Strategies for Developing Research Potential in the Department of Family Medicine of the National Autonomous University of Mexico

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ABSTRACT
The experience of Research Coordination in the Family Medicine Department of National Autonomous University of Mexico (UNAM) to improve research within the discipline is presented. Four strategies have been successfully used to foster research training among family medicine faculty and residents. The challenge is to incorporate research into family practice and to improve the capacity of investigators to undertake quality research projects. The creation of research networks is viewed as a new strategy.

Key words: Research, Family Medicine, Mentoring, Education, Training.

BACKGROUND
The teaching of family medicine (FM) in Mexico began in 1970 with the opening of the first specialization course in this discipline in the Mexican Institute of Social Security (IMSS). The first generation of these specialists graduated in 1974. The National Autonomous University of Mexico (UNAM) gave academic recognition to this specialty in 1975. Activities of the Department of Family Medicine (DFM) started the same year; the first one in Latin America. DFM was given the task of organizing the academic program of this medical specialty, and in 1980 together with the Institute and Social Services for the Workers of the State (ISSSTE) and the Ministry of Health (SSA) the specialization course in FM started in these two institutions.¹ The DFM of the UNAM has developed along the years a training program that includes those aspects of clinical practice that are in connection with the most frequent problems of health in the population from Mexico, incorporating aspects related with teaching, investigation, administration of the services, public health, medical psychology and psychiatry; since 1994, this program has acquired a national character.²

In 1991, DFM implemented a program of academic improvement of its educational program. The DFM has three essential tasks in terms of research coordination: i) to develop research projects that include the main areas of knowledge in FM, ii) provide consultancy by faculty to students of the specialization course in order to achieve the development of relevant research projects and iii) the implementation of strategies that promote the formation of investigators. To execute these tasks, the professors assigned to research coordination designed four strategies: a formative one, another operational, another of diffusion and another of institutional interaction ³ (Figure 1). In this document the experiences obtained in the application of these strategies are presented, as well as the achievements and challenges that research in family medicine represents, with emphasis on the pattern Counselor-tutor-resident for developing research potential in the DFM.

Figure 1

Research Coordination Mission

Objective

To develop investigation projects which include the most important themes in Family Medicine

Strategies

Formation

Operation

Scientific Diffusion

Institutional Interaction

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FORMATIVE STRATEGY
The formative strategy is designed to train the faculty and students in research methodology specifically related to Primary Health Care (PHC) and FM. The fundamental purpose of research in FM is to generate knowledge that contributes to the resources of the discipline in terms of professional action, work places, educational profile and future research. Research in FM also tends to influence significantly the biological, psychological and social environment related with the processes of health and illness of individuals, families and the community at large.

To achieve these objectives, personnel qualified enough to carry out independent research are required. To answer the necessities of developing research potential in the DFM a model for Tutorship in Investigation Counsel-Tutor-Resident (TI-ATR) was designed as a strategy; the objective was to establish a model of oriented mentoring of tutors and residents for the development of research studies. The pattern was based on the characteristics of mentoring in family medicine, orientations and recommendations from publications related with the tutorship of residents as in the Miller's pyramid for the evaluation of clinical competence.

The paradigm is characterized by a dynamic process of longitudinal training (three years) in which training and research potential development are carried out by way of theory and practice as much for the tutor as for the resident applying the experience of an advisory investigator. The pattern TI-ATR is based on a simple principle: to study research methodology, conducting research by incorporating tutors and residents to active research projects that ensures a certain level of quality in the future researchers. In this process an academic working relationship is established between three people (advisory-tutor-resident), with clear flowing communication, showing flexibility in relationships; providing active training with reflection, critique and self-criticism.

It is convenient to make some definitions of the participants of the model TI-ATR:
- The advisor is a professor-investigator in family medicine with experience in this environment
- The tutor is a professor directly responsible for the resident's integral formation, transmission of abilities, attitudes, ethics and relative competences to the discipline, based on his/her knowledge, clinical and educational experiences.
- The resident is a doctor who has undertaken a specialization course to learn and to acquire abilities and dexterities characteristic of his/her discipline that drive him/her, with tutor's support during the course of clinical training, to the acquisition of professional competences to practice the medical specialty.

