DDM / MEXICO

BASELINE EVALUATION REPORT

September 18, 1995

I. Introduction

This report presents information collected during the first two years of the Data for Decision Making project in Mexico. In this sense is at the same time a reviewed version of the baseline report, as well as an intermediate evaluation of the DDM Project. The data is taken from multiple sources: interviews with the executives of the General Directorate of Epidemiology (DGE) for all the interventions in general; focal group interviews for both the epidemiological surveillance system and the morbidity and mortality bulletin; direct interviews for the epidemiological surveillance system; the morbidity and mortality bulletin; and a management capacities questionnaire applied before the training program in the Campeche and Guanajuato States.

Description of DDM / Mexico

The Ministry of Health of Mexico and the Center for Disease Control (CDC), in Atlanta, Georgia, have had a long and fruitful collaboration experience in the development of applied epidemiology interventions in Mexico. In 1992, a new effort was started to develop the area of health services management as a complement to the implementation of applied epidemiology programs and activities. There was an special interest in improving the managerial capacity to use epidemiological information more effectively, both in programming activities as well as in decision making.

The Ministry of health had expressed, since the beginning of the collaboration with CDC in 1984, a great interest in the development of human resources, in particular in the areas of production and use of epidemiological information. The results of this initial collaboration were evaluated in 1993 by a team from the CDC project in Atlanta, their focus was on the decision making process and the use of information at the state and jurisdictional level. As a result of this evaluation, a new collaborative effort was started; it is safe to say that this was the beginning of the DDM / Mexico project.

Objectives of the DDM/Mexico Project

The data for decision making project aims to increase data-based public Health decision making at National and State levels of the health system.

1) At the national and state levels it seeks:

a) To increase the availability and access to epidemiological surveillance data and other public health information to health executives at the national and state levels. This will be done through the redesign of the national epidemiological surveillance system as well as the reinforcement of the system of dissemination of epidemiological information, including the epidemiology bulletin.

b) To increase the capacity of a basic core of the DGE staff to influence changes in health policy and legislation on smoking cessation, through the adaptation and application to national and state data of the smoking attributable mortality and economic cost (SAMMEC) software.

c) To increase the capacity of a group of DGE executives to provide assistance to state health authorities on the use of information for the formulation of effective health policies, resource allocation, planning, implementation, monitoring and evaluation of public health programs.

d) To test the appropriateness and effectiveness of the Public Health Leadership Institute as a tool to favor the use of data for decision making in top level public health executives. This will be done through the reinforcement of leadership and communication skills.

2) At the jurisdictional level it aims to :

a) Collect, analyze, and use effectively data to set public health program priorities at the local level.

b) Identify public health problems that can be effectively prevented with the resources and technology readily available at the local level in Mexico.

c) Design and implement prevention programs to decrease morbidity and mortality, that could be feasible with the resources available at the local level.

d) Evaluate the effectiveness of the preventive programs designed to decrease morbidity and mortality.

e) Use more effectively data to lobby for public health programs as well as for negotiating additional resources to address locally identified health priorities.

Project Design

The project was designed based on the results of the evaluation carried out by the DDM project in December of 1992. A three year collaboration plan for the DDM / Mexico project was developed in a partnership between the DGE of the Ministry of Health, the DDM project and CDC Atlanta.

The DDM / Mexico project is based on two premises: a) Decisions based on data and solid management principles are better than decisions based on intuitive comparisons; and b) Decision makers that request data consistently, will use with a greater frequency information as the basis for decision making, than the ones that do not request data.

The DDM / Mexico project has been designed to increase the role of data in public health decision making in Mexico. This program includes the following interventions:

1) Development of human resources in both applied epidemiology and management of programs at national state and jurisdictional levels. This includes the development of a curricula developed by graduates from the CDC / Emory Management for International Public Health training-for-trainers course. The courses developed are a two week courses with contents in both management and applied epidemiology.

The management component is based on a total quality management approach and includes topics such as team building, communication skills, conflict resolution, leadership and decision making. The epidemiological component follows a classical epidemiological approach, including methods for organizing data, epidemiological measures, descriptive epidemiology and epidemiological surveillance.

2) Adaptation and application of the SAMMEC software for the estimation of the attributable mortality and costs of smoking in Mexico. A software developed in CDC will be adapted and applied to Mexican national and state data to generate information that can be used in lobbying for new legislation and health policies against tobacco use.

3) Participation in the Public Health Leadership Institute as a model for improving leadership, communications and strategic planning skills in high level public health executives, in order to promote the use of data in the formulation of policies, as well as in decision making.

4) Review and improve the National Epidemiological Surveillance System. This includes the review of the present system, and the integration of other institutions in the health sector to conform and integrated national system. It also includes the modernization of the system through the extensive use of computerized networks.

5) Review and assessment of the Epidemiology Bulletin. It includes the review of the production process, as well as the distribution of the bulletin at the national, state and jurisdictional level. The format and contents of the bulletin were revamped, and the distribution system improved.

This multipurpose intervention program is the subject of the evaluation that is presented next.

II. Objectives of the Evaluation

The purpose of the evaluation of the DDM/Mexico project was to assess the impact of each of the interventions on the decision making process in the ministry of health, under the following premises:

• Provide feedback, along the evaluation process, to the project team so that the final impact of the project could be improved; and

• Document the results and impact of all the intervention components on the decision making process at the national, state and jurisdictional level.

Specific Objectives

a) to demonstrate with data that the DDM approach has positively influenced the use of data in program planning and implementation

b) To identify areas for improvement in the DDM/Mexico project and in the approach for application elsewhere

c) Through combining the results of this evaluation with those done of the Philippines (and Bolivian) project, extrapolate to the use of the DDM approach in other countries

III. Methodology of the evaluation

The evaluation strategy for the DDM/Mexico project is based on the use of sets of indicators to assess the fulfillment of outcome objectives and the general impact of the program on public health management as a consequence of the different interventions to improve the use of data for decision making.

We understand as indicator a clearly defined quantitative measure that can be followed through time, and enable us to document changes and trends to monitor and evaluate outcomes.

Through the monitoring of outcomes and impact for each of the interventions the evaluation team will integrate a comprehensive assessment of the effects of the DDM / Mexico project.

Outcome Indicators

This set of indicators are oriented to the relatively short term effects of the program. There are two different groups of indicators:

- Changes in managerial skills
- Changes in the use of data for decision making

The first group is oriented towards the assessment of the acquired skills in both the DDM training component and the participation in the PHLI program. The second group of indicators pertain to all the interventions and we seek to measure the changes in the use of data for decision making that result from the improvements in data availability from both a better understanding of the usefulness of information (DDM training, PHLI participation), as well as the availability of better data (National Epidemiological Surveillance System, Epidemiology Bulletin, and the application of SAMMEC).

Each one of the interventions will require a special evaluation approach and sources of data. For example, in the DDM training project the focus of the evaluation is both the fulfillment of the learning objectives, and the application of the tools and techniques learned in the course in the direct management activities in their work. On the other hand, the evaluation of the PHLI requires of a qualitative approach.

Indicators of the Interventions Impact.

