

AN EVALUATION OF THE MED QUEST PROGRAM:
A RECRUITMENT EFFORT BY THE FACULTY OF MEDICINE

CENTRE FOR NEWFOUNDLAND STUDIES

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FRANCES DOROTHY KIRBY



AN EVALUATION OF THE MED QUEST PROGRAM:
A RECRUITMENT EFFORT BY THE FACULTY OF MEDICINE

BY

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A Project submitted to the School of Graduate Studies
in partial fulfilment of the
requirements for the degree of
Master of Education

Faculty of Education
Memorial University of Newfoundland

1992



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ISBN 0-315-78083-5

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ABSTRACT

This study examined the evaluation of the 1991 Med Quest program of the Faculty of Medicine, Memorial University of Newfoundland, to determine if the objectives of the program are being met. The following areas of the Med Quest program were studied: (1) influence on students' selection of science courses; (2) influence of students' selection of a health career; and (3) an investigation of whether there has been a change in students' perceptions of ability to attain a health career.

The population sample used was 243 participants who attended the program during the summers of 1990 and 1991. Through questionnaire analysis, frequency tables were generated and the results interpreted, which led to a number of conclusions. Firstly, Med Quest was affecting the career choice of 87.4% of the respondents mainly by broadening the health science career choices that are available and attainable for students. Secondly, it was evident that Med Quest has provided encouragement for the participants to take science courses in high school and post secondary school, and the majority are pursuing this direction. Thirdly, students believe that they are capable of becoming a health professional because of their exposure to Med Quest.

Overall, the 1991 program was a success as 125 high school students had an educational experience that has influenced their career choice, their outlook on future study, and on their perception of being able to attain a health career.

ACKNOWLEDGEMENTS

Great appreciation is extended to my project supervisor, Dr. George A. Hickman for providing guidance and encouragement while sharing his expertise. A word of thanks is extended to Dr. Dennis Treslan and Dr. Chester Michalski for their advice and encouragement. Appreciation is also extended to Ms. Michelle Shapter for providing computer assistance in the analyses of data.

The researcher would like to thank medical students Ms. Kim Butt and Mr. Jeff Cole and their advisors Dr. Doreen Neville and Dr. Jorge Segovia, for their assistance in the design of the questionnaires used in this study and for access to data from the 1990 Med Quest program evaluation.

Thanks are also extended to Dr. David Hawkins, Dean of Medicine, and the Faculty of Medicine itself for giving the researcher the opportunity to expand her horizons in the field of educational administration and for making the resources available to bring ideas to reality. Appreciation is also expressed to the 243 students who participated in the Med Quest program and the evaluation of the same.

Finally, deepest appreciation and gratitude is reserved for husband, Doug Kirby, for his tremendous patience, encouragement, and support throughout.

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CHAPTER 1

INTRODUCTION

McDonald (1990) claims that the changing profile of rural practice in Saskatchewan is due not only to the increase in the age of the rural population brought on by urbanization, but also to the changing role of rural hospitals in the provincial health care system. Increasing expectations of the provincial licensing body, as to the standards of care provided in rural hospitals, have reduced significantly the amount and type of services that are currently provided. For those physicians previously attracted to rural practice, such changes resulted in many of them moving to larger centers or leaving the province. This has reduced the number of physicians in rural practice and has, in turn, negatively affected physician recruitment, especially that of the graduates of our medical school.

Saskatchewan is one of many Canadian provinces, including Newfoundland and Labrador, facing the problems of recruiting physicians and health professionals for rural areas. McDonald (1990) appropriately states that "all Canadian medical schools are exploring a variety of incentives that will attract rural students into medicine and eventually into rural practice." (p. 92) Therefore, based on a need for health professionals in rural communities in Newfoundland and Labrador, recruitment efforts are being made at the high school level to promote medicine and other health professions as realistic careers for any student to follow. Students must be aware of

the careers available and have this information communicated to them in a positive manner.

It is apparent that only a few students believe and are told they should think about pursuing medical school or other health careers. This could be by a parent, guidance counsellor or peer. But what about those individuals who have a low self-concept or are told they are not smart enough to attain such a high goal? These students must be encouraged, since positive influences may not be in their homes or schools. In an attempt to broaden rural students' career choice and provide encouragement for study in a health field, a variety of programs for high school students have been developed and implemented.

The issue of recruiting minority applicants or applicants from rural areas to pursue a health profession and practise in a rural area following training is not isolated to Newfoundland, but is a national problem that is presently being addressed by most schools and health organizations. One recruitment effort developed by the Faculty of Medicine at Memorial University of Newfoundland is known as the Med Quest Program. This summer program provides an opportunity for 120 rural high school students to travel to the campus of Memorial University in St. John's, Newfoundland and learn about different health professions that are available through post secondary education while experiencing university life first hand. Perhaps the most important aspect of this program is the students' contact with health professionals in the work place, such as a hospital. The effects of the Med Quest

program will not be known for several years since the grade range of those attending the program is nine through twelve. Since Med Quest began in 1990, some of these graduates have already completed first year university. This study involved an evaluation of the 1991 Med Quest program in order to determine if the program is meeting certain objectives and, in essence, having a positive effect on the career choice of the students attending. To provide support for this study, the results of a Follow-up Questionnaire of the 1990 participants were also analyzed.

Statement of the Problem

One of the trends identified by health profession schools is that the admission of students from rural areas is lower than that of urban areas. Table 1 shows the Newfoundland applicants and acceptances for the Faculty of Medicine by urban and rural areas. For the years 1988 through 1991 the number of those admitted is lower for rural students than for urban students. The percentage of the class make-up by urban and rural areas clearly indicates that the majority of the class consists of urban students.

Med Quest is a recruitment effort sponsored by the Faculty of Medicine to increase the applicant pool of students from rural areas. This study examined the following areas of the Med Quest program relating to admission of rural students to

post-secondary education and health schools:

- (1) the program's influence on students' selection of courses in general, and science in particular, so that students will be in a better position to enter the school of their choice.
- (2) the program's influence on students' selection of a career (health related or other profession).
- (3) the program's influence on students' selection of a particular health career.
- (4) to investigate whether there has been a change in the students' perceptions of ability to attain a health career.

TABLE 1
NEWFOUNDLAND APPLICANTS AND ACCEPTANCES
BY URBAN AND RURAL AREAS
FACULTY OF MEDICINE

YEAR	APPLICANTS			ACCEPTANCES			% OF CLASS			N
	URBAN	RURAL	OTHER	URBAN	RURAL	OTHER	URBAN	RURAL	OTHER	
1988				36	7	0	84	16	0	43
1989				29	12	0	71	29	0	41
1990	89	61	22	24	13	4	59	32	9	41
				26%	21%	18%				
1991	90	60	13	28	10	2	70	25	5	40
				31%	16%	15%				

- Notes: (1) Data on applicants for 1988 and 1989 are not available.
- (2) Percentage of acceptances over applicants by area is provided for 1990 and 1991.
- (3) Urban refers to communities having a population greater than 5,000.
Rural refers to communities having a population of 5,000 or less
Other refers to Nfld applicants who apply from outside of Nfld and from outside of Canada.

Rationale for the Study

It has long been contended that students living in rural communities do not have the same educational and career opportunities as students living in urban areas. Rural students do not always have access to medical literature and may not have traditional health professionals living in their area who can act as role models. Rural students may lack financial resources to make periodic trips to urban centres or even to attend post-secondary institutions. Apart from a lack of access, role models (scientists or health professionals), and financial resources there can be a lack of adequate career counselling (from home or school) and possibly the encouragement to pursue a health career. (McDonald, 1990, p.91)

During the past three years there has been more attention focused on our province's rural areas with respect to:

(1) Health Care

- Cottage hospitals closing.
- Centralization of resources.
- Closing of beds.
- Public pressure of government to maintain appropriate health care.

(2) Recruitment of Health Personnel

- High turnover.
- External recruiters for local graduates.
- Low income and longer hours in comparison to urban centres.
- Isolation.
- Lack of resources (financial and technical).
- Long term recruitment planning (i.e. medicine, occupational therapy).

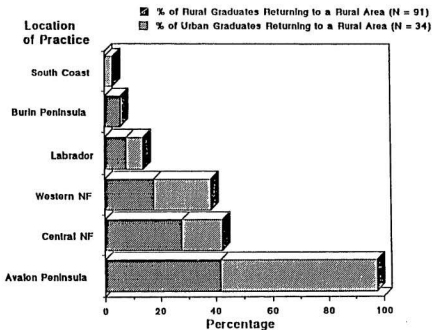
The health profession schools at Memorial University of Newfoundland are concerned about their ability to retain their graduates within the province. The Department of Health is also concerned about increasing health personnel, and a more stable workforce, in our rural areas and are exploring the possibility of providing medical students with grants to go through school, with a return of service in rural areas.

Hospital boards must offer many incentives to foreign physicians, just to encourage someone to practice in rural Newfoundland. Should there be more attention focused on our rural youth and an investment placed in their future and that of the community? Once rural youth are encouraged to train for a health profession, they may eventually go back to a rural area and provide a service. This is long-term goal and up to now there has been little investment placed in our youth or funding allocated towards addressing this issue.

The health schools of Memorial University of Newfoundland, particularly the Faculty of Medicine, must begin looking to our rural high school population and encourage these students to pursue a health career. It is believed that individuals who come from rural communities are more likely to return to such areas than those individuals from urban centres. This can be attributed to the following reasons: individuals from rural areas are familiar with the lifestyle and environment in a rural area and like the lifestyle; a small community is like an extended family and can provide the support a physician/spouse may require; and the patient base in a rural community is more readily available than in an urban area. This point is emphasized in Figure 1 when one examines the number of graduates (987 in total) from the Faculty of Medicine at Memorial University of Newfoundland who have returned to a rural area of the province. The number of graduates from rural areas who returned to a rural area is 91, with 41.7% practising in the Avalon Peninsula area, 27.5% in Central Newfoundland, 17.6% in Western Newfoundland, 7.7% in Labrador and 5.5% in the Burin Peninsula Area. The number of graduates from urban areas (St. John's) who practised in a rural area is 34, with 55.9% practising in the Avalon Peninsula area, 20.6% in Western Newfoundland, 14.7% in Central Newfoundland, 5.9% in Labrador and 1% along the South Coast. The number of graduates, both urban and rural, is spread out across the province but have mainly stayed in communities having a population greater than 5,000. The number of graduates from rural areas tended to venture further than the Avalon Peninsula which indicates

greater willingness to go to more remote parts of the province. Therefore, a recruitment effort that encourages rural youth to pursue a health field could begin to replenish our rural areas with health professionals within a five to ten year period. Crandell, Dwyer, and Duncan (1990) advocate that recruitment programs will have an optimum impact on recruitment for rural practice only if they begin by promoting health profession careers among rural high school students and continue by supporting, culturally and financially, the premedical and medical education of rural persons. (p. 35) Students will be then better prepared to compete for entrance to a health school and undertake a health science program.

Figure 1. Location of Practice of Medical School Graduates (N=987)



Definitions of Terms

Rural

Rural is defined as communities having a population less than 5000. (Tally, 1990)

As a criterion for the Med Quest program, rural is regarded as any area in Newfoundland and Labrador with the exception of St. John's and Mount Pearl.

The Department of Health, Provincial Government of Newfoundland and Labrador uses the same definition as Tally (1990).