In TI-ATR the advisor forms a team with the tutor and resident to drift, organize, integrate and direct a research project intervening with greater depth in the design, conduction and analysis, so the resident supported by the tutor, can make a final thesis for the course of specialization in family medicine (CEFM).

Based on the above principles integrated teams of advisors, tutors and residents were formed, seeking to initiate research tasks preferably from the first grade of the CEFM, however, this model was also used with residents who were in the second and third grades and who had still not begun their research projects. The purpose of this pattern was to show the efficiency of the TI-ATR model in ideal circumstances (first year of the residence) and in those cases where time was already a factor of pressure, such as for residents of second and third grades.

The consultancy was imparted mainly in the DFM, the tutorship offered was through actual presence with groups, through phone or through emails. The consultancies that were carried out in this tutorship process were imparted by the advisor, offering the tutors simultaneous participation in a greater capacity. Through this mechanism tutors learned the use and application of educational tools of the advisor.

In cases where the tutor was not present during the consultancy, the session was audio recorded and later on shared by the resident with the tutor through the audio tape.

During the tutorship sessions among advisor-tutor-resident the following activities took place as the thesis was developed:
- Communication among the team with information about the completed work.
- Transmission of information related directly with the thesis work (necessities, problems, opinions, etc.).
- Answering of specific questions (doubts, comments, corrections, etc.).
- Seeking of alternative solutions to the problems and identifying the necessities.
- Generation of ideas that contributed to the significant advance of the thesis guiding the pertinent activities.
- Exchange of opinions and their analysis to reach constructive agreement.

The formative strategy is designed to train the faculty and students in research methodology specifically related to Primary Health Care and Family Medicine.
• Acquisition of printed material (didactic material, articles of scientific journals, etc.) that supported the thesis work.
• Revision, correction and expansion of the theses in the presence of advisors and tutors; that is to say, there was formative supervision.

The educational strategies that were used as fundamental qualitative tools in the pattern TI-ATR applied by the advisors were:
• using of all the feasible stocks to advise regarding the research process according to their experience, capacity and competition.
• Showing how one works in a team in an effective way.
• Demonstration of the practical work of consultancy in research.
• Demonstration of collaboration in research to ensure quality, that is to say, tutors and residents work together in active and participative form.
• Statistical simulation of research in real and precise situations.
• Problem based learning.
• Demonstration of the active process of progression from reading to writing in thesis completion.
• Elaboration of conceptual maps for use in the process of investigation.
• Guidance in the construction and use of the bibliographic collection in the research process.
• Coordination of the activities and combined participation with the tutor and resident in the execution of the investigation project.
• Guidance in the consultation of traditional and electronic sources of information.
• Supervision of training with the tutor and the resident with methodological, statistical and ethical rigor.

The overall educational strategy that was used and demonstrated in the tutorship sessions was based on the premise that the tutor should be a facilitator of the learning, acting as organizer, as a guide or moderator, rather than a strict transmitter of knowledge. Thus creating the environment of adapted learning and working to maintain a high level of motivation and simultaneously inculating an attitude sufficiently active to develop his/her thesis work in the resident.

The consultancy had a duration average of 45 to 60 minutes and 20 to 30 consultancies were carried out for residents during the three years of the course.

The qualitative and quantitative information that was generated during the development of this tutorship process in research was registered in an educational file, for advisors, tutors and residents. This mechanism guaranteed a verbal communication and written evidence of the activities carried out by all involved.

OPERATIONAL STRATEGY
To carry out the assistance in academic and clinical activities of training, investigation and evaluation in the environment of the APS and FM, the DFM of the UNAM carried out a project of operative intervention in two units of FM of the ISSSTE which are also academic seats of the Course of Specialization in Family Medicine. The project approved the Systematic Model for the Family Medical Care (MOSAMEF) that included five strategic activities in two scenarios, the units of primary care and the offices of the doctors. The activities of the project in the scenario of primary care unit were distributed in stages which considered a diagnosis, this allowed the evaluation of the physical infrastructure, the human resources and the administrative organization for the benefit of the medical services, the satisfaction of the users of the services and the perception of health professionals of their necessities of technical training, as well as their suggestions to improve the quality of the attention they impart. In the scenario of the clinic, the MOSAMEF has as objectives the identification of the social and demographic characteristic of the users and their families, the epidemic profile and the resources which the doctor counts on for attending to the main problems of health. The diagnostic stage of the MOSAMEF in the scenario of the medical office allowed the development of descriptive studies by the residents of the specialty. These studies were considered as their theses to obtain the diploma of the specialization.

