FINAL EXTERNAL EVALUATION

of the

"Health Care Evaluation and Management Skills" Course
Faculty of Medicine, University of Toronto

International Development Research Centre Project 3-P-87-0200

Indra Pathmanathan, M.D.

Ascher Segall, M.D.

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TABLE OF CONTENTS

VII FINDINGS, DISCUSSION AND CONCLUSIONS

ACKNOWLEDGEMENT

The evaluation team wishes to express its sincere appreciation to the staff and participants in the "Health Care Evaluation and Management Skills" course for their courtesy, openness and collaboration. Special thanks are due to the course directors, Dr. C. Bombardier and Dr. M. Fanning who organized the site visit. We wish to make clear that all views expressed in this report are those of the team and do not necessarily reflect the opinions of the International Development Research Centre.

I EXECUTIVE SUMMARY

The "Health Care Evaluation and Management Skills" course was started at the Faculty of Medicine, University of Toronto in 1985. It was designed to enhance the research and management skills of senior physicians from medical schools and health policy advisors from developing countries. Seed money was provided by the Rockefeller Foundation and the course was linked to the Foundation's International Clinical Epidemiology Network (INCLEN). From 1988 through 1990 the course received a grant from the International Development Research Centre (IDRC) which included eight fellowships each year for participants from developing countries.

This is the final external evaluation under the IDRC grant. The purpose is to assess the course and to make recommendations about future support. The evaluation team consisted of Dr. Indra Pathmanathan, Head, Unit of Research and Education, Public Health Institute, Ministry of Health, Kuala Lumpur and Dr. Ascher Segall, Co-Director of the Center for Educational Development in Health at Boston University. The evaluation process included a site visit from 30 May through 1 June 1990 and a review of pertinent documents.

During the course of the three year period under review, thirty-three participants from fifteen countries were enrolled in the course. Of these, ninety-one per cent are physicians and the major responsibilities of forty-two per cent are in the domain of public health. No explicit selection criteria were seen at the time of the site visit. We have inferred from various sources that candidates are expected to hold relatively senior positions

from which they can promote epidemiologic and health systems studies, mobilize resources and provide managerial support for such research and facilitate the use of research findings to improve health care. These positions are likely to be within clinical settings in association with INCLEN, Clinical Epidemiology Units or in Ministries of Health.

A review of bibliographic information on the participants does not clearly establish that all would meet these criteria. What is striking is the diversity of their potential to have a significant impact on health research in their respective countries. Our conclusion is that there is a need to establish explicit selection criteria and to ensure that they are uniformly applied.

The curricular framework for the three month course has been quite stable. It offers participants a combination of several approaches to learning; a) didactic instruction based on a set of integrated instructional modules (e.g. research design, biostatistics, management, health policy formulation), b) opportunities to apply the knowledge acquired through individual and group projects and protected time for the follow-up of individual interests through independent study and informal group interaction. The latter is cited by participants as being an important facet of the educational environment.

The current balance among the modules and between components of the course that are clinically oriented and those that relate to public health applications appears reasonable. An important determinant of this balance is the proportion of participants who will be returning to positions in either clinical medicine or public health. There are mechanisms in place to modify the balance if this is warranted as the course evolves.

In our judgement, the content areas, methods of instruction and degree of curricular flexibility are appropriate to the educational objectives and characteristics of the participants. The course itself is characterized by responsiveness to feedback from participants. Modifications are introduced as learning needs are identified with increasing precision.

We reiterate our opinion that the course has considerable face validity. The curriculum and instructional staff are such that the likelihood of attaining course objectives appears to be high. Inferences of this nature, however, cannot replace careful evaluation and follow-up. The paucity of systematic information in these two areas that was at hand at the time of the site visit means that our appraisal relies heavily on judgements concerning the educational process rather than its outcomes. The former, though clearly positive, could not be verified systematically by evaluation results or the follow-up findings. Our conclusion is that these two dimensions of the course need to be strengthened.

The three month course, in our judgement, occupies a specific niche in the spectrum of training programs for senior health personnel from developing countries; this in terms of emphasis on management in relation to research and evaluation for the improvement of health care. The need for this type of training continues and is unlikely to diminish in the foreseeable future. This is true not only for the developing world but for industrialized countries such as Canada as well.

Given this projection and our assessment of the course, we recommend that IDRC support be extended over the next three to five years. During this period it would be offered for academic credit. The potential for organizing similar courses at regional training facilities in developing countries, in association with Toronto, could be explored. In addition, the feasibility of incorporating the course into a broader continuing education program in the development and management of health research at the University of Toronto could be examined.

Little is to be gained, at this point, by attempting to predict in detail the direction the course will take over the medium to long term. As indicated earlier, we feel that the perceived need for people with a type of training provided by the course will continue to grow worldwide. The University of Toronto clearly has the capability to provide such training. The directors of the program have demonstrated much creativity, initiative and leadership. These are certainly the elements out of which can be fashioned a dynamic training program which can continue to grow as the importance of health research is increasingly recognized.

II RECOMMENDATIONS ABOUT FUTURE SUPPORT FROM IDRC

We recommend that IDRC support for the "Health Care Evaluation and Management Skills" course at the Faculty of Medicine, University of Toronto, be extended for an additional three to five years. This support should include eight to ten fellowships per year and sufficient resources to conduct a systematic and comprehensive follow-up of graduates.

We further recommend that this support be contingent on:

1. Formulation of a) clear and explicit criteria for selection among candidates for admission to the course, b) a plan of action for recruiting candidates so as to support several existing international and national initiatives to build a critical mass of research managers and health program managers in each country to develop research and its uses in support of health development and c) a set of procedures to ensure that the criteria will be applied uniformly to all candidates irrespective of sponsorship.

2. Presentation of a plan of action for systematic and comprehensive follow-up of graduates. The purpose is to determine how graduates are applying competencies acquired through the course as well as their impact on the production and utilization of epidemiologic and health systems research in their respective countries. A summary and an analysis of the follow-up findings are to be included in each annual report.

3. Specification of how student competencies are to be evaluated during and at the end of the course. Evaluation need not necessarily consist of tests or examinations. It might equally well be based on the assessment of projects carried out by students within the program of studies. Such an approach might be more appropriate for a course designed for senior health personnel. A summary and an analysis of the evaluation results are to be included in each annual report.

4. Review of the course framework including the constituency served, content and methods of instruction and organizational arrangements; this in light of the findings, conclusions and options described in the present report. During the course of the review the advisability of implementing selective options is to be considered. Among these options are:

Course Content and Methods of Instruction

a) Greater integration among the instructional modules through more effective use of integrative exercises and by encouraging better communication among module co-ordinators.

b) Increased use of integrative case studies to illustrate relationships between epidemiologic and health systems studies in clinical settings and similar research which is oriented to public health applications.

c) Increased flexibility in the program of studies through a wider choice of electives.

d) Additional protected time and appropriate facilities for independent study and informal group interaction.

e) Greater emphasis on instruction in the social sciences as they relate to epidemiologic and health systems research.

f) Review of the course content in order to meet the educational needs of managers of research units or departments that produce research in support of health development and of health program managers in Ministries of Health who would be the 'consumers' of such research.

Organizational Arrangements

a) Offering the course for academic credit.

b) Establishing an advisory panel of representatives from developing countries.

c) Exploring the feasibility of offering related courses at selected regional training sites in developing countries.

d) Incorporating the course within a broader program of continuing education in management and research at the Faculty of Medicine, University of Toronto.

III INTRODUCTION

RATIONALE

In 1985, a course was started at the University of Toronto that was designed to enhance the research and management skills of senior physicians from medical schools and health policy advisors from developing countries. It was an outgrowth, in part, of an earlier World Bank initiative in China in the field of medical education. The experience in China underscored the difficulties likely to be encountered in integrating a new discipline such as clinical epidemiology into the mainstream of academic medicine.

Investigators with appropriate competencies in clinical epidemiology are, of course, an essential element. Their productivity, however, both in quantitative and qualitative terms is determined in large part by the environment in which they work. A principal determinant is the level of support and allocation of resources for clinical epidemiology within the institutional setting and from external sources. A second is the way the research enterprise is managed. The two determinants are related. How they interact can be of critical importance as to whether the new directions in clinical research can be sustained.

Clinical epidemiology may be seen as one approach to increasing the relevance of hospital based research to the solution of health problems in developing countries. Recognition that the viability of this approach calls for a support infrastructure as well as technical capabilities appears to have been a major consideration in the decision to establish a course

in "health care evaluation and management skills" at the University of Toronto. This decision, it would seem, owed at least as much to the dynamic leadership of Dr. Mary Fanning and Dr. Claire Bombardier and the backing they received from Dr. John Evans as it did to an institutional commitment on the part of the University of Toronto. Drs. Bombardier and Fanning had participated in the earlier World Bank initiative in China under the leadership of Dr. Evans.

EVOLUTION

The first course in 1985 was attended by three participants from China and was made possible through seed money from the Rockefeller Foundation. There were seven participants in the second (1986) and eight in the third (1987) years of the course. Funding was provided jointly, with the Rockefeller Foundation supplying the core course support and the International Development Research Centre providing fellowship support. During this initial period close links were established with the International Clinical Epidemiology Network (INCLEN).