Underrepresented Minority

An ethnic or racial group whose proportion of physicians is less than its proportion of the population. (Petersdorf, Turner, Nickens, and Ready, 1990)

Limitations

The following limitations were recognized as being inherent in the present study:

- (1) Participants may have had difficulty responding to certain questions that appeared ambiguous.
- (2) The Med Quest program has only operated for one summer and, as a result, it is difficult to assess the ultimate effectiveness of the program in recruiting medical professionals to rural areas.
- (3) Based on the assumption that students raised in rural areas will be more likely to return to a rural area upon graduation, this study concentrated on the effect of the Med Quest program on the decisions of students regarding course choices, career selection and attitudes towards health care professions.

Delimitations

The following delimitations are acknowledged in the study:

- (1) This study was limited to participants of the 1990 and 1991 Med Quest program who had completed Grade 9, Level I, Level II or Level III and in some cases, first year university.
- (2) This study was limited to those participants who were randomly selected to avoid bias. This was to ensure that participants would be from most areas of the province and students would vary in their level of achievement and motivation.

CHAPTER 2

REVIEW OF RELATED LITERATURE

McDonald (1990), Dean of the College of Medicine, University of Saskatchewan, claims that one of goals of that College of Medicine is to provide a source of medical manpower for a predominantly rural province. Saskatchewan is quite similar to Newfoundland since a significant proportion of the aging population will remain in the rural areas and will require health care services. With the reduction in vitality of small towns, it is becoming increasingly difficult to recruit and retain physicians. Simply put, rural physicians find rural practice unattractive.

McDonald (1990) suggests further that all Canadian medical schools are exploring a variety of incentives to attract rural students into medicine and eventually into rural practice. Since rural students are more likely to go into rural practice, it is essential to enhance opportunities for these students to seek a career in medicine. One strategy that the University of Saskatchewan is implementing is early sensitization of high school students to careers in medicine.

To study a specific rural group, attention is focused on the native population. Gilmore (1990) indicates that there are about 17 native doctors in Canada. One primary reason for the lack of native health care professionals is inadequate secondary school preparation. Whether educated in reserve schools or in urban settings, natives are routinely directed into shop and technical training, not the

science and mathematics courses needed to prepare for university. This streaming, coupled with a perspective that places scientific training far down the list of basic values, means there is little or no preparation for university training and a disproportionate drop-out rate among native students. One of the native physicians that Gilmore (1990) interviewed said that he participates in career days and made the following statement: "The children see native lawyers, teachers, and doctors and say to themselves, 'Yes, it is possible'." (p. 54) Canada's MDs work individually to encourage students to seek out careers in the health professions. They support the effort of Canadian universities to increase the access of native students to health care education, but fear that changes in the level of funding will slow future development.

At a rural health symposium, *RURAL AMERICA : A CHALLENGE FOR MEDICAL EDUCATION* (Feb 1-3, 1990), McDonald spoke of difficulties in recruiting Canadian students from rural areas - even the sons and daughters of rural physicians - and suggested the need for counselling sessions at the eighth- and ninth-grade levels.

Wilson (1990) of the University of Kentucky observed: "There is a preselection bias against students from underserved areas and from rural areas." (p. 114) He noted that students from these areas may not have had courses and activities comparable to those of urban graduates, and they may not perform well on standardized tests.

Medicine-Related Programs

Butler et al. (1991) indicated that medical schools have not graduated sufficient numbers of minority physicians and physicians willing to practice in rural areas. Medical schools have begun to expand their enrollment of students from underrepresented minorities - to address the national need for health care for minority populations, whose care, some believe, is best provided by minority health professionals. (p. 310)

Jones and Flowers (1990) state that one step toward improving care for underserved populations is increasing the number of physicians from minority groups who are likely to be more sensitive to the cultural and economic facets of their communities. Evidence shows that minority physicians are more likely than their majority counterparts to make a commitment to serving these populations.

The Associated Medical Schools of New York (AMS), a consortium of 13 public and private medical schools, has established a multifaceted, statewide effort aimed at increasing the pool of qualified minority applicants. The programs include academic enrichment for minority high school students interested in medicine, recruitment conferences, and establishing a state program to increase financial assistance to economically disadvantaged students.

The Pre-College Research and Education Program (PREP), supported by charitable donations, provided high school students from minority groups with

summer and academic-year enrichment programs, which were conducted for about 10 years at Mount Sinai School of Medicine and Columbia University College of Physicians and Surgeons. A new state precollege program, known as the Science and Technology Entry Program (STEP), focused on seventh through twelfth graders who were black, hispanic, native American, or economically disadvantaged and who were interested in careers in the scientific and technical fields, including medicine. In general, the STEP curriculum and activities are designed to motivate students, to increase awareness of medical and health-related professions, and to enhance academic skills through basic sciences and mathematics courses, computer courses, tutorial assistance, and personal and career counselling. The STEP program is operated during the summer (5 days a week) and during the academic year (after school and on Saturdays). It should be noted that voluntary time provided by medical school faculty is a vital component of the programs. A total of 198 of the 258 STEP graduates were surveyed to determine their level of interest in medicine, and 140 students, or 71%, indicated they had selected a premedical major. (Jones and Flowers, 1990, p. 673)

Two other successful programs are presented by Petersdorf et al. (1990): Xavier University and Baylor College of Medicine. Xavier University, a historically black college, has established an institutional goal of attracting more of its students to concentrate on mathematics and science. At Xavier, 47% of its students graduate with mathematics and science degrees. This makes Xavier an excellent source of

future minority physicians, dentists, and other health professionals. Xavier has established active liaisons with local junior and senior high schools; among other activities, faculty members perform science - related magic shows at these schools. For a decade Xavier has hosted a sequence of summer programs for ninth through twelfth graders who might otherwise be ill-prepared for the rigors of college-level mathematics and science.

The Baylor College of Medicine is involved in an extraordinary number of collaborative education projects from the elementary school level through graduate education. The purpose of these activities is to address the quality of science education at the local level and to enhance opportunities for minority students to gain access to careers in science and the health professions. Baylor is currently sponsoring 17 science and health programs, and nine others are in the primary stages. These programs attempt to reach some students early in the educational process, make improvements in instructional materials and curricula, enhance the knowledge and teaching skills of science faculty based in public schools and expand minority access and opportunity for health professions careers. This intense community involvement began in 1972 with the establishment of the High School for the Health Professions (hereafter referred to as HSHP). The curriculum combines a rigorous pre-college academic program with learning experiences in health-related activities. At the ninth- and tenth- grade levels, health related experiences focus on exploring careers and acquiring basic knowledge and skills in health care. At the eleventh- and twelfth-

grade levels, students participate in clinical rotations at Baylor-affiliated hospitals. (Butler et al., 1990, p. 307)

In 1987, Baylor conducted a follow-up study of HSHP graduates to determine whether the high school has been successful in encouraging and supporting young people to pursue health professional careers. According to Thomson et al. (1991), a two page survey was sent to the 2,033 students who graduated from the HSHP between 1975 (the first graduating class) and 1987. The HSHP survey (Appendix A) asked the graduates for information about post-secondary education they had pursued, their perceptions of the factors that had enhanced and constrained their career pursuits, their current or anticipated career choices and the likelihood of achieving them, their academic achievements, and demographic background.

Of the 951 respondents (46.8%), a clear majority of 54.6% (519) of the responding graduates reported preferences for science- or health- related careers, with medicine being the first choice, nursing as second choice, and business third. In general, men and women had virtually the same perceptions of the likelihood of attaining their career goals. At the time of the survey, 10% of the men and 8% of the women reported having already attained their career goals; 69% of the men and 71% of the women "definitely expected to attain" their career goals; 21% of the men and 19% of the women indicated that they "might possibly attain" their goals; and less than 1% of the men and 2% of the women doubted that they would attain their goals.

The graduates' academic achievement, as gauged by their reported grade point averages, suggests that the HSHP has done a credible job in preparing students for postsecondary studies. Of the HSHP graduates who responded, 74.4% reported that the HSHP's academic preparation at HSHP had been of "much" help to them.

Overall, the findings of the follow-up study were very favourable. The HSHP appears to have been successful in encouraging and supporting its graduates in pursuing health-related careers.

One might argue that not all medical schools can undertake such an intensive effort, but Petersdorf et al. (1990) believe that many can. Medical schools contain some of the nations' finest educational resources. Classrooms, laboratories, teachers, support staff, and equipment are relatively abundant. If each medical school were to commit itself to taking just 25 bright minority students in the seventh or eighth grade under its wing each year for after-school summer instruction, it would provide enormous motivation for them to pursue careers in medicine. At least 2,500 students would be involved each year in activities designed to prepare them for high school and college science courses and to instill in them the desire to become scientists and physicians.

Nursing Recruitment Efforts

Kohler and Edwards (1990) conducted a study to identify nursing students from high school populations and their primary source of information about nursing. This study explored the reservoir from which most professions pull their potential candidates : high schools. Kohler and Edwards' (1990) review of the literature suggested that most college students selected their courses during their high school experience, and that recruiters make special efforts to mold and influence that choice through career days and academic counsellors.

Direct encounters with nurses seem to be more influential in shaping high school students' opinions than vicarious experiences through television and the printed media. It is recommended by Kohler and Edwards (1990) that persons interested in recruiting nursing students adopt strategies that offer potential nurses a positive, personal experience with nurses in actual work situations.

King and Sherman (1990) discuss the disappearing health career clubs in the schools, visits from nursing recruiters, and the advice and support from the senior high guidance counsellors. They believe that the guidance counselling efforts are vital links in the chain of decisions by which young people choose their life's work and that senior high school counsellors could prove valuable marketing channels for nurse educators and administrators if effective ways could be found to win their interest and support. They surveyed 41 guidance counsellors in the Massachusetts area. Of the

31 schools reached, 19 either held a career day or provided career presentations at the high school. Eighty nine percent of the respondents thought that having a nursing executive or nursing educator discuss nursing careers at the school each year would be beneficial. Twenty-eight of the high schools contacted had student newspapers and would welcome nursing articles in them. They discovered that none of the schools had a future nurses' club and only 17 percent had an interest in starting one. High school guidance counsellors could become excellent channels for marketing nursing to students at crucial points in their vocational development.

Other Science and Career Oriented Programs

In Newfoundland there are two programs, Biology Camp and Science Camp, held at Memorial University of Newfoundland, through the Department of Biology and the Department of Physics, respectively. These programs offer one-week and two-week sessions in the two subject areas which are presented through hands-on activities, demonstrations and field trips. The ages of the students range from 7 years to 18 years. The main purpose is to make students aware of these subject areas and instill in them an interest to pursue such studies in the pure sciences through high school and post-secondary education. While career education is part of this program, however, there is more emphasis placed on subject learning.

Based on the concept of Science Camp, a program called Science Quest was initiated through the Engineering Society at Queen's University. It has been operational since 1988 and offers week long instruction in Engineering and Applied Science to junior and senior high students.

Perhaps the largest program in Canada is the Shad Valley one. It operates through eight universities (Acadia University, University of British Columbia, University of Calgary, Carleton University, University of Manitoba, University of New Brunswick, Université de Sherbrooke, and University of Waterloo) and offers four weeks of instruction and a six-week work term with a sponsor. In order for students to attend such a program, they must have high academic achievement, demonstrated

initiative and drive, indications of a truly creative mind, and good interpersonal skills. With technology and business being emphasized, seminars are given in engineering, science, computers, and business.