The diagnostic stage facilitated the identification of problems and strategic programs. The second stage of the MOSAMEF pursues the sensitization of health professionals to problems and detection of necessities. To achieve this, academic meetings were carried out, and the results of the diagnostic stage were presented. The health professionals of primary care unit were participants to the search for solutions of detected problems. The joint analysis of the results on the part of the investigators, of the professionals of health and of the authorities of the medical units, propitiated the development of strategic programs that included: the overall improvement in the technical training of the professors of the specialty of

The scientific diffusion strategy is to Present research project results to the professional community to disseminate information to a wider audience to strengthen good clinical practice and encourage the development of other projects.
FM in research projects, the interdisciplinary collaboration of the lenders of services to improve the quality of the services and the development of research projects that contribute to solving the problems of health of the users.

The third stage of the MOSAMEF includes the specific training and the installation of operative strategies, together with an evaluation model based on monitoring and supervision. This stage is at the moment in development, incorporating the formative strategy mentioned in this document.

**SCIENTIFIC DIFFUSION STRATEGY**

Presentations of research project results to the professional community were made to disseminate information to a wider audience, to strengthen good clinical practice and encourage the development of other projects. The diffusion strategy supplements the two previously described strategies. With these ideas, in 1999 academics of the DFM of the UNAM founded the scientific journal "Archivos en Medicina Familiar" considering an editorial directive and a scientific committee. This journal is distributed in four countries of Latin America and is registered in four databases of specialized journals in the continental environment. From 1993, DFM publishes a bulletin with an objective to favour communication among the diverse academic groups of family doctors; this publication has Latin American distribution in 16 countries and is included in LATINDEX.

In 1999, academics of DFM of the UNAM founded the Mexican Academy of Professors of Family Medicine AC (AMPFM) which has the following objectives:

- To favour the incorporation of research in the activities of the professors of family medicine
- To support the development of academic activities that enhance the analysis and modification of the wealth of knowledge that family doctors should possess in agreement with scientific advances, making recommendations to the corresponding organization.
- To support the realization and diffusion of scientific research projects related with Family Medicine
- To foment the academic relationships between the professors and investigators in Family Medicine and other scientific disciplines
- To promote collaboration between the Academy and other similar national and international organizations

AMPFM organizes monthly academic meetings, where topics of academic interest are discussed that reinforce the educational and research activities. The national prize of research in family medicine organized by AMPFM promotes research in this discipline and the annual National Colloquy of Professors and Investigators in FM gathers these academics to analyze topics of FM and the APS. The AMPFM has published the abstracts of its four national and two international colloquies, it has supported the publication and distribution of a book to support the research methodology in Family Medicine and an electronic book about the basic concepts and classifications of families from a medical perspective. In 2001, the president of the AMPFM went to the World Meeting of Family Doctors organized by the World Organization of Doctors of Family (WONCA) in Durban, South Africa and together with members of 11 countries, contributed to the formation of the International Federation of Primary Care Research Networks (IFPCRN) under the Task Force on Research of WONCA.

The DFM of the UNAM participates in the organization of the national and international congresses of family medicine in Mexico, as well as in the colloquies of professors-investigators in this discipline. Between 1995 and 2003 academics at DFM published 82 articles and 10 ‘letters to the editor’ in international journals, eight books and two abstracts of colloquies.

**INSTITUTIONAL INTERACTION**

This strategy is based on the development of projects with other academic institutions and of rendering of medical services. Inside the UNAM, combined projects exist with the department of history and philosophy of medicine, microbiology, public health and with the School of Veterinary medicine. Outside of the UNAM, research studies are developed with the IMSS, ISSSTE and with the Latin American Health and Woman Centre (CELSAM).

**CHALLENGES**

The development of projects that incorporate participation of groups of investigators is the next step, and it has already begun with the creation of the first network of investigators in family medicine by means of the interaction of DFM and AMPMF. It becomes necessary to have highly trained investigators who can direct multi-centre and inter-institutional projects. The benefit of tutorship in research has been shown by means of the pattern TI-
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ATR. Now the implementation of distance-teaching models will be tested for medical investigation.

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