The Network, sponsored by the Rockefeller Foundation, seeks to encourage and support the introduction of Clinical Epidemiology Units (CEUs) at centres of academic medicine throughout the developing world. Training in clinical epidemiology is provided for physicians who generally have already acquired credentials in a clinical specialty instruction. It is offered over a period of at least one year through programs at Clinical Epidemiology Research and Training Centres (CERTs) in the U.S.A., Canada and Australia. It is anticipated that

graduates of these programs will return to their home institutions where they will engage in research within the framework of newly created Clinical Epidemiology Units.

The constituency and the intent of the Toronto course were seen as different from those of the CERTs. The former was designed for relatively senior individuals with a potential for leadership in positions where they could mobilize support for the emerging CEUS. Its intent was to enhance the capacity of such individuals to fulfill this supportive role by increasing their research and management skills through intensive short term training over a period of about three months.

From the onset this course was characterized as "a pathfinding venture".[1] The expectation was that its constituency as well as its educational objectives would be defined with increasing precision through a process of successive approximations. Both would become clearer as experience with successive groups of participants was acquired and the impact of graduates on the development of clinical epidemiology was assessed. This appears to have been the pattern over the years. The course directors have consistently sought to refine the criteria for selecting candidates and to modify course content and methods of instruction on the basis of feedback from successive cohorts of participants.

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[1]Conference call with Dr. John Evans; 31.5.90

SIGNIFICANT DEVELOPMENTS

Several developments were to have a significant impact on this process. One relates to the pattern of funding with IDRC joining the Rockefeller Foundation as an external source of support. The IDRC perspective is similar to but not identical with that of the Foundation. The constituency of the course from the IDRC point of view, in addition to senior physicians in clinical settings, includes health administrators and others concerned with the interface between research and the formulation and implementation of health policy. This implies extending the scope of the course to include population-based epidemiology, health economics and health policy analysis for decision-making.

A second development has been the evolution of the INCLEN approach over the past several years. Clinical epidemiology is being defined in terms that are broader than in the earlier formulations. The result is an increasing emphasis on community-based studies and the utilization of research findings in public health as well as in clinical decision-making. This trend has been evident in the increasing proportion of studies by CEU's that are population-based and in the steps taken by INCLEN to encourage more effective communication and co-operation with Ministries of Health and Departments of Community Health. In parallel, increasing importance is being given to collaborative relationships between clinical epidemiology, the social sciences and health economics in the training of INCLEN fellows and in the design and execution of their subsequent clinical and health systems research.

A more recent development appears to be an incipient interest on the part of the Faculty of Medicine at the University of Toronto in exploring the implications of the course for its own academic concerns. These range from the teaching of epidemiology in relation to clinical and public health decision-making to preparing physicians who will provide care for Toronto's multi-ethnic and multi-cultural population. While these dimensions of the course do not fall within the immediate terms of reference of this review, they may emerge as important determinants of its future prospects.

These developments, highlighted by a growing congruence between the IDRC and Rockefeller positions, have had important consequences for the Toronto course. Participants have been recruited in increasing numbers from public health settings giving rise to greater heterogeneity of professional backgrounds, interests and career pathways. The substantive content and methods of instruction have been responsive to the changing characteristics of participants. There is also greater variability in the expectations of how graduates will apply their newly acquired competencies in the development and utilization of clinical and health systems research.

The impact of each of these changes will be examined in more detail in subsequent sections of this report. It will suffice at this point to underscore the challenges faced by the course directors in adapting recruitment procedures and the educational process to an evolving set of priorities.

Awareness of these elements of background to the course informed much of the review process. It provided a framework for our observations during the site visit in Toronto. It was critical to our understanding of why key decisions were taken and the significance of their consequences. It also helped in exploring a range of scenarios concerning the future of the course.

IV PURPOSE AND TERMS OF REFERENCE

This is the final external evaluation of the project "Health Care Evaluation and Management Skills" - University of Toronto, 3-P-87-0200. The principal purpose is to provide the International Development Research Centre with an assessment of the course and recommendations about future support from IDRC. It is anticipated that the findings will be used in considering such issues as the future of the course in Canada, possible alternatives, the level of input from developing countries and the nature of the selection process.[1]

The terms of reference for this evaluation include:

"1) Quantitative and qualitative analysis of the achievement of the objectives set in the Project Summary (copy enclosed).

2) Assessment of the appropriateness of the course framework including:
   - course content - choice of topics, sequencing, relationship/consistency with objectives, balance and cohesiveness of the various modules, strengths and deficiencies;
   - opportunities for fieldwork and for pursuing topics of personal interest;
   - networking and links to other institutions;
   - selection of participants, trainers and guest speakers;
   - venue, available university facilities and resources (other departments, library, computers, space, etc.)

3) Outcome of the course in terms of participant satisfaction, subsequent careers, and transfer to own country.

4) Future of the course:
   - short term;
   - medium and long term;
   - alternatives;

5) Summary and recommendations about future support from IDRC."[2]

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[1]Conference call with Evelyn St. Onge, MD; 31.5.1990

[2]Communication from Evelyn St. Onge, MD; 11.5.1990

V THE EVALUATION TEAM

The evaluation team consisted of Dr. Indra Pathmanathan and Dr. Ascher Segall.

Dr. Indra Pathmanathan has until recently been Head of the Division of Research and Education in the Public Health Institute which is a national training institute within the Ministry of Health in Malaysia. She has been responsible for setting up and developing the Health Systems Research program in Malaysia where the emphasis has been on the use of research as a tool to support management decision-making for health development. In this capacity she has designed and conducted training for senior managers and policy makers to support and utilize research and for academic and health staff on research methodology. She is a member of the Advisory Group on Health Systems Research, WHO, Geneva and has served as a WHO Consultant in Botswana to evaluate the HSR program and has conducted Inter Country Training courses in HSR for the Southern African Region in Harare and for the Western Pacific Region in Kuala Lumpur. She was also the coordinator for two WHO/DANIDA Inter Regional Training courses for senior managers of research institutes from each of the six WHO regions., She is the author of several training modules which are the outcome of these international training initiatives and which will be soon published under IDRC/WHO sponsorship. She has also served as a consultant to a WHO Study Group on the use of Information and Research in Health manpower Development and to

prepare the background document for the Technical Discussions at the 1990 World Health Assembly on Health Systems Research. She is currently Assistant Director of Health in charge of the Maternal and Child Health Program in the Ministry of Health, Malaysia and served for the last six years as a member of the International Program Committee of the International Planned Parenthood Federation (IPPF).

Dr. Ascher Segall is currently Co-Director of the Centre for Educational Development in Health, Boston University, Boston, Massachusetts, U.S.A. He has wide experience in medical education, health personnel development and research in health manpower development. His academic background includes appointments at the Harvard School of Public Health and Boston University in the fields of epidemiology and education. Dr. Segall has had a close association as consultant and visiting professor, over a number of years with the development of community-oriented medical schools at Ben-Gurion Faculty of Health Sciences, Beersheva, Israel, the Jimma Faculty of Health Sciences, Jimma, Ethiopia, and Suez Canal University, Ismailia, Egypt. He has recently participated in the evaluation of programs for training health personnel in Pakistan, Tunisia and Tanzenia. For several years Dr. Segall worked as a member of the Division of Health Manpower Development, World Health Organization, Geneva, where he pioneered new approaches to decision-linked research in the field of manpower development.

VI THE EVALUATION PROCESS

The evaluation team began its work in Toronto on 30 May 1990 with an informal meeting with the course directors, Dr. Claire Bombardier and Dr. Mary Fanning. The site visit was concluded on 1 June 1990.

During the interval, the team met with faculty responsible for co-ordinating individual course modules, participants in the 1990 course and members of the administrative staff. The team also spoke with the Dean of the Faculty of Medicine, University of Toronto and the Dean of International Relations. Conference calls were held with Dr. John Evans and with Dr. Evelyn St. Onge of IDRC. There were also opportunities for informal exchanges with members of the staff and participants in the course. The course directors made every effort to be available throughout the site visit and provided supplementary information as the need arose. The site visit schedule appears in Appendix 1.

In addition, the team had access to selected documents concerning the course. These included curriculum materials used over successive years and records of follow-up among past participants in the course. We also reviewed the application for funding submitted by the University of Toronto, the IDRC Project Summary and the notification of award from IDRC to the University of Toronto. Annual reports in connection with the course covering 1988, 1989 and part of 1990 (January to March) were consulted as were relevant ancillary documents.

VII FINDINGS, DISCUSSION AND CONCLUSIONS

ACHIEVEMENT OF OBJECTIVES

FINDINGS

GENERAL OBJECTIVES

The general objective of the course as specified in the Project Summary (1987) is to "train senior physicians, health administrators and other health policy makers in the analytical, decision-making, managerial and evaluation skills required to develop health policy initiatives and to implement and evaluate appropriate health programs".[1]

This is a pretty tall order for a course of about three months. It specifies who is to participate in the course, the skills that are to be taught (course content) and the areas in which they are to be applied.

a) Participation in the Course

The distribution of course participants by country, profession and primary work setting is shown below in Table 1.

