use font styles that are more rounded/curved/feminine
 - "Breast Cancer Screening" text is too chunky, square and letters are not readily distinguishable. Font style should be easy to read by people with lower literacy levels.
 - font style of opening text, "An Important Health Message...", may be ok but seems cramped (increase width to height ratio)

2. Wording & Use of Attributes

- a) in first bullet, "greater chance" has been replaced by "higher risk"; "greater chance" was used as it was felt to convey the same meaning and perhaps be more readily understood by the public in general (i.e., lower literacy level)?
- b) all bolding has been removed; bolding was intended to emphasize the most important elements and is preferable (as per sample provided March 2nd).
- c) if we are going to use a second color in the actual body of the pamphlet, would it be more appealing/colorful to use it for each bullet rather than for the check marks (as the check marks alone help these points stand out)?

3. Space Allotted for Region Stamp/Phone Numbers of Screening Sites: original format whereby space is clearly indicated for stamping or otherwise imprinting phone number(s) is preferred; inviting women to call for an appointment is the critical message in this pamphlet and original version reinforces that with the special focus at the end of pamphlet as well.

4. Layout

- a) the "dead space" at the top of pages 2 and 3 does not seem inherently useful. If not essential, text could be enlarged and/or spaced out more.
- b) otherwise, if we need something moving across the panels, something more flowing/rounded/feminine would be preferred over the "diamonds" presently used.





June 6, 1995

Le 6 juin 1995

M. Pierre J. LeBouthillier
Corporation Hospitalière de la
Région 1 (Beauséjour)
330, rue Archibald
Moncton, N.-B.
E1C 2Z3

Dear M. LeBouthillier:

**RE: Breast Cancer Screening
Promotional Pamphlet**

In accordance with the Breast Cancer Screening Standards document, the Department of Health and Community Services has developed a brochure aimed at encouraging women between the ages of 50 and 69 to participate in breast screening services.

An initial draft of this pamphlet was forwarded to you in January. The final version is now complete and copies for use in your region will soon be shipped to you directly from the printer. (Original shipment quantities were determined based on target group populations and estimated volumes over the remainder of the fiscal year).

You may recall the original intent to include the phone numbers of screening sites on this pamphlet. However,

Cher Monsieur,

**Objet: Brochure de promotion
des services de dépistage du
cancer du sein**

Conformément au document contenant les normes relatives au services de dépistage du cancer du sein, le ministère de la Santé et des Services communautaires a préparé une brochure visant à encourager les femmes âgées entre 50 et 69 ans à participer au dépistage du cancer du sein.

En janvier, on vous a envoyé une première ébauche de cette brochure. La version finale est maintenant terminée et des exemplaires qui pourront être distribués dans votre région vous seront envoyés directement de l'imprimerie. (On s'est basé sur le groupe cible et sur une estimation du nombre d'exemplaires nécessaires pour le reste de l'exercice pour déterminer la quantité de brochures à vous expédier).

Vous vous souvenez peut-être qu'au départ, on avait l'intention d'indiquer dans la brochure le numéro de

P.O. Box 5100
Fredericton
New Brunswick
Canada E3B 5G8

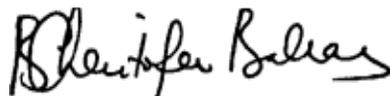
Case postale 5100
Fredericton
Nouveau-Brunswick
Canada E3B 5G8

because many sites were not yet confirmed and given the anticipated variation in start-up dates, this area on the pamphlet has been left blank; you may stamp regional information in this space. As well, we are pleased that the Canadian Cancer Society-New Brunswick Division has visibly endorsed this brochure by allowing us to include its logo on the front panel.

Pamphlets will be re-ordered near the beginning of the next fiscal year and we will be contacting you prior to that time to confirm required quantities.

We are very pleased with this final product and trust that it will be a valuable recruitment resource. If you have any questions about this matter, please do not hesitate to contact me at 453-3092.