In this evaluation there is a particular interest in assessing the impact of each intervention on different aspects of the organizational performance in the Ministry of Health. A set of indicators sensible to changes in the organizational design, development and performance will be used, specially on aspects that the use of data for decision making can have an impact (planning, direction, evaluation, action re-design, and policy development).

Feedback to the Project Team

As was reviewed before, one of the purposes of the evaluation was to provide effective feedback to the DDM/Mexico project team. This is an aspect traditionally well developed at the CDC and the evaluation will follow the same approach.

Data Sources

Nine instruments were developed to collect the necessary data for this evaluation. They are listed and discussed briefly in this section, and presented at length in annex 2.

1. Post training skills questionnaire. This will be applied to all the participants in the DDM training courses given in 10 states (including the pilot in the State of Campeche).

2. Outline for the review of course materials. This includes a set of standardized criteria to evaluate the quality of course materials. This will be applied to the materials developed to the DDM training course.

3. Format for TQM project resumes and progress reports. This will be requested from all the 41 TQM projects that were developed during the DDM training courses. The resumes are oriented to show the process through which the problems were selected and the impacts achieved to the time of the evaluation.

4. Outline for the qualitative review of projects. This outline will be used to evaluate qualitatively the development and the products from the 41 TQM projects, based on the project resumes and progress report. This is a proxy measure for the impact of the DDM training course.

5. Outline for interviews with DGE personnel. This is the basis for a set of interviews with the DGE staff participating in the DDM/Mexico Project. It is designed to capture the general perception of the impact of all the interventions of the project.

6. Surveillance follow up questionnaire. This questionnaire will be sent via fax to approximately 100 of the state and jurisdictional level participants in the project, as well as to 50 more executives in states that did not receive the DDM training. This will enable us to compare to a certain extent the effects of surveillance and bulletin changes while holding constant the effect of the DDM training.

7. User survey on back of bulletin (questionnaire). In the January issue of the Epidemiology Bulletin, a survey user questionnaire will be included. This will assess the perceptions of bulletin users of both the content and format of the publication.

8. Diploma participants survey questionnaire. A Fax survey will be sent to the first and second class of the Diploma in epidemiology. This questionnaire will assess the impact of the diploma course on the use of data for decision making.

9. Outline for the interview of state and jurisdictional executives. This will be applied to a convenience sample of four states to explore in depth some of the issues raised by the fax questionnaire (instrument 6).

In the case of the SAMMEC application, the evaluation will be based on the articles and other materials published based on the results of the analysis of national and state data. This information will be completed with information from instruments 5 and 9.

Finally, The data about the effects of the participation in the PHLI will be obtained from the application of a modified version of questionnaire 5 to the General Director of Epidemiology. This information will be completed with interviews to the participants in the diploma course in epidemiology.

III. Problems encountered in the evaluation

There were a number of problems that are important to register for future evaluations of DDM activities in other countries. Most of the problems that are to be discussed here emerge as a consequence of the complexities of evaluating a multipurpose strategy under a limited budget and resources.

There were four major problems encountered in the evaluation process to date: a) A delay in starting the baseline measurement; b) Problems with the application of instruments and data collection; c) Problems associated with changes in the authorities and government officials; and d) Limited budget and resources. All of this problems are related, however, for the sake of simplicity they will be presented independently.

a) Delay in the baseline measurement.

Ideally a systematic baseline measurement should be available before the beginning of the project. In the case of the DDM / Mexico project, this was not possible for multiple reasons and resulted in a change in the whole evaluation process. I will strongly recommend that in future projects the first phase of the

implementation of the project should be the baseline evaluation based on study visit reports, interviews and the use of questionnaires for target groups.

b) Problems with the application of instruments and data collection.

It was not clear who has the responsibility of the application of instruments, the evaluation team, the DGE or someone else. Evidence of this is that the only baseline instrument applied was designed by the evaluation team and applied by the DGE. However, there was resistance from DGE to devoid more resources for the evaluation data collection, besides the efforts they carried out for their own project planning.

My recommendation is to consider an independent budget for the evaluation component, so that data collection could be done without affecting the resources of the host program, and at the same time avoiding the delays that result from depending on the rare and scarce free time from the DGE executives.

c) Problems associated with changes in the authorities and government officials.

This is a major consideration in the evaluation of national programs. There are a number of effects of the changes in authorities in general, but more when there is a change in a presidential administration. There is certain degree of uncertainty between the moment in which elections take place and the time in which authorities are appointed or confirmed. To carry out a project in a time of transition is difficult and even more so to carry out an evaluation.

My recommendation is to consider as a criteria the time for the changes in government administrations so that the projects can have enough time to be implemented and for the evaluation to measure the effects and impact of the project. Under this context, it seem obvious that the application of interventions in the DDM/Mexico project started in later part of 1994, and as will be seen in the body of the report most of them were fully implemented as recently as July 1995. Therefore for some of them we will have to wait a longer time to assess their impact.

d) Limited budget and resources.

According to the evaluation plan sent to CDC in July 15, 1994, the budget for the evaluation included two associate researchers to be paid by the DGE, as well as transportation and perdiem expenses to be paid by the CDC. This was never implemented, in part due to a misunderstanding between the evaluation team and CDC, in part due to the uncertainty of the last year of government in Mexico. The result nonetheless is that there are not enough resources to conduct a full evaluation of the project. This is so, even though that from the fee for the evaluator have been paid the salaries of the research associates.

My recommendation is to plan ahead to have a fit between the outcomes of the evaluation and the resources available. Specially when the evaluation involves traveling to states, and multiple sources of data (qualitative and quantitative questionnaires).

IV. Results

The results are organized in five sections, in each one of them are presented the results of the baseline measurement and the advances in the implementation of the project. The sections presented are: the public health leadership institute and SAMMEC interventions, the morbidity and mortality bulletin intervention, the national epidemiological surveillance system intervention, the DDM training program, and a final section of conclusions and recommendations. Next the results for each of the interventions will be presented.

a) The Public Health Leadership Institute and SAMMEC Interventions.

Baseline Evaluation.

These two interventions share in common an innovative character, there are no antecedents of either an intervention as the Public Health Leadership Institute or an estimation of the costs associated to any disease in the country. For this reason the baseline measurement for these interventions can be reduced to the following points:

- Even though that there has been an important and successful effort to develop the capacity of the states in the area of epidemiology, prior to the DDM/Mexico project there are no accounts of the application of management and epidemiological techniques together.

- Given the fact that both epidemiological and cost data are an essential input for decision making, the lack of coordination between areas in the ministry of health reduced the capacity for effective planning.

- At the present most decisions are taken on the basis of previous experiences, hunches or political pressures, and not based on data.

- The work of the epidemiologist in the public health services has been traditionally reduce to the generation of reports, that most of the time are used just to legitimate previously taken decisions. There is a need for the professionalisation of the discipline.

In brief the baseline situation for these two interventions appears to show a great need for strategies that bring together management and epidemiological data. In particular the estimation of the costs associated to health problems (tobacco addiction), and the use of cost-effectiveness are becoming more and more attractive given the critical economic situation of the country that demand a better management of scarce resources.