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[1] Project Summary: Training in Health Management (Canada) - Phase III; 1987; IDRC.

TABLE 1

Distribution of Course Participants (1988-1990)

by Country of Origin, Profession and Primary Work Setting

Year	Countries Represented	Total Number of Participants	Number of Physicians	Primary Work Setting	
				Clinical	Public Health
1988	8	11	11	6[a]	5[a]
1989	7	11	10	6[a]	5[a]
1990	11	11	9	7[b]	4[b]
Total	15	33	30	19	14

Over the grant period (1988, 89, 90) there have been 33 participants in the course of whom 30 (91%) were physicians. Among the participants 58% are primarily involved in clinical activities while the major responsibilities of 42% are in the domain of public health. Of the 15 developing countries represented, 5 are in Africa, 4 are in South East Asia, 3 are in Western Pacific and 3 are in South America.[c]

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[a]Based on document entitled "Past Participant Follow-Ups" (VAD:INCLEN 3.5 BIOSPART.89)

[b]Based on document entitled "Health Care Evaluation and Management Skills - 1990" (undated)

[c]Based on regions as defined by WHO

b) Course content

In each successive year, the course consisted of a series of integrated instructional modules. The distribution of these modules according to the four skill areas specified in the general objective is shown in Table 2. Shown in brackets after the module title is the number of weeks it is taught.

TABLE 2

Distribution of Instructional Modules

According to Skill Areas

Skills Specified in General Objectives	Titles of Related Instructional Modules		
	1988[1]	1989[2]	1990[3]
Analytic	Biostatistics and Data Management (3)	Biostatistics and Data Management (3)	Biostatistics and Data Management (2)
Decision-Making	Health Economics and Health Policy (1)	Health Economics and Health Policy (2)	Health Economics and Health Policy (2)
Managerial	Management (2)	Management (2)	Management Skills (3)
Evaluation	Research Design (4) Information Skills (1)	Research Design (4)	Research Design (4)
Total	11 weeks	11 weeks	11 weeks

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[1]Health Care Evaluation and Management Skills; Annual Report; 1988

[2]Health Care Evaluation and Management Skills; Annual Report; 1989

[3]Health Care Evaluation and Management Skills; Annual Report; 1990 Brochure; 1989

As can been seen in Table 2, the framework for the course has been quite stable over the three year grant period. The instructional modules clearly correspond to the four skill areas specified in the general objectives. A tendency towards increasing emphasis, in terms of time allocation, on managerial and decision-making skills can be noted.

Our review of the course material as well as our discussions with faculty and participants indicate that opportunities for active student involvement in the learning process are provided throughout the instructional modules. These include development of a teaching package relevant to a developing country, a research protocol and a plan for institutional development within a multi-disciplinary research/evaluation unit.

While retaining its overall framework as shown in Table 2, the course has systematically been responsive to feedback from participants. Qualitative and quantitative changes were made in successive years as the learning needs of participants were more accurately defined. This element of flexibility with respect to both course and instructional methods has been a consistent characteristic of the course.

c) Areas of Application

The general objective specifies that the skills taught be those "required to develop health policy initiatives and to implement and evaluate appropriate health programs".[1]

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[1]Project Summary: Item 6; Objectives; page 3

A module addressing issues of health policy has been included in the curriculum in each year. In 1990, for example, this module is entitled "Health Economics and Policy" and is taught during a period of two weeks. The course description emphasizes exploration of the "sequential process from Research Design to Health Policy".

Insofar as other areas of application are concerned, implementation and evaluation of appropriate health programs particularly programs in epidemiologic and health systems research are accorded high priority in the modules on research design and management. In addition, individual and group projects are tailored to the substantive interest of participants. In this way, the probability is high that they are relevant to the challenges of advancing health research in developing countries.

SPECIFIC OBJECTIVES

Curriculum (a and b)

Three Specific Objectives are presented in the Project Summary. The first two, as shown below, constitute an outline of the basic concepts and principles to be included in the curriculum.

"a) introduce the basic concepts of management, organizational change, health research, health economics, health policy and analysis for decision making with an increased emphasis on population-based and descriptive epidemiology as well as on program evaluation;

b) introduce principles of evaluation including information retrieval, research design, data collection and data management to be applied to morbidity, mortality and health care utilization statistics in the student's own country."

It is to be noted that these objectives are formulated in terms of subject areas to be "covered" rather than competencies to be acquired. Perusal of the course schedules, review of the learning materials and discussions with the staff and the current group of course participants suggest that the topics specified have been incorporated into one or more of the instructional modules.

There seems to have been a trend over the past three years towards more emphasis on the management of research and evaluation and on the interface between research and decision-making in the formulation of health policy. Concomitantly, the orientation of the module on biostatistics and data management has been somewhat modified. This reflects a growing recognition that becoming more informed consumers of statistical studies is of higher priority to participants than developing technical proficiency in their production.

The curriculum is further discussed in a subsequent section of this report. At this point we simply note that according to our observations the program of studies does encompass the concepts and principles delineated in specific objectives a and b.

Evaluation and Follow-up (c)

The third specific objective, as shown below, concerns evaluation and follow-up of former students.

> " c) to evaluate and follow-up former students of the course in order to ascertain the application of course contents and to better define future course modifications."

Evaluation and follow-up both have two related but not identical purposes. The first is to ascertain how graduates are applying what they have learned. The second is to obtain feedback to be used in modifying the curriculum so that it remains responsive to the needs of participants.

Application of Course Content

Systematic information on the impact of the course on the performance of graduates was not at hand at the time of our site visit. We did review a document entitled "Past Participant Follow-Ups" (VAD: INCLEN 3.5; BIOSPART 89) which provides some information about participants in the 1988 and 1989 courses. The post-training information varies from no entry to a detailed account of the graduates' activities following completion of the course. Sources of the post-training information in this document are shown in Table 3.

TABLE 3

Sources of Post-Training Information

Concerning 1988 and 1989 Graduates[1]

Source of Information	Number of Graduates
Correspondence with graduate	6
Personal contact with graduate	4
Correspondence and personal contact	4
Source unspecified	2
No information	6
Total	22

When information is available, it is primarily anecdotal and in many instances provides little insight on the extent to which the graduate is actively applying the knowledge and skills acquired through the course and the impact on health research.

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[1]Document entitled "Past Participant Follow-Ups"
(VAD: INCLEN 3.5; BIOSPART 89)

In the absence of an analysis and summary of the follow-up information, it was difficult for us at the time of the site visit, to form a credible picture of the ways in which graduates are applying what they learned as well as their impact on the use of research and evaluation to improve health care.

We did review a "participant follow-up questionnaire" sent earlier to graduates of the course. It appears as Appendix 2 to this report. The questionnaire elicits information concerning both enhancement of personal capabilities and impact on research activities. As of June 1, 1990, the response rate was too small to permit any conclusions.

Feedback for Course Modification

Feedback concerning the advisability of modifying the course, on the other hand, has been obtained fairly systematically - at least at the end of the course each year. At that time, comments and suggestions are elicited in writing and through group discussion. Less systematic is feedback from the perspective of graduates who have been working in their own environment for some time.

The course has been modified in response to this feedback. Examples include a loosening of the highly structured course format to allow for more time for independent and informal group learning and greater emphasis on the acquisition of managerial skills.

DISCUSSION

OBJECTIVES

The findings we have reported refer specifically to the objectives of the course as formulated in the Project Summary. In reviewing the pertinent documents and after discussions with the course directors, it is our understanding that the intent of the course can be expressed with somewhat more focus. Research and in particular epidemiologic and health systems research conducted in clinical and community settings emerge as central to the course objectives. Better management of the research process, more effective utilization of research findings in making clinical and public health decisions and more efficient mobilization of resources in support of research are three pivotal facets of research which are implicit in the course objectives.

The focus on facilitating the production and utilization of epidemiologic and health systems research distinguishes the Toronto course from instruction at other INCLEN Centres for Epidemiologic Research and Training, on the one hand, and from general courses on management in health on the other hand. At sister CERTs the emphasis is on the methodology and techniques of conducting studies in clinical epidemiology. While the role of research and evaluation in improving health care may be touched upon in general courses on health management, it is not usually a central theme of instruction.

The Toronto course thus occupies a specific niche in the spectrum of training programs for senior health personnel from developing countries; this in terms of its emphasis on management in relation to research and evaluation for the improvement of health care. Findings described earlier in this section relate to the course objectives as defined in the Project Summary. They are, however, also applicable in the more focused context of this discussion. Indeed, the three facets of research identified above are incorporated into the various instructional modules.

The Toronto Course would have the potential to achieve much greater impact if it is feared specifically to support several existing initiatives aimed at strengthening the capacity for research in support of health development in developing countries. These include, for example, Clinical Epidemiology Units, HSR Focal Point Units (WHO), research units developed under the sponsorship of the IDRC, International Health Policy Program, the Network of Community Oriented Schools of Health Sciences, etc. Managers of such institutions would benefit from this course. Also it is being increasingly recognized that senior health managers in Ministries of Health who are the potential users of research findings would benefit from this type of course. If it is explicitly recognized that managers of research institutions and managers of health programs have different but very interrelated educational needs, the statement of objectives, selection of participants, and the focus of the course content could be improved.