The first three programs operate on a first-come first-serve basis with a registration fee for the students, whereas the Shad Valley program chooses participants from a pool of applicants. Both Science Quest and Shad Valley receive corporate sponsorship, even though students are charged a fee.

Program Evaluation

In this section, a number of curriculum (or program) evaluation models will be briefly examined. Inherent in each model is a set of values and beliefs about curriculum; these are reflected in the aspects of the curriculum chosen for study, the nature of the information gathered, and the method by which the data are gathered. To understand how the evaluation models conceptualize evaluation, a definition of evaluation is first presented.

Definition

According to Popham (1988), to evaluate something is to appraise its quality. The kind of educational evaluation that everyone is concerned with is formal or systematic educational evaluation, which consists of a formal appraisal of the quality of an educational phenomenon. The heart of this definition involves an appraisal of quality or, in other words, a determination of worth.

More specifically, Provas as cited in Popham (1988), offered the following definition of evaluation:

Program evaluation is the process of (1) defining program standards; (2) determining whether a discrepancy exists between some aspect of program

performance and the standards governing that aspect of the program; and (3) using discrepancy information whether to change performance or to change program standards. (p.37)

Worthen and Sanders (1987) further define program evaluation as the evaluation of a complex of people, materials, and organization which make up a particular educational program.

Roles of Evaluation

Michael Scriven effectively distinguished between two basically different roles - formative and summative - served by educational evaluation in his classic 1967 essay. Since then, the terms have become almost universally accepted in the field. Although in practice distinctions between these two types of evaluation may blur somewhat, it seems useful to summarize the major differences noted by Scriven.

Formative Evaluation

Formative evaluation refers to appraisals of quality focused on instructional programs that are still capable of being modified. It is conducted during the operation of the program to provide program directors evaluative information useful

in improving the program. In formative evaluation, the audience is program personnel - such as those responsible for developing curriculum. Formative evaluation leads to (or should lead to) decisions about program development (including program modification and revision). Baker (1978), as cited in Worthen and Sanders (1987), noted that two important factors which influence the usefulness of formative evaluation are control and timing. If suggestions for improvement are to be implemented, then it is important that the formative study collect data on variables over which the program administrators have some control. Also, information that reaches administrators too late for use in improving the program is evidently useless.

Summative Evaluation

Summative evaluation refers to appraisals of quality focused on completed instructional programs. It is conducted at the end of a program to provide potential consumers with judgements about the program's worth or merit. Summative evaluation audiences include potential consumers (students, teachers, and other professionals), funding sources (taxpayers or funding agency), and supervisors and other officials, as well as program personnel. Summative evaluation leads to decisions concerning program continuation, termination, expansion, adoption, and so on.

It is apparent that both formative and summative evaluation are essential because decisions are needed during developmental stages of a program to improve and strengthen it, and again, when it has stabilized, to judge its final worth or determine its future. Unfortunately, too many educators conduct only summative evaluation. This is unfortunate because the developmental process, without formative evaluation, is incomplete and inefficient. Failure to use formative evaluation is myopic, for formative data collected early can help rechannel time, money, and all types of human and material resources into more productive directions.

Models

Popham (1988) provides a description of alternative approaches to educational evaluation. Such evaluation models can be defined as a "set of plans" or "an example for imitation or emulation." Those who developed most of these models were doing their best to lay out a course of action which, if followed, would lead to more effective evaluations. The five classes of educational evaluation models to be considered in this section are: Goal Attainment Models, Judgemental Models Emphasizing Inputs, Judgemental Models Emphasizing Outputs, Decision-Facilitation Models, and Naturalistic Models.

Goal-Attainment Model

A goal-attainment approach to educational evaluation considers evaluation mainly as the determination of the degree to which an instructional program's goals were achieved. The goal-attainment conception of educational evaluation is usually associated with the efforts of Ralph W. Tyler, whose approach to evaluation was reflected in the well known Eight Year Study of the 1930's. His method involved setting goals and objectives to certain criteria. At the conclusion of the instructional program, measurements were taken to determine if established goals were attained. Unattained goals reflect inadequacies in the instructional program whereas attained goals would reflect a successful instructional program.

Hammond's (1973) model goes to greater length in attempting to spell out the nature of the institutional factors that might be relevant in considering the degree to which expressed objectives are achieved. The final step of this recommended sequence of operations involves analyzing the relationship between these instructional and institutional variables as they bear on measured learner behaviour.

The main thrust of goal-attainment models is the degree to which pre-specified instructional goals have been achieved. The quality of those goals is, obviously, of considerable importance.

Judgemental Models

Another class of evaluation models includes those in which major attention is given to professional judgement. The particular focus of the evaluator's judgement allows this approach to be subdivided into inputs (sometimes referred to as intrinsic or process criteria) and outputs (sometimes referred to as extrinsic or product criteria).

Judgemental Models Emphasizing Intrinsic Criteria

The major focus of this model is professional judgement using intrinsic criteria. In these approaches the evaluator exercises considerable influence on the nature of the evaluation, since it is the evaluator's judgement that determines how favourable or unfavourable the evaluation turns out to be. A good example is the accreditation model where the school engages in an extended self-study in anticipation of the accreditation visit from the accrediting agency.

Although few educators would recommend that input criteria be discounted completely in judgemental models, for these factors can sometimes help clarify what is really operative in a given program, evaluation models in which concern for input dominates are not viewed with favour these days.

Judgemental Models Emphasizing Extrinsic Criteria

There are several recommended approaches to educational evaluation that can be best described as judgemental schemes in which primary attention is given to outputs. The most significant of these models are those developed by Michael Scriven (1967) and Robert E. Stake (1967). Stake's Countenance Model distinguishes between descriptive and judgemental acts of the evaluator according to three phases of an educational program, that is, the antecedent, transaction, and outcome phases. Stake then divided descriptive acts according to whether they refer to what was intended or what was really actually observed. He then divided judgemental acts according to whether they refer to the standards used in reaching judgements or to the actual judgements themselves.

Scriven makes several recommendations based on the distinction he has made in the roles of formative and summative evaluation. The recommendations are as follows:

1. Assess the merit of goals, not just the degree to which the goals were achieved.
2. Stress pay off evaluation or the effects of a program.
3. Use comparative evaluation by searching for reasonable comparisons among the objects they evaluate.
4. Use goal-free evaluation which focuses on the outcomes of a program,

intended as well as unanticipated. This should be used as a supplement to goal-based evaluation.

5. Use of the Modus Operandi Method to determine the characteristic causal chain connecting the cause with the effect.

Decision-Facilitation Models

The orientation of these models is overwhelmingly toward servicing educational decision makers. There is an important difference between this model and the three classes of evaluation models previously examined. Decision-facilitation evaluators are less willing to assess personally the worth of educational phenomenon. They will strive to collect and present the information needed by someone else, who will determine worth. Decision-facilitation evaluator's view the final determination of a program's merit as the decision maker's province, not theirs.

One of the best known of the decision-facilitation evaluation schemes is the CIPP Model, originated by Daniel Stufflebeam and Egon Guba (1971). CIPP is an acronym representing the four types of evaluation this model identifies, namely, context evaluation, input evaluation, process evaluation, and product evaluation. The CIPP approach to evaluation is rooted in its definition of evaluation:

"Evaluation is the process of delineating, obtaining, and providing useful information for judging decision alternatives". (Popham, 1988, p. 34)

The Discrepancy Model, devised by Malcolm Provus (1971), is another approach to education based on the premise that evaluation involves the comparison of performance and standards. The Model consists of five stages, the first four of which follow this general paradigm: where S = standard, P = program performance, C = comparison of S with P, D = discrepancy information resulting from C, T = terminate, A = alteration of P or S. After performance is compared with standards, the inspection of the resulting discrepancy information leads to four alternatives. The program can be terminated; it can proceed unaltered; its performance can be altered; or its standards can be altered. The final stage of the Discrepancy Model, unlike the first four, which are developmental in nature, is concerned with a cost-benefit analysis of the now-completed program with other competing programs.

Naturalistic Models

The fifth category of educational evaluation models reviewed is referred to as naturalistic. Also described as qualitative, such evaluation models represent a substantial departure from most of the evaluation models that have been considered. The fewer constraints imposed on the evaluation, the more naturalistic the evaluation will be. An ideal scientific inquiry would have substantial constraints imposed on both antecedents and outputs. A naturalistic educational evaluation, as is implied by the notion of natural, would be just the opposite.

Robert Stake turned from conventional evaluation methods in the early 1970s to endorse what he characterized as responsive evaluation. Stake became convinced that a major deficit of conventional approaches to evaluation was that they were not sufficiently attentive to the concerns of the individuals for whom the evaluation was being conducted. Stake's conception of responsive evaluation deals focally with the issues that are perceived to be important by stakeholders, that is, persons in and around the program such as program staff, program sponsors, taxpayers, students, parents, teachers, and administrators.

Eisner developed a naturalistic approach to educational evaluation rooted in the domain of art criticism. Eisner's approach, known as Eisner's Connoisseurship Model (1975), relies on the use of human judgement as the key data-gathering instrument.

An Evaluation Strategy

The models presented in this section are representative of the theoretical knowledge available, however the evaluator who applies these models will require a high level of knowledge about evaluation and research methods. A literal application of some of these models would require the establishment of an evaluation department just to carry out the evaluations.

A strategy developed by Leithwood et. al., as cited in Miller and Seller (1990),

is designed for the nonspecialist. This strategy outlines a process that makes it possible for educational systems that do not have resident evaluation experts to conduct an effective evaluation. It is assumed, however, that the person conducting the evaluation would have developed a personal model for evaluation that enables one to identify more important tasks to be carried out and have the ability to establish procedures for the evaluation. These requirements reflect the need for the evaluator to use the evaluation literature to develop the details for the project to be undertaken.

The strategy to be presented focuses on a central task of program evaluation - the judgement of value or worth - and the central purpose is to assist in improving both the process and outcome of program decision making. Figure 2 illustrates the five sequential steps in the Leithwood et al. evaluation strategy.

1. In Phase I, the evaluator determines the nature of the information to be sought. This is accomplished by identifying the rationale for the evaluation and by clarifying the decisions to be made from the final results. The main purpose of this phase is to ensure that the information gathered during the evaluation is pertinent to decision making.
2. In Phase II, specific questions are formulated and follow with a number of decisions to be made, as shown in Figure 2, steps 2.2. through 2.6. The evaluator's knowledge and skill regarding evaluation procedures,

as well as the evaluator's personal model of evaluation, are used extensively in this phase.

3. Phase III continues the planning in greater detail. The tasks are identified and timelines established. The responsibilities of all involved in the evaluation process are clearly outlined. This phase allows the evaluator to properly assess the feasibility of the proposed evaluation or make alterations before the data-gathering process begins.
4. In Phase IV, the plan developed in Phase III is carried out. Selection of questionnaires and other data collection methods will be developed and completed; the type of instrument will reflect a particular curriculum position. The evaluator ensures that all participants are aware of their roles. Finally, the data are collected and compiled.
5. Phase V requires that the evaluator apply the data collected to criteria of the decision rules developed in Phase I. The results are then reported to the decision maker so that action can be taken.

The basic purpose of the curriculum (program) evaluation models presented in this section is to gather information for program decision making. Improved curriculum should result from these decisions. Before selecting a particular evaluation model, further refinement of the model's purpose is needed. Clarification of the purpose should indicate where, in the curriculum cycle, the information is to

be gathered and the decisions made. Curriculum evaluation provides the information necessary to bring about improvements. To do this, it is necessary to gather the proper information and to present it in a useful manner.