Implementation Advances

The adaptation and application of the SAMMEC methodology in Mexico has been completed in the smoking attributable mortality component (SMA). The results of the application of the SAM to Mexican national level data was published in the MMWR. Dr. Pablo Kuri is expecting the visit of an advisor from the CDC / office on Smoking and Health to work on a journal publication of this results.

On the same token the case-control study on the relationship between smoking and lung cancer is under way, to the month of August, 145 cases have been registered, and matched by a set of relevant variables to two controls per each case. Based on this study, the attributable risk of lung cancer due to smoking will be estimated in a Mexican population. This will reinforce the potential effects on the strategy for smoking cessation in Mexico.

The economic component of SAMMEC, has not had the same development. There are major problems with the economic data needed for the estimation of costs. The surveys and the information available is deficient and insufficient. According to the responsible of the SAMMEC application in the DGE, the major limitation is not hiring an economist to support the analysis (there are many institutions in Mexico that had the personnel to carry out the study), but the need for special studies to generate economic data, in particular data on costs.

The activities of diffusion of the SAM results have resulted in four presentations to different target groups: a) National Academy of Medicine; b) Mexican Institute of Social Security; c) Metropolitan Autonomous University; d) National Autonomous University of Mexico.

With regard to the Public Health Leadership Institute (PHLI), the project developed by Dr. Tapia as part of his participation in the PHLI, has been implemented. The Diploma Program in Epidemiology (DPE) accepted the second class of 82 participants in March, 1995. This year the DPE includes students from 20 states, mainly jurisdictional epidemiologists and state level coordinators.

This program has been successful, even though it has had some problems because of the size of the class and the human resources available in the DGE for

individual supervision of homework assignments as well as for group discussions.

According to an interview with Dr. Tapia, the PHLI experience has been instrumental in the development of the priority programs in the General Directorate of Epidemiology.

b) The Morbidity and Mortality Bulletin.

Baseline Evaluation.

It should be explicit that the data for this evaluation is of a qualitative nature therefore no percentages or other parametric measures are presented. The data was collected from two focal groups, one integrated with epidemiologists from the Ministry of Health and one with epidemiologists from the Mexican Institute of Social Security.

The analysis will be presented in five sections: satisfaction with the quantity and quality of the data presented in the bulletin, use of the data presented in the bulletin for epidemiological investigations or analysis of data, distribution of the bulletin, understanding of the purpose and worth of the bulletin, general use of the information presented in the bulletin.

Quantity and quality of the data presented in the bulletin

According to the informants there are three main problems associated with the Morbidity and Mortality Bulletin. First, there is not a clear image of the bulletin. Based on the respondents opinions, the bulletin seems to be basically ignored by its target population, they do not see any difference between the current versions, it is taken as a bureaucratic document not as a tool for decision making.

Secondly, due to the way that the data is collected, its quality is questioned on the grounds of the validity of the information presented in the bulletin. The data that are presented do not coincide with the data available at the state level. This is due to the fact that states only send preliminary data to the center given that it takes up to two weeks for some units to report to the state level.

Thirdly, the information received is considered limited, poor and with delays due to distribution problems. The bulletin presents limited information from the perspective of the states, and its has distribution problems that reduces the utility of its information. The respondents refer that some times takes up to three weeks to receive the bulletin, that it is sent to people that no longer is in charge of the epidemiological offices, and that the states do not receive enough copies, and if they do they are kept in the state offices and are not send to the jurisdictional level.

General use of the information presented in the bulletin

The respondents were not in agreement with respect to the use of the bulletin, while some reported the use of the bulletin by public and private institutions, others reported that nobody used it. However, there seems to be consensus that it is useful for the comparison across states as well as for providing general information. However, the respondents were not satisfied with the validity of the data, the data is aggregated to the state level therefore is of little use for the jurisdictional level, and the criteria used for the selection of information is unknown.

Use of the data presented in the bulletin for epidemiological investigations or analysis of data

This is an area were the bulletin seems to be used consistently. Some respondents referred that it is used for consultation and the writing of reports by state officials. It was also reported that it is bonded and placed in the institution library for consultation by the officials as well as for the general public.

Distribution of the bulletin

This is reported as the most important problem of the bulletin. In fact in all the complaints about the bulletin there is always a distribution component. It was reported that the bulletin arrives late, sometimes three or four bulletins together, which reduces de usefulness and goes against the objective of the bulletin. It was also reported that the directory of the bulletin is not updated, therefore the bulletin is sent to people that is no longer in charge of the office.

It was also referred that the bulletin is received principally at the state level and then redistributed to the jurisdictional level causing delays. A limited number of bulletins are received, and the state epidemiologist have to photocopy the bulletin for distribution in the state causing delays. On the other hand, it was also reported that the bulletins are received in disorder, and that in some cases are accumulated at the state level and are filed or wasted.

Understanding of the purpose and worth of the bulletin

Based on the results of the focal groups it seems that there is not a clear understanding of the purpose and worth of the bulletin.

It is important to keep in mind that the results presented here come from a qualitative study, therefore the generalizability of the findings may be limited. One of my recommendations (if resources are available) is to carry out a user's survey, that will enable us to have a better picture of the situation in the country, in particular it seems that in some cases the bulletin is perceived and used as a tool for decision making and in others is basically ignored. This deserves clarification.

Implementation Advances

A new, revised Bulletin was published and distributed in July 1995. It was changed in both the format and the content, based on the MMWR report. It is planned that in the January of 1996 issue will be included a users satisfaction survey (see annex 2).

c) The National Epidemiological Surveillance System.

Baseline Evaluation.

The data for this component comes from two different sources. A set of 60 interviews in the states of Guanajuato and Campeche, a set of interviews carried out in the Tlalpan jurisdiction of Mexico City, and the results of a National workshop to improve the National Epidemiological Surveillance System (NESS).

The analysis will be presented for the local, jurisdictional and state levels, following the aspects detected in the national workshop as critical for the development of the NESS: use of information for decision making, analysis of data by level, operational aspects of the NESS, quality of the data gathered, diffusion and communication aspects.

<u>Use of information for decision making</u>

There is no relationship between data collection and decision making at local jurisdictional and state levels. In general it can be safe to say that data is used centrally, priorities are defined the same way, and there are few cases were the local and jurisdictional levels can exercise some discretion and use data for decision making.

A related factor is the perception that the technical aspects of the NESS are subdued by political considerations. In that sense it is referred the case of infectious diseases in tourist areas.

<u>Analysis of data by level</u>

At the jurisdictional and local levels there is no capacity to carry out analysis of information and there is a lack of interest in the development of that capacity. There is no interest for the analysis of data at the jurisdictional and operational levels due to different structural problems, among them lack of training, inappropriate profile of public health officials, and the inertia of a bureaucratic system.

Operational aspects of the NESS

This is the area were most of the problems reported are concentrated. There is not a standard format to be used for all the health sector for epidemiological surveillance. On the other hand there are a number of so called parallel formats that are used for decision making at the state level but are not connected to the NESS.

There are multiple problems associated with the constant modification of the formats that should be filled out at the local and jurisdictional level. This is aggravated by the use of parallel formats to solve the lack of coordination between the national objectives of the NESS and the state needs of data. Another related problem is that each institution has its own formats and there is no coincidence in all the data collected which makes comparison cumbersome.