FOLLOW-UP OF GRADUATES

We are aware of the many logistic difficulties in the follow-up of graduates. As shown in Table 3, however, some form of contact with at least 16 out of the 22 1988 and 1989 graduates had been established by the end (?) of 1989. If up-dated to June 1990, the number would probably be even larger. What was lacking, at least up to the time a standard questionnaire was distributed, was an effort to acquire the same categories of information about all graduates.

Anecdotal information is useful and may, at times, provide critical insight. It does not, however, replace systematic and standardized follow-up as a basis for assessing the impact of the course on participants and on the research environments in which they work. In this connection, consideration might also be given to complementing information provided directly by graduates with assessments by their employers concerning their impact on the production and utilization of research.

Another caveat relates to the length of follow-up. At the time of the site visit, the first cohort of participants (1988) under the present IDRC grant had completed their studies about two years ago and the second cohort one year ago. For several reasons, including high job mobility, this period of follow-up may be too short to detect certain of the potential outcomes. Significant outcomes may appear much later.

In the interim, however, decisions about the future of the course will need to be taken. Given the qualitative and quantitative limitations of the outcome information acquired through follow-up, these decisions, of necessity, will have to rely more heavily on judgements concerning the instructional process rather than on assessment of its outcomes. One way of improving the situation would be to supplement this report with the results of the follow-up questionnaire which could be included as an annex.

CONCLUSIONS

The general and specific objectives formulated in the Project Summary express the intent of the course with respect to participants, the program of study and evaluation and follow-up of graduates. Our conclusions in this section address each of these facets in broad terms and only within the context of the stated objectives. The various facets will be considered in further detail in subsequent sections of this report.

PARTICIPANTS

Quantitative targets for participants have been met. Virtually all (91%) are physicians. The categories of participants stipulated in the general objective, however, are not mutually exclusive. Senior physicians can be "health administrators or other health policy makers"[1]. Clearly, the course has attracted few participants who are not physicians by training.

On the other hand, a high proportion of physician participants (42%) is engaged in public health activities. This distribution is consistent with the underlying intent of the general objective. It does, however, point to the need to reconsider whether enrollment of participants from backgrounds other than medicine should constitute a priority for the course in the future.

PROGRAM OF STUDIES

The course content clearly corresponds to the skill areas specified in the general objective and encompasses the "basic concepts" and "principles"[2] delineated in the specific objectives. The methods of instruction encourage active involvement of participants in the learning process. This raises the probability that they will enhance their skills and actual performance in addition to increasing their knowledge base.

The relative weight to be accorded each subject-area is not stipulated in the objectives. It has been empirically determined, in part, as a function of learning priorities expressed by participants. In our judgement, this is an appropriate way to ensure that instruction, while remaining within the framework of the objectives, is responsive to the needs of participants.

EVALUATION AND FOLLOW-UP OF PARTICIPANTS

On the basis of information on hand at the time of the site visit, we conclude that "the necessary knowledge and skills to translate health needs into policy and to design programs to put that policy into action"[3] have been taught over the past three years. Documentation of the extent to which the knowledge and skills were actually acquired by the participants and applied in their subsequent professional activities was insufficient to draw conclusions concerning the graduates as a group.

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[1]Project Summary; Objectives; General Objective, page 3

[2]Project Summary; Objectives; Specific Objectives a and b, page 3

[3]Project Summary; Results; page 3

ASSESSMENT OF THE APPROPRIATENESS OF THE COURSE FRAMEWORK

COURSE CONTENT

FINDINGS

INSTRUCTIONAL MODULES

From 1988 through 1990, the course consisted of a series of integrated instructional modules. As indicated earlier in this report the modules, in our judgement, are consistent with the course objectives. They have been described elsewhere.[1,2,3] This section is therefore limited to observations made at the time of the site visit or through our review of annual reports for 1988, 1989 and the first three months of 1990. The most recent course brochure (1989) appears as Appendix 3.

RESEARCH DESIGN MODULE

Approximately one-third of the course (4 weeks) is devoted to the methodology of research design. It includes methods used in clinical settings (e.g. clinical trials) as well as those used in population-based studies (e.g. program evaluation). The balance between them reflects the relative weight accorded to the INCLEN and the non-INCLEN components of the course. While originally heavily weighted towards clinical epidemiology, increasing attention, in recent years, has been given to techniques of population-based epidemiology and health systems research.

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[1]Course brochure; 1987

[2]Course brochure; 1989

[3]Project Summary; Methodology: pages 4-3

Related to this module is the development by each participant of a research protocol. Although time constraints constitute a limiting factor, the faculty has expressed satisfaction with the quality of the protocols. There is evidence that in some instances participants have further developed or implemented the protocols on their return home. Feedback from students suggests that this module is meeting their needs.

Since 1988, Dr. Howard Abrams has been the co-ordinator of this module. Dr. Abrams is Assistant Professor of Medicine in the Faculty of Medicine, University of Toronto and a member of the International Clinical Epidemiology Network. He has a particular interest in the application of clinical epidemiology techniques to problems in international health.

MANAGEMENT SKILLS

The utility of training in management for the course participants has been increasingly recognized since 1988. In 1990, the time allotted to this module was increased by 50% (2-3 weeks). The format and content of this module has been responsive to student feedback and has been modified accordingly. At present "emphasis is placed on the formation of an appropriate design and management style for a multi-disciplinary research unit".[1]

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[1]Course brochure; 1989

In 1988 and 1989, each participant worked on an individual management problem of his/her choice as well as a group management exercise in conjunction with the INCLEN fellows at McMaster University. It has been suggested that the research protocol development project could be replaced by the analysis of a specific management problem if this is more relevant for individual participants. This indicates recognition by participants that the management training they receive in Toronto can serve them well in their future careers.

Dr. Bruce Fried has been co-ordinator for this module since the inception of the course in 1985. He is Associate Professor in the Department of Health Administration at the University of Toronto. In addition to teaching the module, Dr. Fried has prepared guidance materials on the management of clinical epidemiology research for the INCLEN Network.

BIOSTATISTICS AND DATA MANAGEMENT

In 1988 this module underwent a large content revision "aimed at simplifying the concepts to accommodate a short teaching time span without compromising the integrity of the material". In 1990, the time was reduced by one-third (3 to 2 weeks). Becoming informed consumers of biostatistical research was recognized as being of higher priority to participants than acquiring a wide range of methodological competencies. In the same vein, feedback from participants includes the suggestion that certain parts of this module be offered on an elective basis. According to Ms Dominique Caron there is much less emphasis on computer/SAS and more optional periods are scheduled.

Ms Caron is completing her Master Degree in Biostatistics at the University of Toronto. She assumed the responsibility of module co-ordinator in 1990 and is a member of the INCLEN Biostatistics subcommittee.

HEALTH ECONOMICS AND POLICY

A major theme of this module is "the sequential process from research design to health policy".[1] The health policy section was revised in 1988. In 1989, student feedback indicated that the module was problematic. Some felt that it should be maintained while others suggested that it be phased out and replaced by exercises integrating some of the issues addressed in other modules (e.g. the management and research design modules).

This module is the joint responsibility of Dr. Claire Bombardier and Dr. Mary Fanning, Co-directors of the course. Dr. Bombardier is Associate Professor in Medicine and Health Administration, University of Toronto. She is also Director of the Clinical Epidemiology Program at the University of Toronto. Dr. Fanning is Assistant Professor in Medicine. She has had a long-standing interest and association with international health development and the INCLEN network.

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[1] Course Brochure 1989

OTHER CURRICULAR COMPONENTS

While medical education appears in the course description no time allocation is indicated. According to the course schedules for 1988 and 1989, one hour is devoted to an "overview of the medical-education module". It is our understanding that the development of a "teaching package relevant to a developing country" has been an important vehicle in the teaching of this subject.

Two "integration modules" were designed for the 1988 program. The aim was "to provide the participants with common themes throughout the three months". One was a case study of malaria control in Colombia and the second dealt with HIV infection. In 1990 a similar purpose was to be served by a problem-oriented group project which incorporates four perspectives; hospital, professional organization, public health and Ministry of Health.[1]

In 1988, as noted earlier, a "management exchange" involving fellows at the McMaster CERT and participants in the Toronto course took place. The two groups met to exchange perspectives and to share problems and solutions related to CEU development and management. A similar joint management workshop was held in 1989.

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[1]Dr. M. Fanning Personal Communication; June 12, 1990

RELATIONSHIPS AMONG THE MODULES

During the three years under consideration (1988-1990) relationships among the modules remained fairly stable. As might be expected, there were variations from year to year but these took place within a well anchored curricular framework. Efforts to integrate the modules has been encouraged. A limiting factor in this respect appears to be the logistic difficulties in bringing together the co-ordinators of the several modules. Sequencing of the modules has followed a consistent pattern which has been well received.

FIELD WORK AND INDEPENDENT STUDY

From its onset, the course has not sought to provide field experience as a major component of the curriculum. It may well be that time constraints and logistic considerations were involved in this decision. Efforts, however, have been made to enable participants to meet with health officials in both clinical and public health settings. As far as we could gather, the benefits derived from these encounters were less than had been anticipated. Often, for example, communication was hampered by differences in perception of the purpose of the encounter.