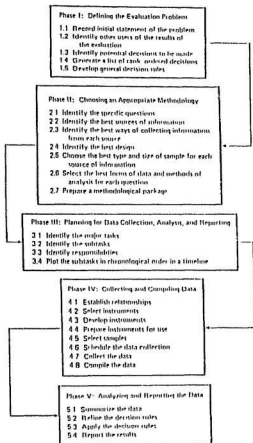


Figure 2. An overview of an evaluation strategy (Leithwood et al., as cited in Miller & Seller, 1990, p.326)

Conclusion

The reviewed literature has focused on the issues dealing with recruitment of physicians and health professionals to rural areas and has also presented career-oriented programs that have been developed to help counteract this problem both on a local and national level.

All of the programs presented work on the premise that rural students are more likely to return to a rural area than are their urban counterparts, therefore, efforts are made to enhance opportunities for these students to seek a career in a health profession.

One of the medicine related programs that was most impressive is the High School for the Health Professions (HSHP) which has a curriculum (for grades 9-12) combining a rigorous pre-college academic program with learning experiences in health-related activities. The nursing recruitment programs also focused on the high school population and provided direct encounters with nurses (mentoring), health career clubs, and working closely with the guidance counsellors.

In Canada, some science-oriented programs have been implemented with the Shad Valley program being the most comprehensive, since it offers four weeks of instruction and a six-week work term with a sponsor. The program is offered to students (urban or rural) who have high academic achievement, demonstrated initiative and drive, a creative mind and good interpersonal skills.

Program evaluation has been defined as an appraisal of quality or determination of worth of people, materials, and organization which make up a particular educational program. To distinguish between types of program evaluation, formative and summative evaluation were shown as essential components of any evaluation to improve a program during its developmental stages and judge its final worth. To provide the basis for evaluation, alternative approaches have been presented in five models - goal-attainment models, judgemental models emphasizing inputs, judgemental models emphasizing outputs, decision-facilitation models, and naturalistic models. In addition to these traditional models, an evaluation strategy developed by Leithwood, which outlines five steps to be followed for any evaluator who is a nonspecialist was also examined. The combination of the formative and summative evaluation methods and the general outline of evaluation strategies presented provides a good theoretical background for the evaluation carried out with the Med Quest program.

CHAPTER 3
DESIGN OF THE STUDY

Placement and Duration

This Project study took place in the Faculty of Medicine at Memorial University of Newfoundland. During the weeks of June 24 - August 2, 1991, the Med Quest program was offered to 125 students from all areas of the province. As Director of the Program, the researcher ensured that the questionnaires, Pre-Med Quest and Post-Med Quest, were administered during this time. Since the program began in 1990, a Follow-up Questionnaire was sent to the 118 participants who previously attended. It is hoped that the analyzed results will indicate the long-term effect of the Med Quest Program, although it has been about nine months since the program ended.

Objectives of the Project

The objectives of the Med Quest program are:

- to introduce students to the fascinating world of the health sciences and rewarding careers such as doctors, nurses, physiotherapists, or researchers.
- to motivate students to consider careers in the life sciences, and take courses appropriate to this aim.
- to encourage enthusiasm for study in post-secondary institutions.

Since Med Quest is designed to increase the awareness of health careers among rural students and encourage them to pursue a health career, the main objectives of the project are (1) to determine if the program is affecting the career choice of students and in which area(s); (2) to determine the influence on students' selection of courses (general and science); and (3) to determine whether there has been a change in students' perception to attain a health career.

An evaluation of the 1990 program showed that the Med Quest program was able to affect the career choice of 88.1% of the participants. Most respondents, as shown in Figure 3, stated that Med Quest affected their career choice by exposing them to health careers and by reinforcing their career decision. The distribution of career choices, Figure 4, was similar in the Pre-Med Quest and Post-Med Quest questionnaires. The main focus herein was placed on the Follow-up questionnaire

to find out if the program had an affect after a nine month period.

Figure 3. How Med Quest Influenced Career Choice - 1990 Participants

**Factors Affecting
Career Choice**

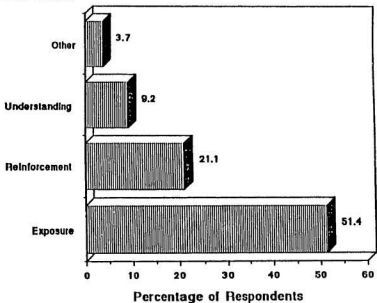
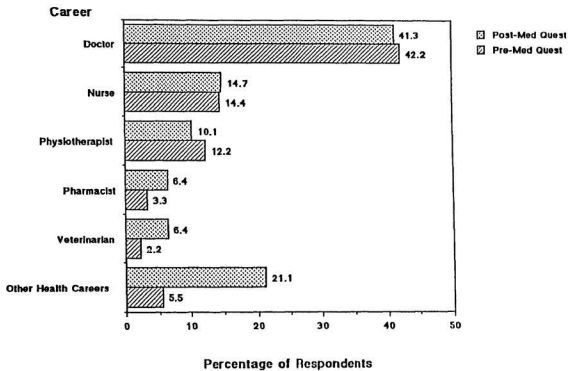


Figure 4. Career Choice of 1990 MedQuest Participants



Methodology

Population / Sample

The population for this study were the participants of 1991 Med Quest, which is 125 rural high school students as well as the 118 students who attended the 1990 Med Quest program. The 1991 participants were randomly selected out of 812 applications from 130 high schools with the addition of seven students who were sponsored by the Labrador Inuit Health Commission (additional four schools). The random selection was not based on any specific criteria such as grades or achievement. Applicants were selected based on a quota of one per school in an attempt to accommodate all schools with applicants. Due to individuals withdrawing their acceptance and not being replaced, there were actually 121 schools represented.

Table 2 clearly shows the applicants and acceptances by gender by school district. The applicants came from all areas of the province with the applicant pool being comprised of 79% female and 21% male, approximately a 4:1 ratio. The percentages of those who were accepted and attended the program are 62% female and 38% male, a 2:1 ratio of female to male.

TABLE 2
NUMBER OF APPLICANTS AND ATTENDANCE
BY GENDER AND SCHOOL DISTRICT

SCHOOL DISTRICT	APPLICANTS (1)			ATTENDANCE (2)		
	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL
INTEGRATED						
101 VINLAND	5	15	20	1	1	2
102 STRAITS OF BELLE ISLE	3	5	8	0	2	2
103 DEER LAKE	10	34	44	1	4	5
104 GREEN BAY	2	12	14	1	2	3
105 EXPLOIT'S VALLEY	11	30	41	3	1	4
106 NOTRE DAME	10	41	51	2	2	4
107 TERRA NOVA	12	35	47	4	6	10
108 CAPE FREELS	1	16	17	1	2	3
109 BONAVISTA-TRINITY-PLACENTIA	4	36	40	2	4	6
110 AVALON NORTH	23	63	86	6	4	10
111 AVALON CONSOLIDATED	0	1	1	0	1	1
112 BURIN PENINSULA INTEGRATED	4	25	29	2	3	5
113 BAY D'ESPOIR-HER.-F.B.	4	13	17	1	2	3
114 PORT AUX BASQUES	2	1	3	1	1	2
115 BAY OF IS.-ST.G.-BUR-RAN	6	32	38	2	2	4
116 ST. BARB SOUTH	0	0	0	0	0	0
117 LABRADOR EAST	3	10	13	0	9	9
118 LABRADOR WEST	3	4	7	0	1	1
129 CONCEPTION BAY SOUTH	2	19	21	1	1	2
TOTAL INTEGRATED	105	392	497	28	48	76
ROMAN CATHOLIC						
501 BAY ST. GEORGE	0	4	4	0	2	2
502 BURIN PENINSULA R.C.	15	51	66	3	3	6
503 CONCEPTION BAY CENTRE	1	9	10	0	1	1
504 CONCEPTION BAY NORTH	12	23	35	3	1	4
506 EXPLOIT'S-WHITE BAY	4	23	27	1	2	3
507 FERRYLAND	2	13	15	0	2	2
508 GANDER-BONAVISTA-CONNAIG	1	10	11	1	1	2
509 HUMBER - ST. BAIBE	6	20	26	1	2	3
510 LABRADOR	8	22	30	2	1	3
511 PLACENTIA - ST. MARY'S	4	35	39	2	5	7
512 PORT AU PORT	1	3	4	1	1	2
514 ST. JOHN'S	3	5	8	1	1	2
TOTAL ROMAN CATHOLIC	57	218	275	15	22	37
401 PENTECOSTAL ASSEMBLIES	7	40	47	4	8	12
701 SEVENTH DAY ADVENTIST	0	0	0	0	0	0
TOTAL PROVINCE	169	650	819	47	78	125

Procedure

The researcher sought and received prior approval to proceed with the study from the Ethics Review Committee, through the Chair, Dr. George Hickman. Since the researcher is a student in the Faculty of Education there is no requirement to consult the Human Investigation Committee of the Health Sciences, however the researcher did so in 1990 and was given approval to proceed with the program evaluation.

The method of research planned for this study was the interpretation of data obtained from three questionnaires (Appendix B): Pre-Med Quest, Post-Med Quest, and the Med Quest Follow-up questionnaire. The 1991 data from the Pre- and Post-Med Quest questionnaires were analyzed to ascertain whether that the program is having a short-term affect on career choice. The data from the Follow-up questionnaire were interpreted and analyzed to determine if long-term goals of affecting career choice and student selection of courses are being met. The data entry and analysis was done in consultation with a computer programmer from the Faculty of Education, and was performed on the Statistical Package for the Social Sciences (SPSSX).

For all questionnaires, frequency tables were generated for all possible responses in most questions. Since multiple responses are normally given for most questions, the total frequency per value label (in each question) is calculated and

divided by the total number of valid cases, hence providing the valid percentage. The following is a description of the content in each questionnaire:

Pre-Med Quest Questionnaire

This two page questionnaire was given to all 1991 Med Quest participants the first day of each weekly session. Students were asked to provide information about science courses offered at the high school, science courses completed and enrolled in for the next academic year. To determine their knowledge of health professions, they were asked to name three health careers along with the education requirements to enter such programs at the post secondary level and where they could find more information about these careers. The students were asked how they would finance their post-secondary education, what their career plans are and why they wish to follow this career. To assist the admissions process, students were also asked to provide information about how they learned of Med Quest and their overall average during the 1990-91 school year.

Post-Med Quest Questionnaire

This questionnaire was administered on the last day of each weekly session. In general, students were asked to provide comments on the instruction of the

program, admissions, and facilities. They were asked specifically what they liked and disliked about the program and any changes that could be made. The main questions asked were on career choice to be followed, why this choice, and how did Med Quest influence their career choice.

Follow-up Questionnaire

A two page questionnaire was sent in March of 1991 to 118 students who participated in the 1990 Med Quest program. The questionnaire initially asked the students for information about their current status. If students were attending high school, they were asked to respond to questions about science courses taken prior to and following Med Quest, plus their overall average and those science courses enrolled in for the 1991-92 year. If they were attending a post-secondary institution they were to provide information regarding the name of the institution and the program of study. Some students may have become employed since completing high school and were asked to provide their current occupation. All students were asked about their career aspirations and why they wished to follow this career.