An important aspect to consider is that there is not an appropriate systematization of the manuals to fill the formats used in the NESS, this favors the emergence of errors in all the data management process.

There is an under notification due to the multiple activities that need to be carried out for the human resources available, specially at the local level. This is due to an inadequate human, material and technological structure for the appropriate functioning of the NESS.

There are problems for the continuing training of the personnel in charge of the NESS. The personnel at the local level that are the gatekeepers of the system include a considerable proportion of students of the sixth year of medicine (social service) and physicians hired on a temporary basis, they share in common a limited time in the services (1 year), by the time they are finally trained, they are replaced by new students or other temporary physicians. This reduces the quality of the data collection from its main source.

A related problem is the lack of training of all the health services personnel on public health issues, given that most of the training that they received , with the exception of the social service, is done in hospitals.

Quality of the data gathered

There is no agreement on the type and amount of information that should be available at each level of organization. There are problems in the opportunity of the information, in the emission and sending of the information to higher

levels, as well as in the time that takes for the information to be received at the state, jurisdictional and local levels. The lack of coordination among the institutions in the health sector aggravates the lack of opportunity with which the data is used at local and jurisdictional levels.

Other important aspect is the low quality of the data reported due to the lack of training of the personnel, and the lack of diffusion of the NESS and its objectives among health services providers.

The actual configuration of the NESS, plus the problems in the training and capacity for analysis in the different levels favor the loss of information and makes difficult the definition of outbreaks and emergent situations.

Diffusion and communication aspects

There are problems of communication across the different institutions in the health sector, principally with the private sector that takes care of approximately 40% of the population. This creates delays in the implementation of coordinated actions in the health sector.

Implementation Advances

The following actions were developed after the analysis of the group interviews and focus group workshops developed to assess the epidemiological surveillance system:

1) The surveillance system was revised and in place by March 1995. A coordination agreement was signed in September the 6th, 1995, between the health sector institutions for the integration of the national surveillance system. The agreement was published the same day in the official publication of the federation (Diario Oficial de la Federación). This system speeds up the surveillance system and adds a new dimension for the collaboration among health care institutions, given that it is based on a computerized system connected via modem.

2) A special software for decentralized analysis of epidemiological data (EPIMORBI 2.0) was developed and it was in use by the states in July 1995. This system is being widely spread and is expected to be used as one of the main tools for epidemiological analysis in the Ministry of Health.

d) The DDM Training Program.

Baseline Evaluation.

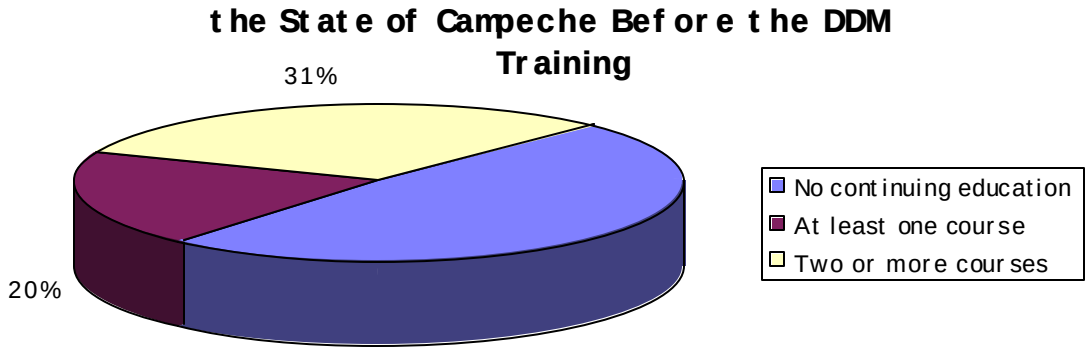
The baseline measurement of the training program is based on the application of questionnaires on the managerial skills of the potential participants in the training courses in the states of Campeche and Guanajuato. This questionnaire explores personal characteristics of the officials (training, work experience), managerial skills (work design, communication, team work, motivation, and information for decision making), and self perception as leader of a group. Next the result s will be presented across those three categories by state.

State of Campeche.

Personal Characteristics.

- Training.

In the state of Campeche, 85.7 % (n=35) of the officials were physicians, but only six of them had specialty training, three in public health and three in clinical specialties. 50% of the respondents graduated in the last 10 years, but all of them had less than 20 years of experience. 48.6% of the officials have no continuing education courses in the last year, 20% at least one course, and the remaining 31.4% two or more courses (Figure 1).

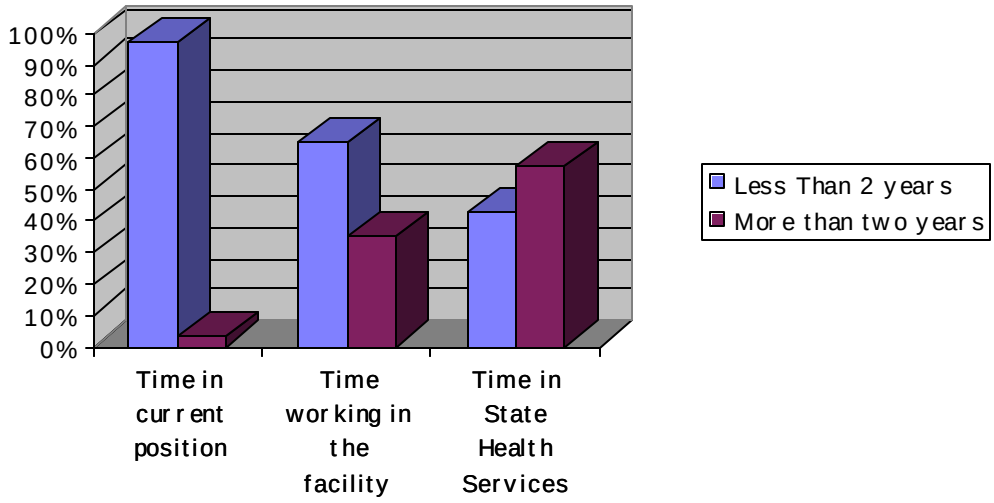


- Work experience.

The range of positions in the respondents is wide, basically all the levels in the state from jurisdictional chiefs up to state assistant director, although 57.1 % of the respondents correspond to jurisdictional personnel.

97.1 % of the officials had less than two years in the current position, but 35.3% have more than two years working in the facility, and 57.1% had more than two years in the state health services. In any case the experience working in the services is low and it seems to suggest that even when the officials have more time in the institution, there is quite a bit of change in the positions held by the officials within the system (Figure 2).