The course has been highly structured. This stems, at least in part from the desire to transmit to the participants as much as possible within the limitations of a course last three months. Feedback from participants, while appreciative of the intent of this approach, pointed to several of its drawbacks. These include potential information overload and relatively little time to engage in independent study or follow-up individual interests.

The course directors have not missed the point. With succeeding years, the level of didactic instruction has been somewhat reduced. As a consequence, participants have more time (and energy) for independent learning and for informal group activities. The latter provide opportunities to exchange ideas and to learn from the experience of others. These opportunities are considered by participants to add an important dimension to the learning environment provided by the course.

NETWORKING AND OTHER LINKAGES

Since its inception, the Toronto course has been closely linked with the INCLEN network. Collaboration takes several forms. INCLEN provides potential support for the course and takes part in the selection of participants.

Joint educational undertakings are conducted with other CERTs. Examples include the combined exercise in management with INCLEN fellows from McMaster University, the development of learning materials in management for use within the network and the preparation of a Collaborative Research Workshop for the 1989 Goa meeting.

Members of the faculty attend and actively participate in international INCLEN meetings which, in addition to the Goa meeting have included conferences in Pattaya (1988) and Pueblo (1990).

This close association with INCLEN has been a major factor in shaping the course and in determining its educational priorities. Changes in INCLEN policies are also reflected in the course. Recent examples are discussed in the introductory section of this report.

In 1987, representatives of the World Health Organization met in Toronto with the course directors and several module co-ordinators. Since then, liaison has been maintained with the Health Systems Research Unit of WHO in Geneva on such matters as identification of potential participants and ways of strengthening the health systems research and social science components of the course.

Collaborative relationships have also been established with the Pugh Foundation program in health policy and the Network of Community-Oriented Educational Institutions for Health Sciences. At the 1990 Pueblo meeting these and other organizations active in the field of international health research issued a declaration calling for the strengthening of their collaborative efforts. Additional impetus for co-operation was provided by the recommendations of the Commission on Health Research.

The World Bank as well as the United States Agency for International Development are aware of the course and have sponsored individual participants. The Canadian International Development Research Center is, of course, a principal source of support for the course. In addition, IDRC through its regional offices has collaborated in identifying potential participants while members of the central staff in Ottawa have been guest lecturers in the course.

Networking among the graduates themselves has been slow to get off the ground. The logistics of communication are problematic. At present, contact among at least some of them takes place at the annual INCLEN meetings.

COURSE LOGISTICS

In general, the course appears to run smoothly. In all probability this is due in large measure to the dedicated efforts of the course directors and administrative staff and to the high level of commitment on the part of the module co-ordinators. Nevertheless, the nature of the course and various constraints give rise to certain problems such as the following:

a) In certain instances briefing of participants prior to their arrival in Toronto was inadequate -- leading to unrealistic expectations.

b) Learning materials including text books and computer facilities were not always available in sufficient quantity.

c) Lack of advance information on upcoming learning activities was often an impediment to adequate preparation.

Problems cited by 1990 participants include the lack of a "home base". There was no permanent common space where they could get together for informal interaction; not at the hospital, the University nor in the building where most of them live. Also mentioned was insufficient co-ordination among preceptors.

DISCUSSION

According to our findings, the Toronto course provides participants with the possibility of attaining the educational objectives through a combination of the following approaches to learning:

a) didactic instruction based on a set of integrated instructional modules

b) opportunities to apply the knowledge acquired through individual and group projects

c) protected time for follow-up of individual interests through independent study and informal interaction among participants.

This mix, in our opinion, provides a learning environment that is well suited to the course participants who, for the most part, are at a senior level in their respective fields and bring to the course considerable personal experience. Our overall impression is therefore that the course framework is indeed appropriate in terms of both its consistency with the educational objectives and its congruence with the characteristics of participants.

BALANCE BETWEEN CLINICAL AND PUBLIC HEALTH COMPONENTS

Within the context of this favourable assessment, we have identified several issues that merit further consideration. Foremost is the balance between the clinical and public health components of the course. As pointed out in the introductory section, this issue has its origins in the progressive broadening of the INCLEN concept of clinical epidemiology and the priorities of IDRC.

The balance in the curriculum between clinical trials and their use in clinical decision-making as distinguished from population-based epidemiologic studies or health systems research and their use in formulating public health policy is at issue in the area of research design. In the field of management, the corresponding balance involves management considerations in relation to the operation of Clinical Epidemiology Units on the one hand and those that arise in conducting research in public health settings including Ministries of Health on the other. An important determinant of this balance is the proportion of participants who will be returning to positions in clinical medicine or public health.

At least two ways of addressing this issue in the curriculum can be envisaged. They are not mutually exclusive. The first involves some form of tracking within the course. This could enable participants to concentrate on those facets of research methodology which are likely to be most useful to them in the future.

A second approach would be to extend the integrative problem-solving exercises that are already part of the curriculum. The use of epidemiology and health systems research in solving health problems could then be considered from the perspectives of both clinical medicine and public health. Participants from Clinical Epidemiology Units and those from Ministries of Health would thus have opportunities to better understand the implications of research for both the care of individual patients and the formulation of public policy.

The use of screening procedures, for example, might be used as the basis for such a case-study in which the public health as well as the clinical dimensions are examined. Enabling all participants to take part in exercises of this type might pave the way to better understanding and subsequent collaboration between those from hospital-based epidemiology units and those from public health settings.

OPTIONS FOR CURRICULUM REVISION

According to the course directors, the program of studies has reached "content maturity". We concur in this assessment. While the curricular framework has remained stable, changes in individual modules and in other components of the course have been introduced. The modifications have included a greater degree of integration among the modules, strengthening of the social science component and increasing curricular flexibility to facilitate independent study and informal group learning.

In our opinion, these modifications have led to improvement in the course and the momentum generated should be maintained. Integration could be more effective if module co-ordinators are brought together more frequently. The probability of doing so might be higher if budgetary resources are specifically allocated for this purpose. Increased use of integrative case studies could also be of value in strengthening linkages among the modules.

Efforts have been made to introduce appropriate elements of the social sciences into the curriculum. According to the course schedules for 1988 and 1989 the input (aside from the management module) was relatively limited. Ways of increasing this input within existing modules or as a separate and possibly optional module might be considered.

The trend towards greater curricular flexibility is to be commended. Increasing the protected time for independent study and offering certain portions of the curriculum on an elective basis are further steps that might be taken to follow through on the initial measures. In this way, there would be more opportunities for students to tailor their studies to individual interests and learning styles.

On a related matter, making available common space as a "home base" where participants can gather informally could further encourage the sharing of ideas and experience. Use of an apartment in the building where most of the participants are staying might prove feasible for this purpose.

The directors have maintained a "responsive environment" within the course. This is characterized by a readiness to adapt the program of studies to the learning needs of participants. This augurs well for the likelihood that the modifications discussed above and others which may be suggested from time to time will receive careful consideration and, if warranted, will be implemented.

Research Design Module: The perspective of this module could be broadened by including social research methods, particularly as applied in Health Systems Research.

A good meeting ground for health program managers and researchers is the phase of 'problem identification and problem analysis' prior to the formulation of a research project. This could also serve as a link between the Research Design and Management modules. Consideration could be given to incorporating this topic into the relevant module.

Management module: The documentation on this module does not adequately reflect the highly interactive approach adopted in the module to utilize and build on the rather considerable management experiences of course participants. This is one of the attractive features of the module.

Areas that are conspicuous by their absence are 'Communication' and 'Social Marketing' both of which are important since participants are leaders who will have to build consensus and support for new ideas, initiate and support change among colleagues and peers in their own organizations or in sister organizations.

CONCLUSIONS

1. The course framework, including the content areas and the methods of instruction, is appropriate in relation to the educational objectives and the characteristics of participants. The program of studies enables resources at the University of Toronto to be used effectively and efficiently to provide training in the production and management of health research. In our opinion, the training is sound and relevant to the roles graduates will assume in their home countries.

2. The current balance among the instructional modules and between components of the course that are clinically oriented and those that relate to public health applications appears reasonable. There are mechanisms in place to modify the balance if this becomes warranted as the course evolves.

3. A recent trend toward greater curricular flexibility in what has been a highly structured course is to be commended. Increasing the elective component and scheduling more time for independent learning affords opportunities for participants to tailor their studies to individual interests and learning styles.

4. The course is characterized by its responsiveness to feedback from participants. Modifications are introduced as the learning needs of students are identified with increasing precision. These changes, however, take place within an overall curricular framework that has shown considerable stability over the three year period under review.

5. Through its links to INCLEN and collaborative relationships with WHO, IDRC and the Pugh Foundation, the course is clearly within the mainstream of international efforts to improve health care in developing countries through epidemiologic and health systems research. Networking among graduates of the course, on the other hand, faces problems of technical difficulties in communication.