To understand the origin of the questionnaires, utilized in this project, the researcher had several meetings with the Med Quest staff (first year medical students) to plan the summer program and evaluation. Two of the staff members

volunteered to do the evaluation of the program as part of their regular Med Quest duties. These students, Ms. Kim Butt and Mr. Jeff Cole, wished to use the evaluation for their Special Topics Course under the direction of Dr. Doreen Neville and Dr. Jorge Segovia. These individuals, in consultation with the researcher, designed four questionnaires titled Pre-Med Quest, Post-Med Quest, Follow-up, and Instructor. The Pre-Med Quest questionnaire was piloted at Holy Spirit High School where 89 students from grade 9 to level 3 were administered the questionnaire and appropriate revisions were made. The Post-Med Quest questionnaire was adapted from previously tested questionnaires which were assumed to be valid and reliable. The Follow-up questionnaire, which was originally designed by these students, received major modifications by the researcher before it was utilized in this study. However, an Instructor's questionnaire, also designed by Butt, Cole, Neville and Segovia (1990) was not used in this study. The results of the analysis were submitted to the researcher following completion of the program and are referred to in Chapter 4 for comparison purposes.

It should be noted that the 1990 questionnaires did not ask respondents to reveal their identity. However, the 1991 questionnaires did request respondents to identify themselves for the purpose of comparing Pre- and Post- Med Quest questionnaire data. The students were encouraged to be frank in their responses since the main purpose of completing the questionnaire was to determine which sessions were working in the program; how the program can be improved and how

it was affecting their career choice. It was made clear to the participants on the first day of the program, that they should endeavour to learn as much as possible, and that by the end of the program they ought to be able to make more informed decisions about careers in health care. No attempt was made to pressure participants into choosing a health profession, and emphasis was placed on the fact that decision is a matter of individual choice. The researcher's supervisory committee felt that requesting respondents' identity should not significantly bias responses, since the data collected was to be utilized only for comparative purposes.

Responses from the 1990 and 1991 programs were very similar, and respondents appear to be open and frank about either liking or disliking some aspect of the program, or if they do not wish to pursue a health career. As well, the questionnaires were actually administered by the Med Quest staff and not the researcher who evaluated the program.

CHAPTER 4

ANALYSIS AND DISCUSSION OF DATA

Results

This chapter discusses the respondents' data, provides interpretation of the results according to the objectives studied, and presents other findings. The following sections will provide a descriptive analysis of the results.

Pre-Med Quest Questionnaire

The number of respondents for the Pre-Med Questionnaire was 125. The age range of the respondents, as shown in Figure 5, was from 14-20 with the majority of students falling in the 15-17 range and 27.4% being 15 years old. The students' grades (or levels) completed ranged from Grade nine to completion of high school (see Figure 6). The majority of participants (28.2%) were entering level II. The percentage of respondents who completed high school was relatively high at 21%.

The science courses offered in the school system appear to be a wide variety with 66.2% of the respondents indicating that Physics, Chemistry, and Biology are offered and 33.8% of the respondents indicating that Geology, Earth Science, Environmental Science, Physical Science, and General Science are offered. This

Figure 5. Age of 1991 Med Quest Participants

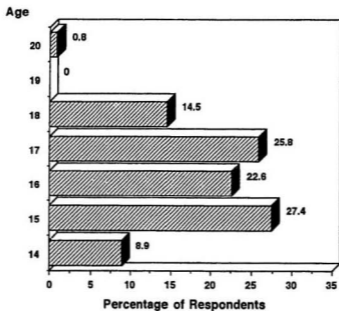
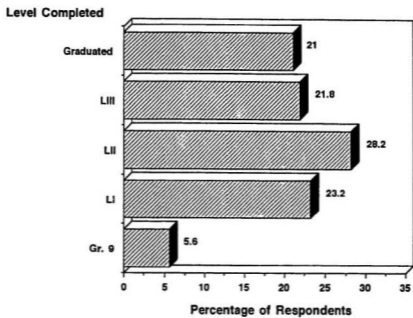


Figure 6. Level or Grade of 1991 Participants - Med Quest



clearly shows that the core offerings of the science curriculum make up Physics, Chemistry and Biology.

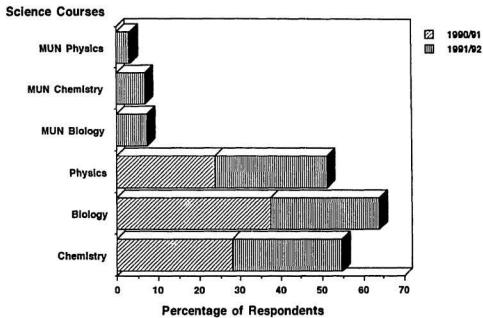
The respondents indicated that they have completed Level II and III Physics (23.7%), Chemistry (27.9%) and Biology (37.5%). Figure 7 compares the courses completed prior to Med Quest and those courses that are planned following Med Quest. From the responses, 58.5% have completed Level II Physics, Chemistry and Biology; and 30.6% have completed Level III Physics, Chemistry and Biology.

Of those respondents (21%) who indicated completion of high school, 17.1% indicated they will be taking either Biology, Physics, or Chemistry at Memorial University in the 1991 fall semester. The percentage of respondents enrolled in Level II and III of Physics was 27.5%; Chemistry was 26.9% and Biology 26.5%.

Students were asked to indicate three health profession careers. The three most popular responses were Nursing (20.2%), Medicine (16.1%), and Physiotherapy (12.3%). Dentistry (9.8%), Optometry (7.4%), and Pharmacy (5.5%) followed in order of choice. Other choices indicated that Pediatrics, Surgery, and Speech Pathology made up 13.6% of the responses.

Based on the health careers indicated, students were asked to suggest the entrance requirements required to enter these health professions. The majority of respondents (59.3%) indicated that students believe one needs a bachelors degree or at least four years of university to enter a health career.

Figure 7. Science Courses - 1991 Med Quest Participants



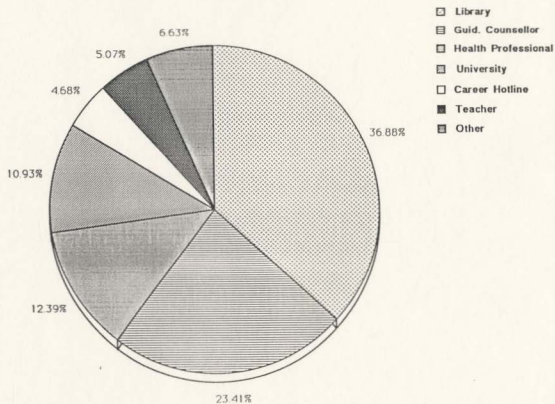
The most popular sources of health career information were the library (37.8%), guidance counsellor (24%), health professional (12.7%), university where program is offered (11.2%), teacher (5.2%) and career hotline (4.8%) (see Figure 8). Other sources indicated were the career choices computer program, career day, friends, and role model. To provide information to students in the future, the library and guidance counsellor should definitely be utilized to a greater extent. It is also interesting to note that the career hotline, an initiative by the Department of Employment and Labour Relations, was mentioned as a response.

The participants indicated that they would finance their post-secondary education through parents income (59.3%), student loan (53.2%), own income (35.8%) and other (17.7%). Other financial sources included scholarships and a special bursary/scholarship program for students of native descent. Students indicated that they intend to use a combination of sources - parents income and student loans - in addition to their own income from working.

To determine where students find out about Med Quest, participants were asked to indicate the most likely sources. The Guidance Counsellor was the most popular source with 67.7% of the respondents replying, whereas the teacher (37.7%), and friends ("word of mouth") (26.6%) completed their information bases.

A significant number, 90.3% of the respondents, indicated that they had thought about their career plans, but the questionnaire did not pursue this matter.

Figure 8. Most Popular Information Sources - 1991 Med Quest Participants



The most popular health careers that students wished to follow were: Medicine (22%), Nursing (11.8%), Physiotherapy (6.3%), Pharmacy (6.3%), Pediatrics (8.7%), and Surgery (5.5%). Other health careers made up 19.8% and other non-health related careers made up 19.6%.

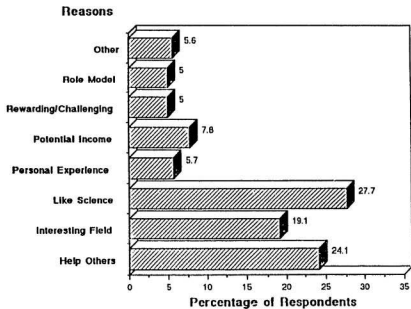
The term "medicine" was referred to by respondents in the questionnaire by medicine or doctor. If respondents knew which specialty they were interested in, they would specify something like surgery. There are only six health career areas listed above because these had the highest frequencies. All other health or health related careers were put in the "Other Health Career" category. The latter category may include such careers as research scientist, health technologist, and occupational therapy to name a few. It is possible that respondents noted "doctor" and meant "basic scientist". However, questionnaire coding was consistent in differentiating between medical specialties (both clinical and non-clinical).

Students were also asked why they want to follow the careers they listed. Of the responses, 27.7% like science, 24.1% want to help others, 19.1% think its an interesting field, 7.8% are interested in potential income, 5.7% because of personal experience, 5.0% are influenced by a role model, and 5.0% think its rewarding and challenging (see Figure 9).

Since students were not asked on their application what their marks were in school, this information was sought on the Pre-Med Quest questionnaire. It should be noted that there were 62/125 missing cases. The marks ranged from 66-97 with

a mean of 89.2%. For the 50% of participants who did not respond to this question, it may indicate that they felt their marks were not high or noteworthy. For those who did indicate a response, marks were in the higher end of the range, assuming that they were accurate.

**Figure 9. Reasons for Career Choice
- Pre-Med Quest for 1991 Participants**



Post-Med Quest Questionnaire

The first 13 questions were designed to determine the quality of organization of the program and were measured on a Likert-type scale of 1-5, which ranged from Strongly Disagree (1) to Strongly Agree (5). Table 3 shows that the responses were very positive as most participants indicated Strongly Agree (SA) or Agree (A):

Table 3
Percentage of Respondents for Post-Med Quest Questionnaire
Questions 1-13

		Strongly <u>Agree</u>	Agree <u>_____</u>
1.	Purpose of Med Quest clearly stated	86%	15.8%
2.	Registration process was clear and convenient	80%	15.8%
3.	Med Quest was well organized	76%	22%
4.	Physical facilities were comfortable & appropriate	62.8%	29.8%
5.	Objectives of Med Quest clearly stated	82.5%	15%
6.	Materials used enhanced my learning	85.1%	14%
7.	As a result of Med Quest I feel comfortable to attempt to use the knowledge & skills I have acquired.	71.9%	19%
8.	Instructors seemed knowledgeable about the subject	86%	13.2%
9.	Instructors' presentations were stimulating	58.0%	29.4%
10.	Instructors' presentations were clear	71.1%	25.6%
11.	Instructors answered questions well	73.6%	26.4%
12.	Activities of Med Quest were appropriate to the objectives	78.5%	20.7%
13.	Med Quest was a valuable learning experience	98.3%	1.7%

Overall the rating was very good. The comfort of the physical facilities received a somewhat lower rating and this may have been due to the fact that the student's home during the day was a crowded laboratory. Perhaps this could be improved in terms of space and location next year. Question #7, regarding the use of knowledge and skills acquired, received a lower rating probably due to the fact that the students are not sure how or where they would apply it. Question #9 indicated a good but somewhat lower rating than the other questions. This could indicate that some of the presentations were still in lecture format and did not allow the students to participate, hence the need to change the format. The most significant question was #13 which strongly indicated that Med Quest was a valuable learning experience.