Figure 2. Work Experience of Officials in the State of Campeche

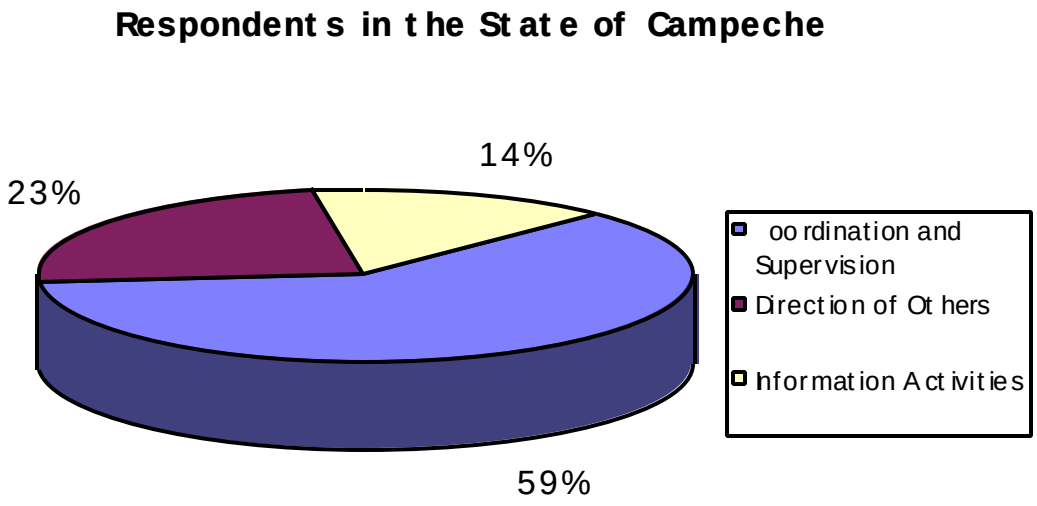


Managerial Skills.

- Work Design.

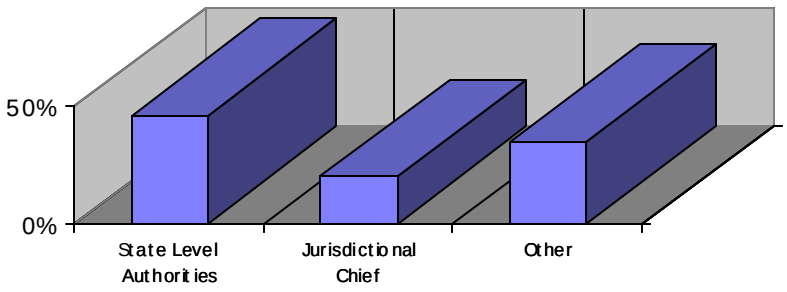
Only 31.4% of the respondents received training for their current job. This indicates that most of them are appointed without an induction to the job.

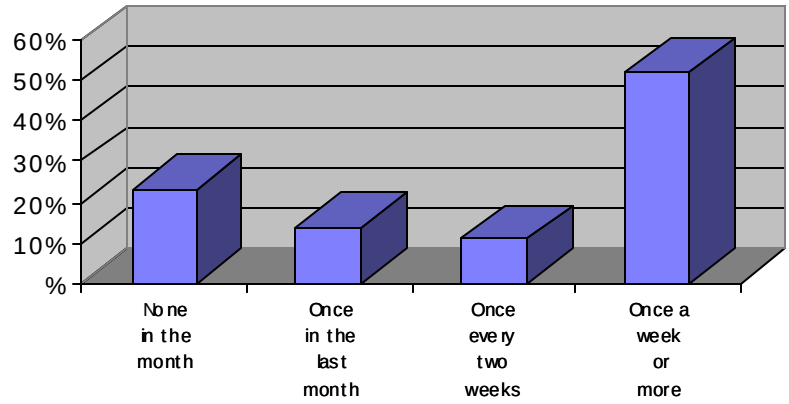
With regard the principal activity carried out by the respondents, 58.6% mentioned activities of coordination and supervision as their main activity; 22.9% mentioned direction of others as the main activity, and only 14.3% mentioned information related activities (Figure 3).



Most of the respondents referred that they received supervision by state level authorities (45.7%), whereas 20% referred being supervised by the jurisdictional chief. 63% of the respondents referred that they received supervision at least every two weeks or more frequently, 14% referred that the frequency of the supervision was at least once per month, and the remaining 23% referred that they did not received any supervision in the last month (Figure 4).

Figure 4. Supervision Authority and Frequency of Supervision





In general the respondents refer to have good relationships with their immediate superior. 68.6 % reported to have a friendly relationship with their boss, and 60% reported that the relationship was participative. In further analysis, it would be interesting to assess why close to 30% of the respondents were not satisfied with the relationships with their immediate superior. At the moment it seems that a more authoritative relationship is associated with dissatisfaction (Table 1).

Table 1. Relationship with Superior Authority

Relationship	Frequency	Percent	Valid Percent	Cum Percent
Friendly	24	68.6	68.6	68.6
Stressful				
No response	11	31.4	31.4	100
Total	35	100.0	100.0	

- Communication

The set of questions designed to assess communication did not provide complete information. In general it seems that most of the respondents prefer to have a more informal way of communication with their superiors. This is expressed in the fact that 51.4% of the respondents preferred verbal communication over written communication (37.1%).

Table 2. Communication with Superior Authority

Relationship	Frequency	Percent	Valid Percent	Cum Percent
Authoritative	3	8.6	8.6	8.6
Participative	21	60.0	60.0	68.6

No response	11	31.4	31.4	100.0
Total	35	100.0	100.0	

- Team work.

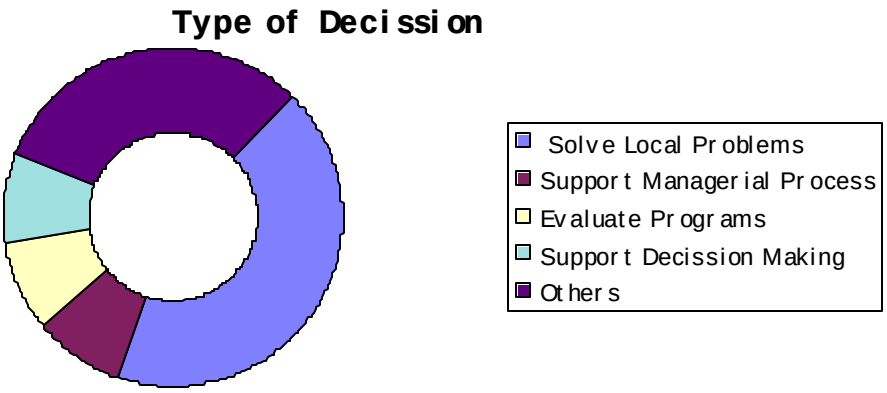
Almost all of the respondents referred that they work in teams (94.2%), and that team work is a key for the achievement of their goals, as well as to facilitate the generation of ideas and the use of worthy experiences

- Motivation.

Only 45.7% of the respondents refer to motivate its subordinates according to performance. However, 77. 1% reported that they make public the achievements of its subordinates as a mean of motivation. Motivation seems to be used consistently in the services, but it is not clear if it is a systematic effort or if it is taken lightly. Further analysis is required.

- Information for decision making.