SELECTION OF PARTICIPANTS

FINDINGS

SELECTION CRITERIA

How participants are selected determines the composition of the student body. This, in turn, is a pivotal element in the process of curriculum development. It is also closely linked to the likelihood that graduates will have the impact on health research that is anticipated. Criteria for selection and procedures for identifying potential participants therefore warrant close examination.

We did not see a written set of explicit selection criteria. Rather, they were implicit in the Project Summary[1] in the recent course brochure (1989) and in the descriptions we received of how participants are enrolled. From what we have inferred, candidates are expected to hold relatively senior positions from which they can promote epidemiologic and health systems studies, mobilize resources and provide managerial support for such research and facilitate use of the research findings to improve health care.

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[1]Project Summary; Methodology; Item 13; page 7

These positions are likely to be within clinical settings in association with Clinical Epidemiology Units or in Ministries of Health. There is also growing recognition of the need to target those who are in a position to strengthen the liaison and collaboration between the clinical and public health sectors. Candidates from different professional backgrounds in health care are eligible for enrollment. This formulation, of the intent in selecting participants is consistent, to the best of our knowledge, with the information we received at the time of the site visit.

SELECTION PROCEDURES

Up until now, most candidates for participation in the course have been identified through the INCLEN network. As directors of other CERTs gain a clearer understanding of the Toronto course they are better able to identify appropriate individuals for admission to the course. Announcements are sent to the directors of Clinical Epidemiology Units and visibility of the course at INCLEN meetings is high.

Identification of potential candidates through IDRC has been somewhat more problematic. It is not clear that the IDRC regional officers are completely informed about the nature of the course and the admission criteria. Logistic difficulties in the past have also led to cancellation on the part of applicants who had been accepted.

OUTCOMES OF THE SELECTION PROCESS

Selected characteristics of participants from 1988 through 1990 are shown in Table 1 (page 23). Of the 33 participants 30 (91%) are physicians and 14 (42%) have major responsibilities in public health.

In reviewing the biographical information on the 33 participants, one is not convinced that all would meet the criteria described above. The validity of inferences based on this information is open to question. It does, however, suggest considerable heterogeneity among the participants insofar as these criteria are concerned. Some appear to be of senior-stature -- in positions to have significant impact on health research. Others appear to be more suited for the type of studies offered at other INCLEN Clinical Epidemiology Research and Training Centres. In many instances it is difficult to make a judgement from the available information. What is striking is the diversity of participants with respect to the potential on their return home to fulfill the expectations implicit in the admission criteria, as we understand them.

DISCUSSION

Our findings, although based on incomplete information, do underscore the need to develop an explicit set of criteria for selecting participants and to ensure that they are uniformly applied in considering all candidates, irrespective of sponsorship. This could, on a priori grounds, increase the probability that the course, which we judge to be sound and relevant, is taken by individuals who stand a reasonable chance of making a difference in the way epidemiologic and health services research is carried out in their home countries.

An interesting suggestion concerning the selection of participants envisages that at least for certain countries candidates be selected from both clinical and public health settings. In addition to enhancing their individual capabilities, these participants might use the occasion of being in Toronto together to explore ways of strengthening the co-operation between them. This could open the way to new and more productive patterns of collaboration in the production and use of health research to address national priorities.

In their evaluation summary of 1989, the course directors refer to student ideas concerning recruitment of candidates in the following terms "...one of the major issues is to identify non-physicians...". In our opinion, the major concern should be to identify individuals who are in a position to have a significant impact on research in support of health development. Such individuals may be in departments of social research, health economics or management, health policy research, etc. who would be willing and able to gear the research efforts of their institutions to health needs of their countries.

CONCLUSIONS

1. There is considerable heterogeneity among participants in respect to their potential impact on epidemiologic and health systems research in their home countries. As a result of this diversity, expectations concerning the capacity of at least a portion of graduates to influence the course of health research may be unrealistic.

2. Consideration should be given to developing an explicit set of selection criteria and ensuring that they are widely circulated and applied to all applicants irrespective of sponsorship.

3. For certain countries, selection of participants from both clinical and public health settings might be tried. Bringing them together within the framework of the Toronto course may open the way to new and more productive patterns of collaboration between them.

EVALUATION AND FOLLOW-UP

FINDINGS

As indicated in earlier sections of this report, the course, in our judgement, has considerable face validity. This means that the content and methods of instructions are such that the likelihood of attaining the course objectives appears to be high. Inferences of this nature, however, cannot replace careful evaluation and follow-up; evaluation to assess the impact of the course on student competencies and follow-up to determine the impact of graduates on progress in health systems research in their own countries. Information of both types is needed to complete the picture.

Evaluation of student performance while the course is in progress can be helpful in identifying learning problems and taking corrective measures. According to the course schedule, an evaluation session is held weekly. Given the relatively small student body, it is likely that these sessions and individual contacts between participants, teachers and preceptors suffice to identify and seek solutions to learning problems as they arise. This approach is consistent with the first phase of evaluation as described in the Project Summary.[1]

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[1]Project Summary: Evaluation Item 15: page 7.

Evaluation at the end of the course or other appropriate unit of instruction provides information on the extent to which participants have acquired the competencies implicit in the course objectives. It is not clear whether this type of evaluation is conducted systematically. Broad statements such as "final presentations by the participants were exceptional" appear in the annual reports. The extent to which such statements are based on methodological observations and consistent criteria is not evident. Our findings concerning participants performance therefore are less than complete.

The situation is similar with respect to the follow-up of graduates which is also discussed in an earlier section of the report (pages 32 to 33). Some form of follow-up contact has been established with at least 16 of the 22 graduates (1988, 1989). Documentation of their activities that we have reviewed was anecdotal. We did not see an analysis or summary of the follow-up information.

We are not aware of a formal evaluation process having been "undertaken with the help of a consultant" for which budgetary resources wer allocated.[1] Nor did we see reference to the "in depth evaluation... (after the fifth year of the program)..." mentioned in a document signed by G.R. Bourrier, Director, Fellowships and Awards Division.[2]

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[1]Project Summary; Evaluation; Item 15; page 7-8

[2]Document signed by G.R. Bourrier (attached to Program Summary); page iv; Item 9d.

A participant follow-up questionnaire has been distributed to graduates. It consists of 25 questions. Question 6 in particular elicits information concerning the actual performance of graduates in utilizing the skills which the course sought to transmit. At the time of our site visit the response was as yet insufficient to draw any conclusion. If the questionnaire is eventually returned by a high proportion of graduates the findings should prove useful in making informed decisions about the future of the course.

DISCUSSION

The paucity of systematic evaluation and follow-up information constitutes a limiting factor in our assessment of the course. Our appraisal therefore relies heavily on judgements concerning the educational process rather than on its outcomes.

Evaluation of performance need not take the form of tests and examinations. Understandably, these methods of evaluation may be considered inappropriate for a group of senior health personnel. But this need not imply the absence of any form of evaluation. Appraisal of individual and group projects could be an equally valid approach to evaluation. At the same time it would probably be more acceptable. Projects to be evaluated might include the research protocol, the plan for institutional development and the teaching package.

Self assessment by participants might also be considered. This could have the added advantage of encouraging participants to develop patterns of independent study of which self-assessment is an indispensable first step.

Attitudinal changes should be monitored as well. From our discussions with current students and after our review of comments by past participants we surmise that changes in self image may be among the important educational outcomes of the course. At the outset, participants, for the most part, consider their capabilities in the development and health research as rather rudimentary-enabling them to accomplish little. As the course progresses they develop feelings of confidence in their ability to cope with the future challenges they will face in stimulating and managing this type of research.

This change of self-image seems to relate as much to the educational environment and process and to interaction with peers as it does to specific competencies that are acquired. As is the case with knowledge and skills, further documentation of these attitudinal outcomes is needed.

Regular and well ordered follow-up of graduates is essential. Only in this way can the full impact of the course on their professional activities and through these on the progress of health research be ascertained. Such follow-up might well include, in addition to direct feedback from graduates, assessments by the institutions or agencies that employ them. This could provide another perspective on outcomes of the course.

CONCLUSIONS

1. Ongoing formative evaluation of participant performance during the three month course of studies is adequate and provides useful feedback to both participants and instructors.

2. There appears to be little summative evaluation which gives an indication of how well participants, by the end of their studies, have met the educational objectives of the course.

3. There is some evidence that, in addition to acquiring knowledge and skills, participants gain increased confidence in their ability to cope with the challenges they will face in the development and management of epidemiologic and health systems research. This attitudinal outcome and change of self-image may be a significant determinant of their impact on the progress of health research.

4. Follow-up information on hand at the time of the site visit provides only a partial picture of the impact the course has had on the professional activities of graduates and on their leadership in the advancement of health research. Findings from the recent follow-up questionnaire may help to complete the picture.

VIII FUTURE OF THE COURSE

SHORT TERM

The Toronto course, in our judgement, occupies a specific niche in the spectrum of training programs for senior health personnel from developing countries; this in terms of emphasis on management in relation to research and evaluation for the improvement of health care. The need for this type of training continues and is unlikely to diminish in the foreseeable future. This is true not only for developing countries but for industrialized countries such as Canada as well.