Figure 10 shows that participants indicated that they mostly enjoyed meeting new people, learning about new areas in medicine, and the anatomy session. Other enjoyable aspects about the program were visiting the hospitals, the physiotherapy session, evening activities, and instructors. The latter seems to mean the "Med Quest" instructors.

Participants were also given the opportunity to relate their dislikes which were lack of sleep, long lectures, hectic schedule, walking, the food, the program was not long enough, and curfew/rules (see Figure 11). The lack of sleep can only be dealt with through curfew and rules which includes setting bed time. As the week goes on the students wish to do less sleeping and more socializing. It was emphasized to all

Figure 10. Most Enjoyable Elements

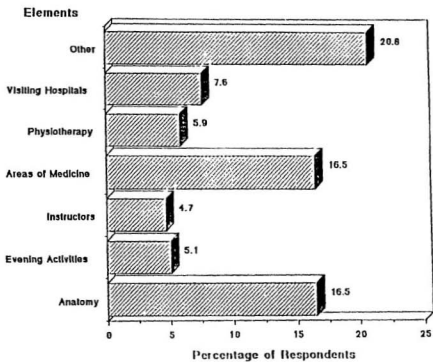
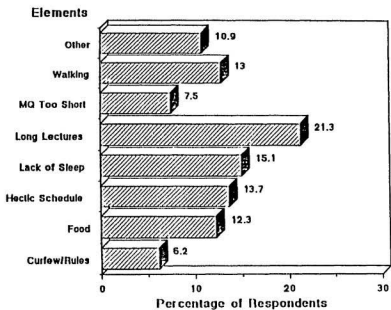


Figure 11. Elements Least Enjoyed

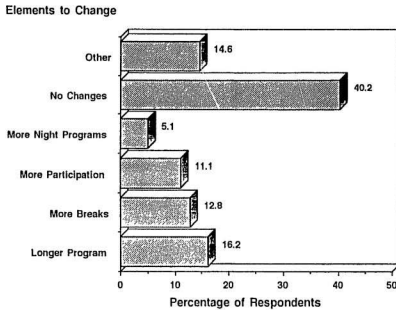


session coordinators to encourage student participation and include hands-on activities. This issue has improved since the 1990 program but will require more emphasis in the future. During the week meals were taken in cafeteria style. Walking seemed to be complained about since the Med Quest instructors encouraged the students to walk up the stairs instead of using the elevator. Many students commented throughout the program, and also indicated on the questionnaire, that the program should be two weeks in length, a need to increase the social aspects of the program and also to spread out the schedule more. As guardians of the students, the Med Quest instructors and Director were responsible for the students' well-being, therefore a curfew and rules were implemented for the safety of the students and to keep discipline within the group.

The suggested changes to be made by the students correspond with the dislikes mentioned. The respondents indicated that the program should be made longer, more breaks implemented into the schedule, more student involvement, and more variety in evening activities (see Figure 12). It was also interesting to note, however, that 40.2% of the respondents stated that there should be no changes made to the program.

It is significant that the respondents (87.4%) indicated that Med Quest did influence their career choice. To help determine if the program had a short term effect on career choice, the participants were asked what career(s) they wished to follow. This was broken down into three categories: (1) health fields (2) other health

Figure 12. Suggested Changes



fields (3) other. The first category used the same careers that were listed in the Pre-Med Quest questionnaire for comparison purposes. The respondents indicated Medicine (14.4%), Nursing (8.8%), Physiotherapy (10.5%), Pharmacy (10.5%), Pediatrics (5.5%), and Surgery (5.0%) as the most popular careers to follow. The second category, other health careers, consisted of 27.6% of the responses. The third category, other, includes careers in Business, Engineering, Education and the military which was responded to by 17.7% of the participants. Comparing the interest in health careers to the Pre-Med Quest questionnaire, Figure 13 illustrates that Medicine, Nursing, Surgery, and Pediatrics decreased, while Physiotherapy and Pharmacy increased. The most dramatic change was in the "other health career" category, which increased from 19.8% to 27.6% of the respondents. This interesting change appears to be because of the students' exposure to the Med Quest program - it increased the students' awareness of the many health careers and choices available.

When asked why they wished to follow a particular career, the participants responded in the following way, as shown in Figure 14: help others (24.3%), like science (22.5%), seems like an interesting field (20.2%), personal experience (8.7%), role model (6.4%), Med Quest experience (5.8%), rewarding and challenging (4.4%).

The respondents (87.4%) indicated that Med Quest did influence their career choice. Figure 15 shows that this was done in the following ways: (1) exposure (67.3%), which involves Med Quest exposure and broadening knowledge,

Figure 13. Career Choices of 1991 Med Quest Participants

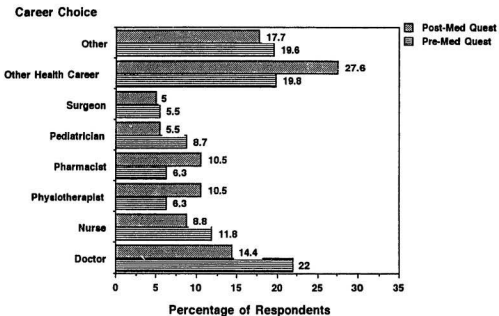


Figure 14. Reasons for Career Choice
- Post-Med Quest for 1991 Participants

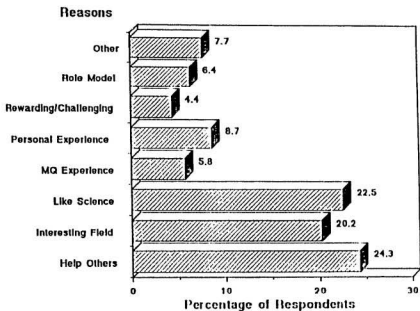
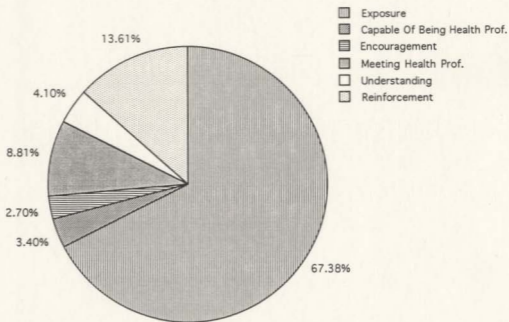


Figure 15. How Med Quest Influenced Career Choice



(2) reinforcement (13.6%), (3) meeting health professionals (8.8%), (4) understanding (4.1%), which involves a better appreciation of health professionals and what the health care system is about, (5) realization that they are capable of being a health professional (3.4%), and (6) encouragement (2.7%).

In terms of general comments given on the questionnaire, the most common responses were: that the participants "really enjoyed the program", "Med Quest was very interesting and enlightening", the "instructors were great" and, overall, "it was a great program".

Follow-up Questionnaire

This questionnaire was sent out to all 1990 participants in March of 1991. The return rate for this questionnaire was 81 out of 118, or 68%.

The ages ranged from 15-19 with the majority of respondents at age 17 (33.3%); 25.9% - age 16; 19.8% - age 18; 11.1% - age 15; 9.9% - age 19 (see Figure 16). Most respondents, 74.1%, indicated they were still attending high school; 23.5% were enrolled in post-secondary institutions, and "other" was 2.5% (see Figure 17).

Of those attending high school there were 22.4% in Level I, 44.8% in Level II, and 32.8% in Level III (see Figure 18). Physics, Chemistry, and Biology are still the most frequently occurring courses in the schools.

Participants were asked about the science courses they completed prior to Med Quest (1989/90), the courses currently enrolled in (1990/91) or taken immediately following Med Quest, and the courses planned to be taken in the future (1991/92). The percentages in the Follow-up questionnaire are lower for high school science courses than indicated in the corresponding 1990 Pre- and Post- Med Quest questionnaires, due to the fact that 32% of those participants should have completed high school. It is not appropriate to compare these figures to last year's and the study therefore reports on the Follow-up questionnaire only: Chemistry - 89/90 (26.7%), 90/91 (67.4%), 91/92 (34.7%); Biology - 89/90 (40%), 90/91 (39.5%), 91/92 (31.9%); Physics - 89/90 (21%), 90/91 (55.8%), 91/92 (31.9%) (see Figure 19).

Figure 16. Age of 1990 Participants - Follow-up Questionnaire

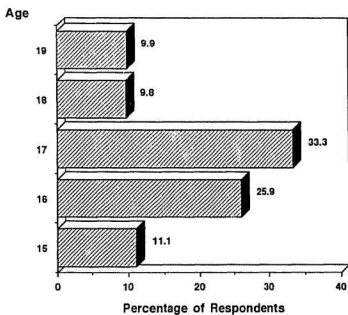


Figure 17. Status of 1990 Participants - Follow-up Questionnaire

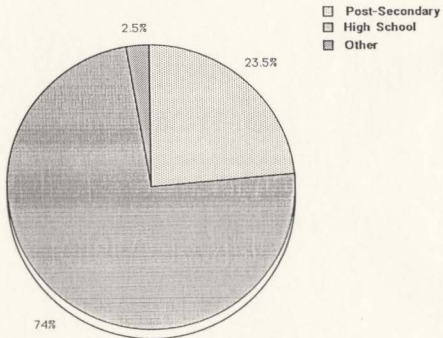


Figure 18. Level of 1990 Participants - Follow-up Questionnaire

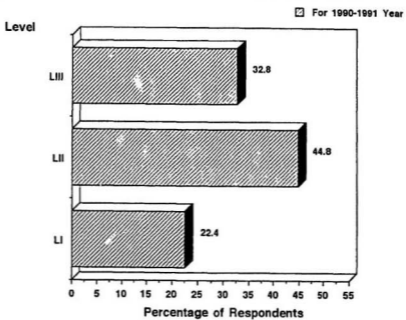
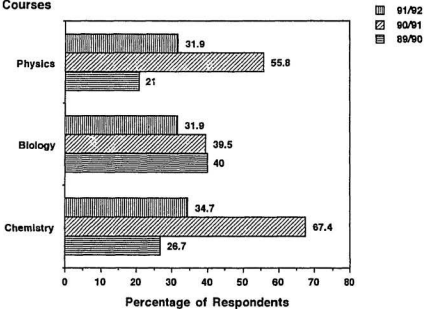


Figure 19. Science Courses of 1990 Participants

Science Courses



From the Follow-up questionnaire, the academic average of the respondents during the 89/90 year or prior to Med Quest was 83.3% and the academic average of the respondents following Med Quest (during the 1990/91 year) was 84.4%.

Of the 20 respondents indicating they were attending a post-secondary institution (namely Memorial University), 14.5% were taking Physics, 45.5% were taking Chemistry, 29.1% were taking Biology, and 10.9% were taking Psychology (see Figure 20). The marks ranged from 40-90 with a mean of 66%. The ranking of grades went in the order of B, C, A, D, F. With assistance from the Registrar's Office, at Memorial University of Newfoundland, the grades were provided for the first year University courses Physics, Chemistry, and Biology during the 1990/91 year ranked as follows: B, C, A, F, D. The grades of the Med Quest participants correspond to the those of an average student at University taking the same courses.