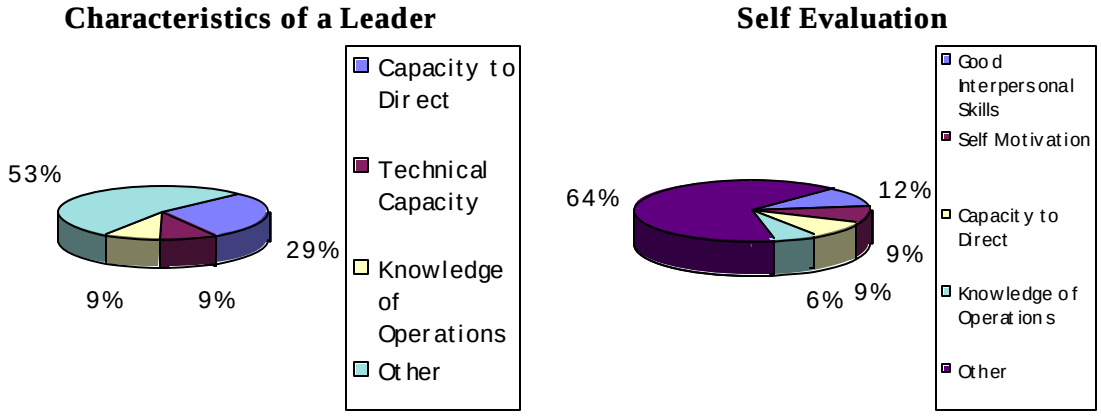
Based in the items in the questionnaire it seems that most of the officials are aware of the importance of the use of information for decision making. They have in general frequent meetings to discuss information about their work; they generate and use statistical reports for their work; the data tends to be concentrated at the jurisdictional and state level, although 20% of the reports are sent directly to the central level; and they refer to use data for decision making in relationship to decisions such as: to design alternatives to solve local problems (42.9 %) to support the managerial process (8.6%), to evaluate programs (8.6%), to support decision making (8.6%) (Figure 5).



- Perception as a group leader.

There were two exploratory questions with regard leadership. In general terms it seems that they identify a leader on the basis of the capacity to direct people (28.6%), technical capacity (8.6%) and knowledge about the institutional operations (8.6). On the other hand they identified the following four aspects as their strengths in terms of leadership: accessibility and good interpersonal skills (11.4%), self motivation (8.6%), the capacity to direct people (8.6%), and knowledge about the institutional operations (5.7%) (Figure 6).

Figure 6. Identification of the Characteristics of a Leader, and Self Evaluation of Leadership Skills



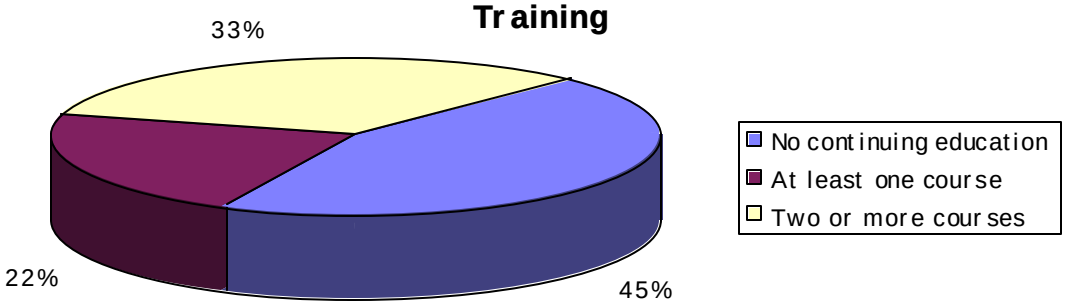
State of Guanajuato

Personal Characteristics.

- Training.

In the state of Guanajuato, 91.1 % (n=45) of the officials were physicians, but only four of them had specialty training, two in public health and two in clinical specialties. 44.4% of the respondents graduated in the last 10 years, but only 8.9% of them had more than 20 years of experience. 44.4% of the officials have no continuing education courses in the last year, 22.2% at least one course , and the remaining 33.4% two or more courses (Figure 7).

Figure 7. Continuing Education of Officials in the State of Guanajuato Before the DDM Training

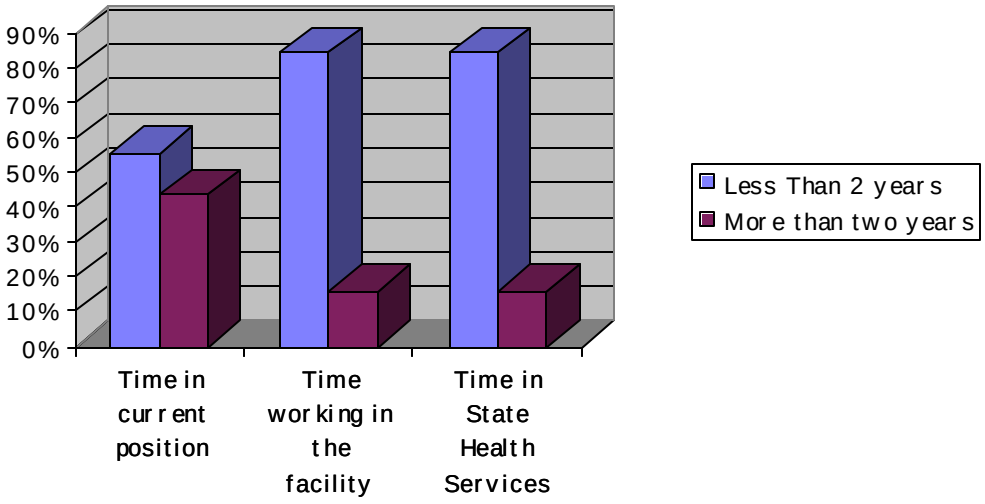


- Work experience.

The range of positions in the respondents is wide, basically all the levels in the state from jurisdictional chiefs up to state director, but 64.4 % of the respondents correspond to jurisdictional personnel.

55.6% of the officials had less than two years in the current position, but 84.4% have more than two years working in the facility, and the same percentage had more than two years in the state health services. The experience working in the services is relatively high and it suggest that there is job security within the institution and facilities, but some turnover within positions (Figure 8).

Figure 8. Work Experience of Officials in the State of Guanajuato



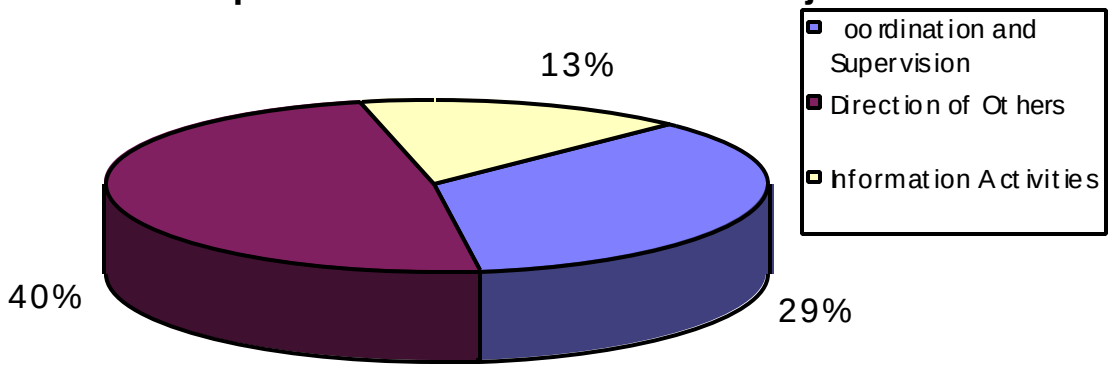
Managerial Skills.