Our findings suggest that the course has many strengths and is doing a good job in helping to meet this need. We feel that the program of studies is sound and relevant to the roles projected for graduates in the development and management of epidemiologic and health systems research; this despite indications that the selection process can be improved and the evaluation and follow-up strengthened.

Under these circumstances we would see the course continuing, more or less in its present format, for an additional three to five years. During this period it would be offered for academic credit. The potential for organizing similar courses on a regional basis could also be explored. In addition, the feasibility of incorporating the course into a broader program of continuing education could be examined. Such a program would be open to candidates meeting the admission criteria from Canada as well as from the developing countries.

While the course would continue in its present format, consideration might be given to introducing certain modifications designed to strengthen the educational process. These could include implementation of recommendations included in this report as well as measures to broaden the base of support for the course. The latter might include program and fellowship support from other agencies in addition to INCLEN and IDRC. In these efforts it may be possible to build on earlier collaboration with the World Bank, WHO, USAID, and the Pugh Foundation.

At the same time, the option to decentralize by making available similar training in one or more regions of the developing world could be explored. While such an approach may be appealing on a priori grounds, its feasibility and the market for such training facilities would need to be carefully tested. Guided by the experience of the Toronto course, efforts in this direction might be undertaken during the three to five year period. An advisory panel consisting of representatives from developing countries might be helpful in this connection as well as in other matters relating to the course. If successful, such "echo" courses might be offered on an on-going basis in association with the University of Toronto.

The relationship of the course to other programs in the Faculty of Medicine at the University of Toronto will need to be determined. These range from leaving it to remain as a free standing academic offering -- to its integration within a broader University program. The latter approach, if taken, for example, within the framework of the Faculty's program of continuing education might have several salutary effects. These include a strengthening of the administrative infrastructure and a possible decrease in the cost per participant through resource sharing. In addition, participants would have more opportunities for interaction with Canadian colleagues and the course would be more a part of the academic mainstream. These advantages, would, however, have to be weighed against possible disadvantages. It is to be anticipated that by the end of the next three years the course will have found its place within the academic environment.

In the short term, then, we envisage that the momentum of the course will be sustained and that it will continue to train leaders capable of developing and providing managerial support for health research in their respective countries. Modifications may be introduced that reflect the experience gained in 1990 as well as suggestions made in this report, particularly in the areas of selecting participants, evaluation and follow-up of graduates.

MEDIUM AND LONG TERM

The future of the course over the medium and the long term will depend on how it evolves during the next three to five years. Several scenarios are possible in respect to both the role of the course in training leaders for developing countries and its relationship to other programs at the University of Toronto.

In one scenario "echo" courses are offered in one or more developing countries. The role of the Toronto course now includes the preparation of instructors for the peripheral training site(s) and the provision of academic support for them. If the approach succeeds, fulfilling these new roles might turn out to be a principal function of the Toronto course. Under another scenario, the peripheral courses fail to take root and demand for participation is low. The Toronto course then continues to meet the needs of developing countries in its present format.

Insofar as its relationship to the rest of the Faculty of Medicine is concerned the course might continue to be free standing as is now the case. Alternatively, it could catalyze the development and become part of a more extensive program in the promotion and management of epidemiologic and health systems research. Such a program might, in addition to addressing the needs of the developing world, prepare leaders in health research for Canada and other industrialized countries. The possibility of interest in such a facility on the part of the Ontario government was raised by Dr. John Evans in our discussions with him.

At this point, there is little to be gained in attempting to predict in detail the direction the course will take over the medium and long term. Some of the key determinants such as the level of commitment and support by the Faculty of Medicine, University of Toronto, and the availability of extra mural resources are unknown. As indicated earlier in this section, we feel that the perceived need for people with a type of training provided by the course will continue to grow worldwide. The University of Toronto clearly has the academic capability to provide such training. The directors of the program have demonstrated much initiative and strong leadership in bringing the course to where it is today. These are certainly elements out of which can be fashioned a dynamic training facility which can continue to grow as the importance of health research is increasingly recognized.

Response to External Evaluation Recommendations

As part of the review process the course directors were invited to respond to the recommendations of the external evaluation team. Their response is presented below.

1. Criteria for our selection of candidates has existed in the past, although it is admittedly general. The target audience includes a senior level physician or administrator who is seen as a potential agent of change. As well, participants should demonstrate a capacity to identify and implement change in their organization.

   All potential candidates are required to complete a standard application form and submit two letters of support from their institution. Within this application form, participants are asked what their expectations of the Toronto course are, as well as what they see as their role upon their return home. The responses to the application and the reference letters, serve as major screening tools.

   Toronto has always been committed to the concept of critical mass development. In the past, we have attempted to select candidates from an INCLEN CEU and Ministry of Health/Public Institution, in order to promote linkages (Uganda 1988, Bogota 1989). Our future plan of action includes utilizing our own graduates to expand access to regional and national programmes and key personnel.

   A strong information-sharing network within INCLEN currently exists. CEU Directors and Sponsors and Training Centre faculty, are well aware of Toronto's mandate. This consequently makes targeting and selection easier. It may be useful to increase communication with other agencies to ensure that the perception of the Toronto course is consistent.

2. Follow-up of the Toronto graduates has been pursued since the course was initiated. However, most of the follow-up information is received second-hand, and therefore open to several interpretations. Ideally, we believe that the most appropriate follow-up would be to site visit each participant. However, financial and faculty limitations make this a virtually unachievable goal.

The course relies upon INCLEN site visits and annual meetings to carry out its individual and group-oriented follow-up. Additionally, graduates were asked to complete a formal questionnaire in May 1990, to assess the impact of the Toronto course. The results of this questionnaire are currently being collated. A questionnaire was also developed for each Graduate's superior, however the identification and implementation of this follow-up was problematic and reevaluation was required.

Anecdotal follow-up is also received in response to Course Newsletters and other correspondence.

We would strongly support the inclusion of all evaluative tools/results and other correspondence, in our annual narrative report to IDRC.

3. Measurement of participant competencies have been informally addressed in the past. Assessment of multiple projects have been delivered verbally, by both faculty and fellow participants, but written appraisals have not been supplied.

   We support the proposal for written evaluation of projects, and also believe that individual evaluation meetings, held monthly, may also prove useful. Additionally, minimal criteria for continued fellowship support during the course, should be established. These may include an assessment of the participants' attendance and project completion. We do not believe that formal tests/examinations or grading systems would be useful given the seniority of the typical course participant.

4. Integrative exercises utilizing themes of Malaria and HIV infection, have been repeated in each module in previous years. These were designed to link the different instructional modules and promote a fluidity of the course curriculum. They unfortunately met with limited success. Our plan for 1991 is to develop a series of clinical and public health case studies, which we hope will fulfill the role of module linkage.

   The issue of flexibility and electives is a very difficult one. We currently incorporate two unscheduled half-days per week for independent study. As well, attendance at least one tutorial per week, in certain modules, was made optional. Given the limited duration of the Toronto course annually, we believe that additional flexibility would detract from the more formal educational process. However, we can take steps to ensure that protected time is strictly adhered to by the course faculty and organizers. Electives are not a feasible option given course time constraints and financial and faculty limitations.

We have attempted to introduce participants to some issues of social science in the past. In 1990, this process was enhanced by the fact that one of our participants was a social scientist. Our largest obstacle has been to identify a local expert in this area. In several ways, the current Management module is looked upon as having a distinct social science component. We also believe that the incorporation of qualitative research methodologies and community-oriented case studies for developing countries, will enhance the social science component of our course.

5. The inclusion of the current Toronto program in the Faculty of Medicine curriculum is an excellent idea, which has been fully explored on several occasions. We see the issues of academic credit and curriculum inclusion, as medium or long range goals. More important in the short run, is the need to maintain and strengthen the commitment and contribution of the University of Toronto.

In December 1989, INCLEN established a Management Subcommittee, which is currently piloting a management module for inclusion in the training of junior individual researchers. The Subcommittee became truly international in August, when representatives from Colombia, Mexico and the Philippines agreed to participate. We believe that the Subcommittee can and will play a major role in the replication of a version of the Toronto course, for implementation in a partner developing nation.

We have participated in the development of Management workshops for Indonesia, and have also received a request from Bogota. Additionally, the All India Institute of Medical Sciences in New Delhi, has submitted a proposal to the government for funding of a 12 day version of the Toronto course.

HEALTH CARE EVALUATION AND MANAGEMENT SKILLS

COURSE DIRECTORS:
Mary Fanning, M.D.
Claire Bombardier, M.D.

COURSE CO-ORDINATOR:
Maria Oldfield

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EXTERNAL EVALUATION

Schedule of Events:

Tuesday Evening: Dr. Pathmanathan arrives
Background Material for the program will be left for her to review in her hotel room

Wednesday Morning: Dr. Pathmanathan would like to meet with someone to get acquainted with the Short Course program.

Wednesday Afternoon: Dr. Segall arrives

Wednesday Evening: Dinner at Dr. Bombardier's house.
Cocktails at 1800.