All participants were asked to respond to question #12 asking them about which career they would like to follow: Medicine (32.7%), Nursing (17.3%), Pharmacy (3.1%), Veterinary Medicine (5.1%), Other health careers (18.3%). In comparison to the 1990 Pre- and Post-Med Quest questionnaire results, Figure 21 shows that Medicine decreased by 8%, Nursing increased by 2.6%, Physiotherapy decreased by 7%, Pharmacy decreased by 3.3%, and Other Health Careers increased by 8.2%. The most notable changes are the decrease of interest in Physiotherapy, Pharmacy and Medicine and the significant increase in "Other Health Careers". The respondents may be changing health career areas either due to lack of reinforcement

Figure 20. Science Courses Taken at MUN
By 1990 Participants During 1990/91 Year

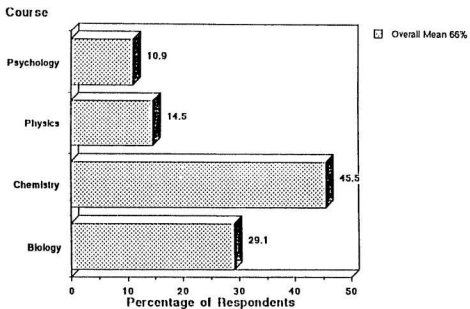
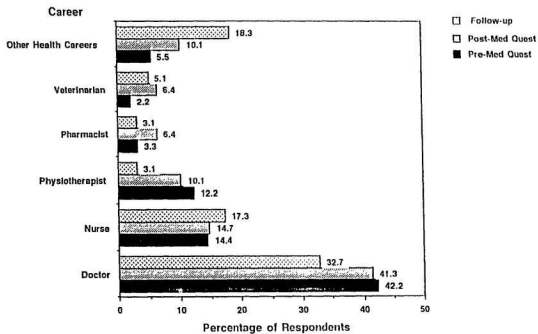
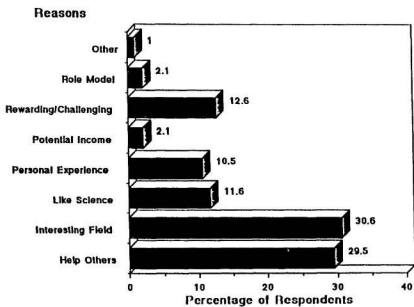


Figure 21. Career Choices of 1990 Med Quest Participants



from a program such as Med Quest; influence from parents, peers, and school personnel; or because they are now able to make more informed choices having been given time to think about the career information received through Med Quest. The respondents also indicated the factors affecting their career choice(s): seems like an interesting field (30.6%), help others (29.5%), rewarding and challenging (12.6%), likes science (11.6%), personal experience (10.5%), potential income (2.1%), and role model (2.1%) (see Figure 22).

Figure 22. Reasons for Career Choice - Follow-up Questionnaire



Interpretation of Results by Objectives

Objective #1 - To determine if the program is affecting the career choice of the student and in which area(s).

In the Pre-Med Quest questionnaire, 90.3% of the respondents indicated they had thought of their career plans. This is a significant number of participants who have come to Med Quest with either some idea of a career they would like to follow or no choice made at all. Both categories of students are open to influence since exposure to Med Quest will either positively or negatively reinforce their career decision. After a week at Med Quest, most will have decided on pursuing a health career or pursuing a non-health career, and in the former case some participants may even know what specialty. When asked in the Post-Med Quest questionnaire, 87.4% of the respondents stated that Med Quest did influence their career choice.

The career choices of 1991 Med Quest participants are compared in the Pre- and Post- Med Quest questionnaires to show that the interest in some health careers (Medicine, Nursing, Surgery, and Pediatrics) decreased, while interest in Physiotherapy and Pharmacy increased. The "other health career" category increased substantially from 19.8% of the respondents to 27.6%.

Through exposure to the Med Quest experience, students were more aware of other health careers (including specialties) that are available for them. It would

appear that there is a pre-conceived notion of what a career is going to be like. This was usually changed while attending Med Quest.

In the Follow-up questionnaire, the results of career choice were compared to the 1990 Pre- and Post- Med Quest questionnaire results: Medicine decreased by 8%, Nursing increased by 2.6%, Physiotherapy decreased by 7%, Pharmacy decreased by 3.3%, and Other Health Careers increased by 8.2%. The most notable changes are the decrease of interest in Physiotherapy, Pharmacy, and Medicine plus the significant increase in Other Health Careers. Perhaps, there is not enough reinforcement in the school and community to pursue these careers or there are not many role models. "Other health careers" increased significantly which could indicate the influence of the Med Quest experience in broadening the career choices that are available and attainable for students. Following the Med Quest program, there seems little doubt that the participants should be able to make more informed decisions about which career they wish to follow.

Objective 2 - To determine the influence on students' selection of courses.

For the 1991 participants, the Pre-Med Quest questionnaire highlights science courses taken prior to Med Quest and those enrolled in for the 1991/92 academic year. The respondents indicated that 58.5% have completed Level II Physics, Chemistry and Biology; and 30.6% have completed Level III Physics, Chemistry and

Biology. Since the majority of respondents have completed Level II, it is understandable why there is a higher percentage of courses completed at the second level.

Of those respondents (21%) who indicated completion of high school, 17.1% indicated they will be taking either Biology, Physics, or Chemistry at Memorial University of Newfoundland in the 1991 fall semester. The percentage of respondents enrolled in Level II and Level III of Physics is 27.5%, Chemistry is 26.9% and Biology 26.5%.

Since the students had probably intended to do these courses prior to attending Med Quest, it would be appropriate to examine the Follow-up questionnaire results of the 1990 participants.

Throughout the Med Quest program science courses such as Physics, Chemistry, and Biology are stressed for students to pursue prior to entering a health career. Since the majority of participants are entering Level III for 1991/92, there is a decrease in those taking courses as more electives are usually taken at this time and the majority of science credits should be completed.

Of the 20 respondents indicating they were attending a post-secondary institution (Memorial University), 14.5% were taking Physics, 45.5% were taking Chemistry, 29.1% were taking Biology, and 10.9% for Psychology. The marks ranged from 40-90 with a mean of 66%. The ranking of the grades was in accordance with the average grade for all students attending those first year courses, i.e. B,C,A. It is

interesting to note that a significant portion of the 1990 Med Quest participants who were attending Memorial University were taking Chemistry and Biology, two essential courses for entrance into a health profession school. Their grades were comparable to the class average in these subject areas. It is evident that Med Quest has provided encouragement for the participants to take science courses in high school and post-secondary school, and the majority are pursuing this direction.

Objective 3 - To determine whether there has been a change in students' perception to attain a health career.

The Post-Med Quest questionnaire results asked students why they wish to pursue the career(s) they listed. The above objective can be answered indirectly as the participants had to list the factors which influenced their career choice following the Med Quest program. Students actually responded by stating they now have the realization that they are capable of being a health professional. If it was not specifically stated, then indirectly it comes out in the following comments: "feels encouraged", "better appreciation of health professionals", "knowledge broadened because of Med Quest experience", and "reinforcement of career choice". All involve some aspect of the students' perception of their self-confidence and abilities regarding the future and their career goal(s).

This chapter has presented the design of the study, evaluation of the Med Quest program, and how the results were determined through questionnaire analysis. The analyzed results have shown that 243 students have had a positive educational experience from a program which, on a short-term basis appears to be meeting its objectives. Med Quest is broadening the student's career choice due to the presentation of a variety of health careers and specialties within such professions. Med Quest has provided encouragement for the participants to take science courses in high school and post-secondary school, and the majority are pursuing this direction. Due to exposure to Med Quest, participants indicated that they now believe they are capable of becoming a health professional. It is anticipated that the program will continue to be a worthwhile summer experience for rural high school students and will increase awareness of health careers and post-secondary education, hence helping to ease the transition between school and post-secondary school. In addition, it would appear that after participating in the Med Quest program, rural students are able to make more informed career choices about their future.

CHAPTER 5

SUMMARY CONCLUSIONS AND RECOMMENDATIONS

This chapter summarizes the major findings relevant to the problem under investigation, reports the conclusions reached in the study, and offers some recommendations for action and future investigation.

Summary

More attention is now being focused on the rural areas of this Province with respect to health care and recruitment of health personnel. Due to the lack of health personnel in rural areas, more time and money are being invested into the future of our rural high school students. The main objective is to encourage these students to pursue a health career since they are more likely to go into rural practice than their urban counterparts.

It is suggested in the literature that students from rural areas do not have the same opportunities as urban students. In an attempt to broaden their career choice and provide encouragement for study in a health field, a variety of programs for high school students have been developed and implemented. The Associated Medical Schools of New York (PREP and STEP), the enrichment programs of Xavier University and Baylor College of Medicine, The Shad Valley Program in Canada,

Science Quest at Queen's University, and Science Camp and Biology Camp at Memorial University are just some of many successful programs offered in North America. Recruitment of rural and underrepresented students is a national problem.

The Med Quest Program developed by the Faculty of Medicine at Memorial University of Newfoundland, to promote health careers, is comparable to these other programs. On a provincial level, the program is attempting to reach the age group who are making decisions about courses, post-secondary education, and possible career choices. Most professions pull their potential candidates from high schools since the literature suggests that most college students select their courses during their high school experience. Recruiters make special efforts to mold and influence that choice through career days and academic counsellors. Recruitment programs will have an optimum impact on recruitment for rural practice only if they begin by promoting health profession careers among rural high school students and through contact with health personnel instill in them that they too are capable of attaining such a career.

The 1991 Med Quest program had 125 students (62% female, 38% male) attending the program. During the program students were asked to complete questionnaires, a Pre-Med Quest questionnaire and Post-Med Quest questionnaire. From the analysis performed on the collected data, there was information provided about the program, its operation, and the students attending.

The curriculum did not change in terms of health areas presented, but more

emphasis was stressed on hands-on learning and student participation. There is a growing concern both in Newfoundland and on a national level, about increasing the awareness of science and technology among our youth, therefore students were shown the technology applied in the health science areas. To complement the program for 1991, sessions were held in the History of Medicine, University Student Affairs / Division of General Studies, and Hematology. There was more variety offered in the evening activities to help students adjust not only to residence life but also help them meet other students from around the province.

The results of the evaluation were used to answer three research objectives: whether the program is affecting career choice of the student and in which area(s); the influence on students' selection of courses; and if there has been a change in students' perception to attain a health career.

The respondents (87.4%) indicated that Med Quest was affecting their career choice. Comparing the Pre- and Post- Med Quest questionnaires the interest in career areas such as Medicine, Nursing, Surgery, and Pediatrics decreased while the interest in Physiotherapy and Pharmacy increased. The "other health career" category increased substantially by 7.8%. Exposure to Med Quest broadens the career choices of the students. In the Follow-up questionnaire, the results of career choice were compared to the 1990 Pre- and Post- Med Quest questionnaire results. The most notable changes are the decrease of interest in Physiotherapy, Pharmacy and Medicine; but "Other Health Careers" only increased significantly. The number of

respondents who chose "Other Health Careers" may have increased due to: exposure to Med Quest experience, more time to think about health career areas to pursue and the influence of parents, peers, and school personnel. Following the Med Quest program, the participants ought to be able to make more informed career choices.