Sincerely,



Dr. B. Christofer Balram
Director of Health Promotion and Disease Prevention and Provincial Epidemiologist /
Le directeur de la Promotion de la Santé et de la Prévention des maladies et
l'Épidémiologiste provincial

CC: Wally Waller, Executive Director, Hospital Services /
directeur général des Services hospitaliers; et
Lynn Ann Duffley, Director of Education Canadian Cancer
Society-New Brunswick Division / directrice de
l'éducation Société canadienne du cancer - Division du Nouveau-Brunswick

téléphone des établissements où seraient offerts les services de dépistage. Cependant, puisque les corporations hospitalières n'ont pas encore confirmé la participation de tous ces établissements et que les dates de mise en place varient selon les établissements, l'espace où l'on aurait dû insérer ces numéros a été laissé vide. Vous pouvez donc y ajouter des renseignements pour votre région. Par ailleurs, nous sommes heureux de vous annoncer que la Société canadienne du cancer - Division du Nouveau-Brunswick a appuyé notre initiative en nous donnant la permission d'utiliser son logo sur la couverture de la brochure.

On commandera d'autres brochures vers le début du prochain exercice. Nous communiquerons avec vous avant de placer la commande pour que vous puissiez confirmer la quantité nécessaire.

Nous sommes très heureux du produit final et avons bon espoir qu'il s'avérera un outil de recrutement précieux. Si vous avez des questions à ce sujet, n'hésitez pas à me téléphoner au 453-3092.

Je vous prie d'agréer, Monsieur, l'expression de mes sentiments les meilleurs.

APPENDIX C



Breast Cancer Screening



New Brunswick
Health and
Community Services

- **If you are a woman between the ages of 50 and 69, you have a higher risk of getting breast cancer.**
- There is proof that regular breast cancer screening examinations for women your age can help find breast cancers early and improve chances of recovery.
- As long as you have no signs of breast cancer, **you should take part in breast cancer screening every two years.** If you have any possible signs of breast cancer, please see your doctor right away. Signs might include a breast lump, puckery skin, a nipple discharge or a rash.
- Region hospital corporations now offer breast cancer screening services for you.
- Breast cancer screening services include:
 - ✓ a screening mammogram (breast x-ray)
 - ✓ clinical breast examination by a health professional
 - ✓ learning about breast self-examination
- You can take part in these services without seeing a doctor first. Just call the screening site in your area to schedule a time for your examination. There is no fee for this service.
- If you are younger than 50 or older than 69, please talk to your doctor to find out what breast screening methods would be best for you. This is especially important if you have a family history of breast cancer.

If you are between the ages of 50 and 69, you are invited to contact the breast cancer screening site in your area.

Or contact your local region hospital corporation for more information.

APPENDIX D

Letters of invitation for the New Brunswick Breast Cancer Screening program, Region 2 (2) and Region 6

Breast Screening Program / Programme De Depistage Du Sein
130 rue Bayard Drive
Saint John, N.B./N.-B.
E2L 3L6

INVITATION

NAME
ADDRESS1
ADDRESS2
ADDRESS3
POSTAL

You are invited to participate in the breast screening service for New Brunswick women between 50 and 69 years of age. This service is offered by Region Hospital Corporations to help increase the early detection of breast cancer.

In New Brunswick, breast cancer is the most common cancer for women and the second cause of women's cancer deaths. As a woman, your risk for breast cancer increases with age; in fact, aging is a much stronger risk factor than even a family history of breast cancer.

We know that a special x-ray of the breasts called "*mammogram*" can often detect a cancer 2 or 3 years before it is large enough to be felt as a lump. This "head start" in finding a problem can improve your chances of surviving breast cancer. It makes sense to call for an appointment now when you have no lumps or breast problems.

Breast screening services in New Brunswick have been established to provide the best quality mammogram in a comfortable setting. We can also provide you with important information on what you can do to promote breast health. Our goal is to reduce cancer deaths. You can take a positive step to decrease your own risk and help us achieve our goal, by deciding to take part.

There is no charge for this service and a physician's referral is not necessary although we encourage you to make an appointment with your family physician in order to have a breast examination prior to the screening mammogram. If you do not have a family physician, you may call the Centre where a list of physicians is available. After your visit, you will receive a letter telling you the results of your mammogram. A report will also be sent to your family physician.

If you have not had a mammogram in the last year and have never had breast cancer, please phone the breast screening site in your area to make an appointment. To help us serve you better, please have your Medicare number ready when you phone.