Thursday Morning:

Appointments with Module Coordinators:

0900	-	Howard Abrams	-	Research Design
0930	-	Bruce Fried	-	Management
1000	-	Arthur Rothman	-	Medical Education
1030	-	Dominique Caron	-	Biostatistics
1100	-	Conference Call John Evans		
1130				
1230		**Unscheduled**		

Thursday Afternoon

1230	-	Claire Bombardier Mary Fanning	-	Lunch
1430	-	Meeting with 2 Groups of current fellows		

EXTERNAL EVALUATION

Schedule of Events:

Friday Morning:

0900	-	Robert Sheppard	- Dean of International Relations
1030	-	Curriculum Review	
1130	-	Evaluation Review	

Friday Afternoon

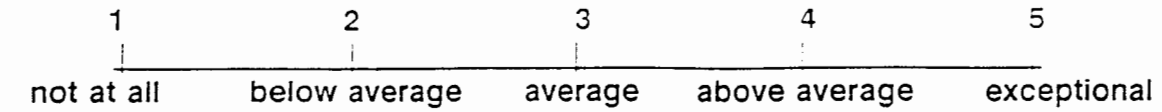
1230 1530	-	Unscheduled	
1600	-	John Dirks	- Dean - Faculty of Medicine U of Toronto
1715	-	Evaluation Discussion	- Mary Fanning, Claire Bombardier, Asher Segall, Indra Pathmanathan

Appendix 2

HEALTH CARE EVALUATION AND MANAGEMENT SKILLS

Participant Follow-up Questionnaire

Please respond to each question which utilizes a numbered scale, by **circling the number** which best represents your opinion according to the following model:



Pre-Course:

1.	How did you come to know about the Health Care Evaluation and Management Skills Course?	
2.	Did you have access to any written material about the course, prior to your acceptance?	
3.	What were your expectations of the course, prior to your arrival?	
4.	What was your role in your organization prior to attending the Toronto course?	
5.	To what extent wa the course successful in achieving the following objectives: a) To provide basic knowledge of Health Care Evaluation methodologies? Have you utilized these methodologies?	

Participant Follow-up Questionnaire

5. To what extent was the course successful in achieving its' objectives?

b) To provide basic management skills required to effectively lead the development and maturation of an interdisciplinary research/evaluation unit: 1 2 3 4 5

Have you utilized these management skills in your unit? Please expand:

c) To assist in the development of enhanced leadership, for decision making in the health field: 1 2 3 4 5

Have you utilized these enhanced skills? Please expand:

d) To assist in the development of linkages between hospital/university based clinicians and government/ community based health professionals: 1 2 3 4 5

Have you created such linkages? Please expand:

e) To provide tools to influence and improve policy creation at various levels of the health care system: 1 2 3 4 5

Have you improved policy creation at any level? Please expand:

HEALTH CARE EVALUATION AND MANAGEMENT SKILLS
Participant Follow-up Questionnaire

About the Modules: *To what degree did you:*

6.	Obtain a general understanding of research design principles?	1 2 3 4 5
7.	Learn about critical appraisal strategies for the identification of relevant teaching materials?	1 2 3 4 5
8.	Learn about the use of biostatistics and data analysis in health research?	1 2 3 4 5
9.	Learn about health economics as it applies to critical evaluation of health related literature?	1 2 3 4 5
10.	Learn about health care research and its role in the development of health policies?	1 2 3 4 5
11.	Learn about issues of organizational development and management in relation to health research?	1 2 3 4 5
12.	To what degree did each course module contribute to the achievement of the **course objectives?**	Research Design 1 2 3 4 5 Biostatistics and Data Management 1 2 3 4 5 Management 1 2 3 4 5 Health Economics 1 2 3 4 5 Health Policy 1 2 3 4 5

Your Personal Objectives:

13.	Were your **personal** objectives different from the Course Objectives?	____ Yes ____ No If yes, please expand:
14.	To what extent did the course satisfy your personal objectives?	1 2 3 4 5 Do you have any comments:

HEALTH CARE EVALUATION AND MANAGEMENT SKILLS
Participant Follow-up Questionnaire

Post-Course Activities:

15.	What is your current role in your organization?	
16.	Have your responsibilities changed since you returned from the Toronto Program	____ Yes ____ No If yes, please expand:
17.	What percentage of your time do you spend in the following activities?	Research ____% Teaching ____% Administration ____% Clinical Work ____% Total 100%
18.	Have you developed and/or participated in local training activities as a result of your Toronto program training?	____ Yes ____ No If yes, please expand:
19.	Have you developed and/or participated in any research activities since your return?	____ Yes ____ No If yes, please expand:

20.	To what extent has your organization been supportive of your attempts to implement some of the Toronto Short Course skills?	1 2 3 4 5 Please expand:
21.	To what extent has your participation in the Toronto course been important to your own professional development and advancement?	1 2 3 4 5 Please expand:
22.	To what extent have you experienced personal benefits as a result of your participation in the Toronto short course?	1 2 3 4 5 Please expand:
23.	In retrospect, do you believe that the Toronto Course was appropriate for your needs?	1 2 3 4 5
24.	Would you recommend the Toronto Course to someone else? Who do you believe the course would most benefit?	Please expand:
25.	In retrospect, what is your overall assessment of the Toronto Short Course?	1 2 3 4 5

U of T
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HEALTH CARE EVALUATION AND MANAGEMENT SKILLS

April 30 - July 27, 1990

COURSE DIRECTORS:

Mary Fanning, M.D.
Claire Bombardier, M.D.

FOR FURTHER INFORMATION, PLEASE CONTACT:

Maria Oldfield - Program Coordinator
The Wellesley Hospital
160 Wellesley St. East
Turner Wing, Room 650
Toronto, ON Canada M4Y 1J3
Ph. (416)926-7631 FAX: (416)926-4910
Telex: UT ENG 218915

Application Deadline is December 31, 1989

OBJECTIVE:

This program covers the basic skills required to effectively lead the management & development of a multidisciplinary clinical research or evaluation unit in the health field. This unit could be hospital, university, or government based. Participants are introduced to the principles of research design, biostatistics (data management), & institutional management & development.

COURSE PARTICIPANTS:

The curriculum of this intensive 3-month, non-credit course, is directed at mid-career senior physicians and/or administrators in medical schools, hospitals, and government community health programs of developing nations. Successful individuals should act as agents of change in the development of multidisciplinary research/evaluation teams & demonstrate a capacity to influence & improve policy creation in sectors of the Health Care System.

COURSE OVERVIEW:

The Health Care Evaluation & Management Skills Course began in 1985 at the University of Toronto, by Drs. Mary Fanning and Claire Bombardier. The program draws upon the expertise at the University and represents a collaborative & interdepartmental effort across the Faculty of Medicine. The Toronto Course is affiliated with INCLEN, (International Clinical Epidemiology Network), a project designed by the Rockefeller Foundation. It is also sponsored by IDRC (International Development Research Centre), a Canadian organization with a strong commitment to advancing health education in developing nations.

COURSE DESCRIPTION:

The course is conducted in group seminars & tutorials & is presented in six integrated modules:

Research Design: (4 weeks)

This module emphasizes the evaluation of effectiveness of therapies, identification of risk and prognostic factors, program evaluation, screening and diagnostic strategies, and population-based/descriptive epidemiology. Participants learn to identify major health problems and interventions, given available health services and resources.

Information Sciences: (3 days)

Participants are exposed to manual and electronic literature search methods in conjunction with several individual and group projects. These resources include Index Medicus, Grateful Med, Medline and CD ROM. Electronic mail and facsimile transmission are also demonstrated.

Management Skills: (3 weeks)

This section focuses on the development of an institutional plan. Emphasis is placed on the formation of an appropriate design and management style for a multidisciplinary research unit with particular attention paid to goal setting strategies and methods of evaluation. Concepts associated with understanding issues and strategies of organizational and individual change, are also discussed.

Biostatistics and Data Management: (2 weeks)

Emphasis is placed on biostatistics and data management in support of effective multidisciplinary research/evaluation. The practicality and applicability of computers in medical research is explored. Computers are demystified and students are exposed to a wide variety of software packages. The role of the biostatistician in research is examined.

(**Note:** Typing skills should be an asset).

Health Economics and Policy: (2 weeks)

Participants are introduced to health economic and decision analysis principles. These include cost effectiveness and cost-utility studies and decision trees. A sequential process from Research Design to Health Policy is explored. "What is health policy" and "how to influence and implement health policy changes" are also topics for discussion.

Medical Education:

Participants are introduced to the principles of educational planning, program implementation and evaluation. Application of these concepts occurs throughout the five individual modules. The role of the educational specialist is also demonstrated.

In addition to these formal modules, participants are required to prepare numerous individual and group projects. These include a teaching package relevant to a developing country, a research protocol, and a plan for institutional development within the multidisciplinary research/evaluation unit.

COURSE ORGANIZERS

Dr. Mary Fanning is an assistant professor, Dept. of Medicine, University of Toronto, with a special interest in HIV infection and AIDS. She is an active member of the Tropical Disease Unit at Toronto General Hospital and has extensive developing country experience.

Dr. Claire Bombardier is an associate professor, Dept. of Medicine/Health Administration, University of Toronto. She is also the Director of the Clinical Epidemiology Program at U of T.

Limited fellowship support is available through contributions from IDRC. A $5,200.00 (Canadian funds) tuition fee is applicable to outside funded candidates.