As Med Quest participants are graduating from high school, the percentage of high school science courses being taken is decreasing accordingly. Therefore, it is necessary to use the results of the Follow-up questionnaire to determine what courses the students are pursuing in post-secondary institutions. The students were pursuing Physics, Chemistry, Biology, and Psychology with a mean of 66%. The grades received were in proportion to those received by an average student attending the same courses. The students were pursuing courses required for entry into a health field and were faring well. It is evident that Med Quest has provided the encouragement for the participants to take science courses in high school and post-secondary school, and the majority are pursuing this direction.

When asked how Med Quest influenced career choice, students actually responded by stating that they believe they are capable of becoming a health professional due to exposure of Med Quest. If it was not specifically stated, then indirectly it comes out in the comments like: "feel encouraged", "better appreciation of health professionals", "knowledge broadened because of Med Quest experience", and "reinforcement of career choice." All comments involved the students' perception of their self-confidence and abilities regarding the future and their career

goal(s).

Conclusions

Recruitment initiatives are being implemented to counteract the lack of health personnel in rural areas of the province. This is a national problem since most regions of North America are addressing this issue. The Med Quest program, a long-term initiative of the Faculty of Medicine, has been developed to attract rural high school students to pursue a health career since rural students are more likely to return to a rural area than their urban counterparts. This study has been a summative evaluation of the Med Quest program to determine its viability in fulfilling its objectives on an interim basis and predict long-term success.

The results of the evaluation, through questionnaire implementation and data analyses of the 1990 and 1991 participants, have shown that Med Quest is broadening the student's career choice due to the presentation of a variety of health careers and specialties within the program. Of the respondents now attending a post-secondary institution, many are pursuing pure science courses and have grades comparable to an average first year student. Med Quest has provided encouragement for the participants to take science courses in high school and post-secondary school, and the majority are pursuing this direction. The vast majority of respondents reported that they now believe they are capable of becoming a health professional due to this

exposure to Med Quest.

Overall, the Med Quest program has been successful as 243 high school students (118 - 1990, 125 - 1991) indicated that they have had a positive educational experience which on a short-term basis, appears to be meeting its objectives. The data suggest that participants are in a position to make more informed career choices relative to health care professions. On a long-term basis, however, it is difficult to determine the outcomes of the program at this time, but it is anticipated that the program will continue to be a worthwhile summer experience for students and will increase awareness of health careers and post-secondary education. It is anticipated that within the next 2-4 years, health schools should begin to receive applications from Med Quest alumni.

Recommendations

The following are recommendations emanating from the analysis of data collected in this study:

- (1) Revise admission requirements such that students will be selected by criteria such as minimum grade requirement, teacher recommendation, student desire to enter a health career or learn more about the area, and extra-curricular activities.
- (2) Continue to encourage "hands-on" sessions that involve student participation.
- (3) Group several health areas to encourage students to choose among the ones they are most interested in.
- (4) Encourage the Cabot Institute of Applied Arts & Technology to participate in the program.
- (5) Continue to emphasize the importance of science and technology as it applies to the health sciences throughout the program.
- (6) Encourage health schools to put on admissions application forms a question about whether the student attended Med Quest or had heard about Med Quest. This will assist in long-term evaluation.
- (7) Start an alumni association to help provide contact and encouragement for studying the sciences and pursuing a health career; in addition to

the follow-up questionnaire.

- (8) Redesign the questionnaires to ask more specific questions that apply to program objectives.
- (9) Suggest choices for responses which will avoid multiple responses per question.

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APPENDIX A

**HIGH SCHOOL FOR HEALTH PROFESSIONS
FOLLOW-UP SURVEY OF HSHP GRADUATES - 1987, 1988 & 1989**

1. Name: _____

2. Current Address: _____

City

State

Zip Code

Telephone: () _____

3. Home/Parents/Permanent Address (If Different):

Address: _____

City

State

Zip Code

Telephone: () _____

Parents' Occupation: _____

4. General Information:

Mother: _____

Date of Birth: _____

Father: _____

Sex: Male _____ Female _____

Marital Status: Single _____ Married _____ Divorced _____

Children: Number _____

Year you graduated from HSHP: _____

Ethnic Background (Circle one): Asian American Indian Black Hispanic White

5. College or Universities Attended Since Graduation from HSHP:

College Years of Attendance Major

Grade Point Average: _____

6. **Employment Since Graduation:** _____

7. **Current Career or Career Objective:** _____

8. **Are you planning to attend graduate/professional school?** _____
Name of Institution _____
Expected Date of Graduation. _____
If so, what will be your major? _____
(law, medicine, dentistry, etc.)
Have you taken any qualifying examination(s) for graduate training (GRE, MCAT, DAT, etc.)?
If so, which test _____ Score(s) obtained: _____
9. **Special recognition(s) received since HSHP graduation.**
(List scholarships, include amount, admission to special programs, etc.)

10. **Special activities you are now engaged in (e.g. clubs, organizations, church groups):**

11. **At this time in your life, do you think that you will be able to reach your career goals?**
(Check one)
 Have already attained career objectives
 Definitely will be able to attain career objectives
 Possible will be able to attain career objectives
 Doubtful that I will be able to attain career objectives
12. **To what degree have the following factors helped you in your career pursuits?**
(Please rate each item by circling the number that best applies).

	Helped Very Little		Neutral		Helped Very Much
HSHP academic preparation	1	2	3	4	5
HSHP academic achievement	1	2	3	4	5
your aptitude	1	2	3	4	5
your persistence/endurance	1	2	3	4	5
your health	1	2	3	4	5
your religion	1	2	3	4	5
HSHP counselling support	1	2	3	4	5
parental support	1	2	3	4	5
financial support/scholarships	1	2	3	4	5
other, please specify _____					

13. To what degree have the following factors constrained or held back your career pursuits? (Please rate each item by circling the number that best applies).

	Constrained Very Little		Neutral		Constrained Very Much
HSHP academic preparation	1	2	3	4	5
HSHP academic achievement	1	2	3	4	5
your health	1	2	3	4	5
parental support	1	2	3	4	5
your aptitude	1	2	3	4	5
financial support/scholarships	1	2	3	4	5
HSHP counselling support	1	2	3	4	5
other, please specify _____					

14. Include any other information about yourself that you feel is relevant (use additional sheets if necessary).

APPENDIX B

PRE-MED QUEST QUESTIONNAIRE

Name: _____

Date: _____

1. Age: _____ Grade Completed: _____

2. What science courses are available at your school?

_____	_____
_____	_____
_____	_____

3. Name science courses and number completed or currently enrolled.

_____	_____
_____	_____
_____	_____

4. Name science courses enroled in next year.

(A) _____	(C) _____
(B) _____	(D) _____

5. Name 3 careers you know of in the health professions.

(A)	_____
(B)	_____
(C)	_____

6. Indicate the education requirements needed to enter professional schools for careers you listed in question 5. (e.g. 1 year, 2 years, or bachelor degree from university, etc.)

(A) _____

(B) _____

(C) _____

7. Where could you find additional information regarding your three choices in question 5?

8. How would you finance your post-secondary education?

Parent's income ____ Your own income ____

Student loan ____ Other (please specify) ____

9. How did you learn about Med Quest? (You may check more than one response)

Guidance Counsellor ____ MUN ____

Teacher ____ Career Day ____

Health Professional in your community ____ Visitor to your school ____

Library ____ Friends ____

Other ____

10. Have you thought of your career plans when you finish high school?

YES ____ NO ____

If YES go to question 11.

If NO go to question 13.

11. What career do you wish to follow?

12. Why do you wish to follow this career? (e.g. role models, interest in science, personal experience, etc.)

13. Additional comments

14. Optional: What was your overall average during the 1990-91 school year? ____

Thank you for completing this questionnaire!

POST-MED QUEST QUESTIONNAIRE

Name: _____

Date: _____

- | | Strongly
Disagree | | | | Strongly
Agree |
|--|----------------------|---|---|---|-------------------|
| I. General Arrangements | | | | | |
| 1. The purpose of MED QUEST was clearly stated. | 1 | 2 | 3 | 4 | 5 |
| 2. The registration process was clear and convenient. | 1 | 2 | 3 | 4 | 5 |
| 3. MED QUEST was well organized. | 1 | 2 | 3 | 4 | 5 |
| 4. The physical facilities were comfortable and appropriate. | 1 | 2 | 3 | 4 | 5 |
| II. General Instructions | | | | | |
| 5. The objectives of MED QUEST were clearly stated. | 1 | 2 | 3 | 4 | 5 |
| 6. The materials used enhanced my learning. | 1 | 2 | 3 | 4 | 5 |
| 7. As the result of Med Quest I feel comfortable to attempt use of the new knowledge and skills I have acquired. | 1 | 2 | 3 | 4 | 5 |
| 8. The instructors seemed knowledgeable about the subject. | 1 | 2 | 3 | 4 | 5 |
| 9. The instructors' presentations were stimulating. | 1 | 2 | 3 | 4 | 5 |
| 10. The instructors' presentation were clear. | 1 | 2 | 3 | 4 | 5 |
| 11. The instructors answered questions well. | 1 | 2 | 3 | 4 | 5 |
| 12. The activities of Med Quest were appropriate to the objectives. | 1 | 2 | 3 | 4 | 5 |
| 13. Overall, Med Quest was a valuable learning experience. | 1 | 2 | 3 | 4 | 5 |
|
 | | | | | |
| 14. What did you enjoy most about this week? | _____ | | | | |
| | _____ | | | | |
|
 | | | | | |
| 15. What did you dislike most about this week? | _____ | | | | |
| | _____ | | | | |
|
 | | | | | |
| 16. What changes do you think could be made to the program? | _____ | | | | |
| | _____ | | | | |

17. Evaluation.

(a) What career(s) do you wish to follow after high school?

(b) Why do you wish to follow this career? (i.e. role models, interest in sciences, personal experience)

III. Did Med Quest influence your choice of career?

1. Yes ___ 2. No ___

If YES - How?

IV. Comments please. _____

**1990 MED QUEST
PARTICIPANTS FOLLOW-UP QUESTIONNAIRE**

1. Age _____

2. Check one that best describes your current status?

- attending high school (go to 3)
 enrolled in a post-secondary institution (go to 9)
 employed full-time (go to 11)
 unemployed (go to 12)
 other (please indicate)
- _____
- _____

Go to 12

3. Grade level enrolled during academic year 1990-91 _____

4. What science courses are available (offered) at your school?

_____	_____
_____	_____
_____	_____
_____	_____

5. What science courses have you completed in previous years or are currently enrolled (1990-91)?

Completed previous years

Enrolled 1990-91

_____	_____
_____	_____
_____	_____
_____	_____

6. If attending high school next year (1991-92), what science courses do you plan on taking?

7. What was your overall academic average for school year 1989-90 prior to attending Med Quest?

8. What was your overall academic average for the current school year (1990-91).

Go to 12

9. Name of Post-Secondary Institution attended during academic year 1990-91.

10. Program of Study 1990-91
(Note: If University General Studies, list science courses completed/enrolled and mark received?)

Go to 12

11. Occupation _____

Go to 12

TO BE COMPLETED BY ALL

12. What career do you wish to follow?

13. Why do you wish to follow this career?

THANK YOU FOR COMPLETING THIS QUESTIONNAIRE!

Please return to: Office of the Dean
Faculty of Medicine
Memorial University of Newfoundland
St. John's, NF
A1B 3V6

Please return by: May 31, 1991