In Region 2, the screening sites are:

Charlotte County Hospital	St. Stephen, N.B.	1-506-466-7450
St. Joseph's Hospital	Saint John, N.B.	1-506-632-5566
Sussex Health Centre	Sussex, N.B.	1-506-432-3320

We hope to hear from you soon.
Sincerely,

Barbara McGill
Vice-President - Nursing & Patient Care Development for Region 2 Breast Screening Program
Region 2 Hospital Corporation / Corporation hospitalière de la Region 2



Atlantic Health Sciences Corporation
Corporation des sciences de la sante
de l'Atlantique



Breast Screening Program * 130 Bayard Drive * Saint John, N. B. * E2L 3L6

INVITATION

NAME
ADDRESS 1
ADDRESS 2
ADDRESS 3
POSTAL

Breast Cancer is a leading cause of death in women between the ages of 50 and 69. Since you fall into this age group, you are invited to take part in the "Provincial Breast Screening Program".

This program is designed to help in **the early detection of cancer** of the breast. By detecting cancer earlier, we will help lower the number of women who die every year from this disease.

The program consists of a special X-ray called a **Mammogram** as well as **education** on how to examine your breasts and general information on breast health. Plan on spending about one hour with us. You should also have a **breast exam done by your doctor** every year and we ask that you have this done before your appointment with us. A pamphlet describing the program has been included for your information.

This is a free service and no doctor's referral is necessary. Please call the screening site nearest you and have your **Medicare card** ready when you call. We ask that you do not wear any deodorant or powder to your appointment.

Traditionally, women have not been comfortable talking about breast health. Please don't let this fear stop you from calling. **Act now!!**

The screening sites are:

Charlotte County Hospital - St. Stephen, N. B. 1-506-465-4450

St. Joseph's Hospital - Saint John, N. B. 1-506-632-5566

Sussex Health Centre - Sussex, N. B. 1-506-432-3229

We hope to hear from you soon.

Sincerely,

Breast Screening Program
Atlantic Health Sciences Corporation

Dear Madam:

Breast cancer is the leading cause of death in women between the ages of 50 and 69. Since you fall into this age group, you are invited to take part in the "Breast Cancer Screening" program in our region.

This "Breast Cancer Screening" program is especially designed to help in the **early detection** of cancer of the breast. By detecting cancer earlier, we will help reduce the number of women who die every year from this disease.

The program consists of a special x-ray called a "mammogram", as well as education on how to do a breast self-examination and general information on breast health. A pamphlet describing the program has been included for your information.

This is a free service and no doctor's referral is necessary. Simply call **1-800-727-1699** or **726-2194**. Our secretaries, Estelle and Patsy, will be happy to arrange an appointment for you at the screening hospital nearest you. Please have your **Medicare Card** ready when you call.

Traditionally, women have not been comfortable talking about breast health. Please don't let this fear stop you from calling. Act now!!

Sincerely,



Silvana Bosca.
Program Director

Encl.

(Please See Reverse)

**Centre hospitalier
de Lamèque**

Lamèque (Nouveau Brunswick)
E0B 1V0
Tél.: (506) 344-2281
Télec.: (506) 344-3403

**Centre hospitalier
de l'Enfant-Jésus RHSJ**

1 boulevard St-Pierre ouest
Caraquet (Nouveau-Brunswick)
E1W 1B6
Tél.: (506) 727-3435
Télec.: (506) 726-2188

**Centre hospitalier
de Tracadie**

400, rue des Hospitalières
C.P. 3180, Succ. Burreau chef
Tracadie-Sheila (Nouveau-Brunswick)
E1X 1G5
Tél.: (506) 395-3381
Télec.: (506) 395-0216

**Centre hospitalier régional
Regional Hospital Centre**

1750, promenade Sunset Drive
Bathurst, NB
E2A 4L7
Tél./Tél.: (506) 548-8961
Télec./Fax.: (506) 545-2440

**Centre de santé de Miscou
Miscou Health Centre**

Miscou (Nouveau Brunswick)
E0B 1Y0
Tél.: (506) 344-5590

**Centre de santé Chaleur
Chaleur Health Centre**

382 Principale
C.P./P.O. Box 238
Point-Verte, NB
E0B 2H0
Tél./Tél.: (506) 783-4292
Tél./Fax.: (508) 783-8623

**Centre de santé
de Paquetville**

1098 du Parc
C.P. 130
Paquetville (Nouveau-Brunswick)
E0B 2B0
Tél.: (506) 764-2424
Télec.: (506) 764-1103

APPENDIX E



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THE RESEARCH BRIEF

The Topic Area

The dissertation will focus on, as the title says, "Communicating to Illiterate Populations." Simply put, it is an examination of the problem of how to successfully communicate a message to someone who does not read and write.