- Work Design.

Only 48.9% of the respondents received training for their current job. This indicates that almost half of them are appointed with an induction to the job.

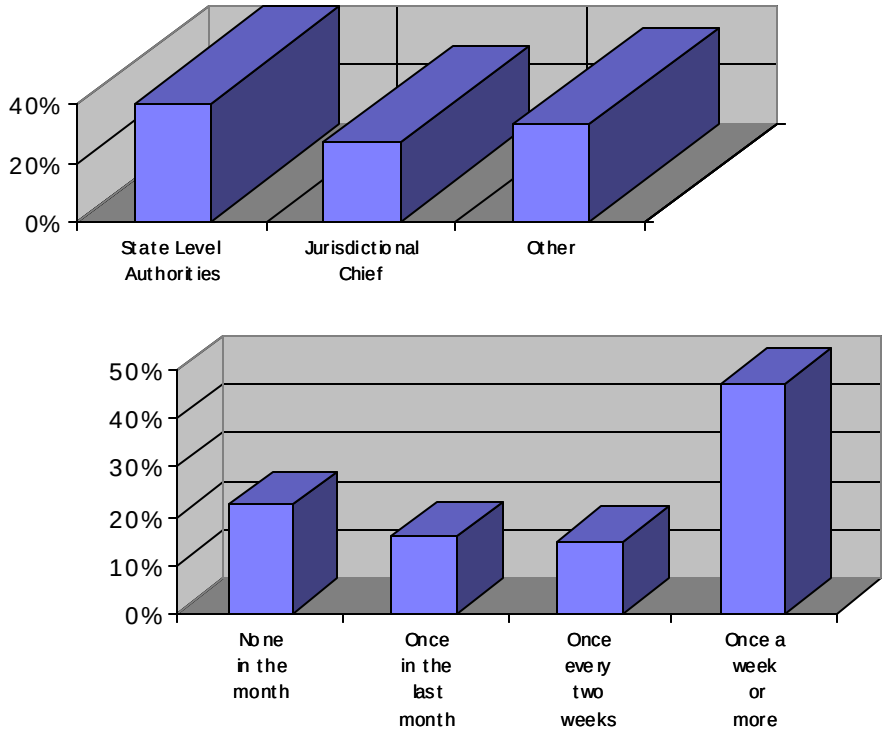
With regard the principal activity carried out by the respondents, 40 % mentioned activities of direction as their main activity, 28.9% mentioned coordination and supervision as the main activity, and only 13.3% mentioned information related activities (Figure 9).

Respondents in the State of Guanajuato



Most of the respondents referred that they received supervision by state level authorities (40%), whereas 26.7% referred being supervised by the jurisdictional chief. 80% referred that the frequency of the supervision was at least once per month, but the remaining 20% referred that they did not received any supervision in the last month (Figure 10).

Figure 10. Supervision Authority and Frequency of Supervision



In general the respondents refer to have excellent relationships with their immediate superior. 91.1 % reported to have a friendly relationship with their boss, and 84.4% reported that the relationship was participative.

Table 3. Relationship with Superior Authority

Relationship	Value	Frequency	Percent	Valid Percent	Cum Percent
Friendly		41	91.1	91.1	91.1
Stressful		3	6.6	6.6	97.7
No response		1	2.3	2.3	100.0
	Total	45	100.0	100.0	

- Communication

The set of questions designed to assess communication did not provide complete information. In general it seems that most of the respondents prefer to have a more informal way of communication with their superiors. This is expressed in the fact that 57.8% of the respondents preferred verbal communication over written communication (28.9%).

Table 4. Communication with Superior Authority

Relationship	Value	Frequency	Percent	Valid Percent	Cum Percent
Authoritative		8	17.8	17.8	17.8
Participative		37	82.2	82.2	100.0
No response		0			
	Total	45	100.0	100.0	

- Team work.

Almost all of the respondents referred that they work in teams (97.8%), and that team work is a key for the achievement of their goals, as well as to facilitate the generation of ideas and the use of worthy experiences.

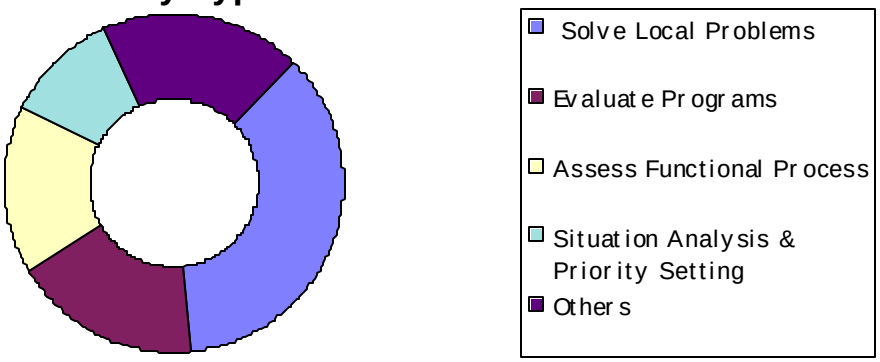
- Motivation.

Only 44.4% of the respondents refer to motivate its subordinates according to performance. However, 73.3 % reported that they make public the achievements of its subordinates as a mean of motivation. Motivation seems to be used consistently in the services, but it is not clear if it is a systematic effort or if it is taken lightly. Further analysis is required.

- Information for decision making.

Based in the items in the questionnaire it seems that most of the officials are aware of the importance of the use of information for decision making. They have in general frequent meetings to discuss information about their work; they generate and use statistical reports for their work; the data tends to be concentrated at the jurisdictional (24.4) and state level (28.9), only 8.9% of the reports are sent directly to the central level; and they refer to use data for decision making in relationship to decisions such as: to design alternatives to solve local problems (35.6%), to evaluate programs (17.8%), to assess the functional process in the organization (15.6%), to develop situation analysis and define priorities (11.1%) (Figure 11).

Figure 11. Use of Data for Decission Making by Type of Decission

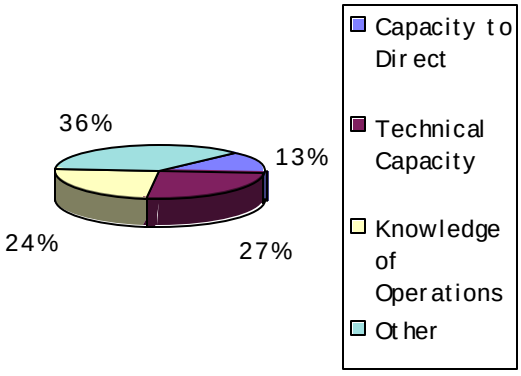


- Perception as a group leader.