It is important to point out that the term "illiterate" is not used by many in the field of literacy, as it is often used to describe a large group within which various literacy skill levels exist. However, for the purposes of this dissertation, the term will be used to describe those to whom it would be applied to by people outside the field of literacy. The 1995 International Adult Literacy Survey of seven countries used a scale of one to five. For the purposes of this dissertation, the first two levels of that scale will be termed "illiterate." These two levels are typified by people who have "serious difficulty dealing with printed materials" and those who "can deal only with material that is simple and clearly laid out" (Highlights, 1995).

Market research drives most communication efforts. Few professional communicators work in ignorance of the characteristics of their target markets. However, research indicates that consideration is rarely given to communicating to illiterate portions of populations, despite the results of the 1994 International Adult Literacy Survey of 7 countries, which confirmed earlier studies in finding that about 30% of the population of industrialised countries is illiterate.

Generally, communications efforts are conducted with an assumption that the receiver can read and write. This is not a problem if the source is, for example, a company selling airplanes, as someone in the market for a new airplane almost certainly can read and write, or is highly adapted to his or her state of having low literacy skills. This dissertation will examine a case in which it is important to reach all members of a public, which includes a significant percentage that can be classified illiterate. The case is the breast cancer screening program undertaken by the Department of Health and Community Services in the Canadian province of New Brunswick.

The breast cancer screening program began in 1994 and the author of the dissertation, while on his MARPE work placement, was involved in the initial stages of the formulation of the communications plan. The author researched the target market for the program - 50 to 69 year old women in the province of New Brunswick. The author discovered that although specific statistics did not exist, there was evidence to suggest with certainty that the majority of the target group was illiterate. This information was not factored into the development of the communications plan, despite the author's input.

Aims

The dissertation will examine the question of how to successfully communicate to illiterate populations.

The author's perspective on the topic of this dissertation is the following: if one has the responsibility of communicating effectively to all members of a public that includes illiterate people, how can this be done effectively?

The primary research for the dissertation is the case of the attempt by the Department of Health and Community Services in New Brunswick to communicate with a target group that is largely illiterate. Through application of theory, the author analysed this attempt to communicate with a public composed of a significant percentage of illiterate people to judge the attempt, examining its strengths and weaknesses, and provide information on how to undertake such a task successfully.

Finally, the author offers a conclusion on the best means to approach this communications challenge and recommendations for further research.

Research Methods

Ontologically, a literature review of applicable theory and case information and the details of the specific case used can be studied. Epistemologically, the relationship between researcher and the subject is close, with the author having played a part in the case under study. Therefore, the research paradigm follows more closely the naturalist approach in that the process of the case has determined action taken by the author. Statistics are used to inform the process, but there is interaction with the subject. The following research methods reflect this.

The primary research was conducted through interviews, conversations and meetings. Primary data source research was conducted through gathering materials from the author's workplace (which became his former workplace during the course of the research) and from related workplaces.

Secondary research took the form of topic searches on data bases and computer networks and academic texts. The New Brunswick Statistics Agency and the Canadian federal government body Statistics Canada provided statistics.

A lack of academic attention has been paid to problem of communicating to illiterate populations. Despite an effort to locate academic analysis of the problem, little was found. Therefore, materials used by and interviews with those facing the problem directly such as those in the New Brunswick Department of Health and Community Services and regional health corporations and those working in community centres provided most of the insight gained in the research of this communications problem.

Statistics on literacy rates were provided by Statistics Canada, the federal government office responsible for demographic and other statistics in Canada. Specifically, the International Adult Literacy Survey of 1994, the most comprehensive international study of literacy rates ever completed, which was co-ordinated partly by Statistics Canada, was used. For this survey, a large sample of adults, ranging from 1500 to 8000 per country, was surveyed. The survey data are based on samples of individuals and are subject to sampling error. Also, the data are based on different combinations of test items administered to sampled individuals, which causes some imprecision in the estimation of ability. This should also be taken into account in determining if observed differences are statistically significant. The International Adult Literacy Survey was the subject of an independent quality review; the reviewers unanimously recommended publication of the report (Literacy, Economy...1995).

Specifics for the target demographic of the case study were provided by Jean J.R. Pignal of Statistics Canada. For some of these, the user is advised that the specific statistics do not meet Statistics Canada's quality standards for this statistical program. Conclusions based on these data will be unreliable, and most likely invalid (Pignal, 1997).

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