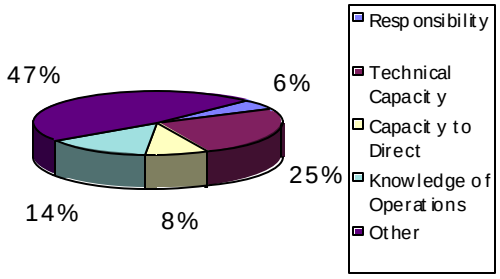
There were two exploratory questions with regard leadership. In general terms it seems that they identify a leader on the basis of technical capacity (26.7%), knowledge about institutional operations (24.4) and the capacity to direct people (13.3%). On the other hand they identified the following four aspects as their strengths in terms of leadership: technical capacity (26.7%), knowledge about institutional operations (15.6%) and the capacity to direct people (8.9%) and responsibility (6.7%) (Figure 12).

Figure 12. Identification of the Characteristics of a Leader, and Self Evaluation of Leadership Skills

Characteristics of a Leader



Self Evaluation



Comparison between the states of Campeche and Guanajuato.

1. These two states are clearly different in the managerial capacity and the development of its personnel. The state of Guanajuato is consistently higher in two categories of data explored, the work experience and the managerial skills. This is very useful in terms of the evaluation of the DDM interventions given

that this will enable to assess the impact in different conditions of managerial capacity.

2. On the other hand, these two states are similar in terms of the training of its personnel. This is very important given that only 8.8% of the officials in Guanajuato and 17.1 % of the officials in Campeche had any training in public health. For this reason alone the training intervention in the DDM / Mexico project is more than relevant.

Implementation Advances

In the later part of 1994 it was decided to establish an strategy to train personnel in 9 states of the country following the DDM course developed in the DGE. This was done at great speed, and some aspects have to be oversighted. Among those aspects were three that are of importance for the evaluation: 1) In this states was not applied the baseline questionnaire of managerial skills and attitudes; 2) There were no pre-test evaluations on the knowledge of the contents of the course; 3) There were no post-tests evaluations after the course.

Although the training fulfilled all its goals, training more than 250 jurisdictional and state officials, and developing 41 TQM projects, it is not going to be possible to evaluate the changes attributed to the knowledge and techniques received in the course as it was stated in the original evaluation plan.

However, there is evidence of the effects on the courses based on the implementation of the TQM projects. For example, a project of Scorpion bites was developed in jurisdiction Izucar de Matamoros, State of Puebla following the TQM approach. An evaluation visit to review the progress of DDM / Mexico was done by Dr. Michael Malison in June 1995, in the trip report he describes the results seen in the Izucar de Matamoros jurisdiction in the Puebla State. In general he reports a positive impact both of the epidemiological and the management components of the DDM course. However, it is clear that there was a need for follow up that was not fulfilled by the DGE for the reasons outlined in section III, on the problems encountered for the evaluation (problem c).

The final evaluation of this component will be based on interviews with a sample of the jurisdictional and state officials that took the course, as well as on the reports of the 41 TQM projects (see annex 2).

VI. Discussion

There are different aspects that deserve discussion on the baseline and the progress evaluation. First of all, there were difficulties in the evaluation process derived from the coordination between the evaluation team, the CDC and the DGE. Most of the problems were related to two factors:

1) There was a delay in the development of the evaluation plan, and its acceptance by CDC and DGE, that caused that the interventions started before it was possible to carry out a baseline measurement for most of them. However, thanks to the good planning strategy followed by the DGE there were two workshops that provided valuable information for the bulletin and the surveillance system that enable us to have at least a qualitative baseline.

2) There were a number of problems associated with the uncertainty in the last year of the past government administration that caused once again a rupture in the communication and affected the evaluation activities, as well as delayed the application in most of the interventions, and accelerated the DDM training intervention.

A second aspect of relevance was that even though the existence of all these problems, the interventions were successfully implemented. Once the uncertainty of the change in administration was solved, the interventions were accelerated and by July of 1995 all of them were at full speed. Based on this it can expected that by early 1996, it could be possible to evaluate their early effects.

In third place, although it was not planned in this way, the evaluation process has enable us to assess a number of factors that are of high importance for the successful implementation of national strategies like the DDM / Mexico project. First of all, the way in which the evaluation component was organized taught us the need for a more independent evaluation strategy. Secondly, It was also clear that it should be considered the life cycle of the project, in other words, it is necessary to plan carefully the beginning and the termination of the project so that external factors cannot affect the appropriate implementation of its interventions, as well as the process of evaluation.

Finally, although it is to early to evaluate impacts, there is clear evidence that the different interventions have been successfully implemented in most of its components. At was shown in the previous section, all of them are already in place, and for some of them, like the DDM training component and the surveillance system there is evidence of the future impact.

Based on this brief discussion, in the next section are presented a set of recommendations.

VII. Conclusions and Recommendations.

On the interventions

1. Development of human resources in both applied epidemiology and management of programs at national state and jurisdictional levels.

This intervention was carried out at the end of 1994. There was no follow up of the activities of the 41 TQM teams. It seems to me that a follow up and reinforcement of the original training activities could be important. There is still a high turnover on the states, specially after changes in state governments, for this reason I suggest that the DGE might consider to develop a strategy to have more continuity on the states.

Another aspect to consider is that under the decentralization process in the Ministry of Health, more and more functions will be given to the states, this situation alone will create more demand for training in for the DGE.

Finally, it should be reviewed the DDM training strategy under the modernization of the Ministry of Health, new structures have been created and their functions are in the process to be defined. This might be a good opportunity to strengthen the DDM approach.

2. Adaptation and application of the SAMMEC software for the estimation of the attributable mortality and costs of smoking in Mexico.

In this intervention the SAM component was basically completed. However, there is still a delay in the application of the economic component. As was the case with the training, new information is in the process of being generated as part of the work of the new areas in the Ministry of Health, it would be probable that if the need of economic data is specified the information systems in the Ministry might be adjusted to collect the necessary information.

Once again, there is a window of opportunity to expand the DDM approach to other sectors of the Ministry of Health.

3. Participation in the Public Health Leadership Institute as a model for improving leadership, communications and strategic planning skills in high level public health executives.

This intervention resulted in the Diploma in Epidemiology, which in this year started the second class. It would be useful once again to consider the possibility that under the new organization of the Ministry of Health the PHLI approach can be used in a modified way, may be related to the National Council of Health, that join together all the state health services directors. This is a

natural place in the organization to apply some of the experiences obtained in the PHLI.
4. Review and improve the National Epidemiological Surveillance System.

This intervention was completed in July 1995. It is under way and there is some evidence that the states are using the system with more frequency. In particular the computerization of the process has been highly useful, not only the epidemiological uses that was designed for, but to increase the communication between DGE personnel and the States personnel.

5. Review and assessment of the Epidemiology Bulletin.

The first number of the new bulletin, following the MMWR format was distributed in July 1995. It is too early to assess the effects of the changes of the bulletin on decision makers, however, most of the problems detected in the baseline measurement were address and an appropriate response was given to each of them.

On the Final Evaluation

1. The process of the evaluation.

First of all, I will recommend that in future projects the baseline evaluation should be carried out as part of the negotiations for the beginning of the project. Once a project is agreed upon the dynamic and inertia of the interventions take over and the baseline measurement starts to compete with the activities and time of the resources needed to carry out the interventions. This makes extremely difficult to offer a real baseline measurement.

Secondly, I suggest to consider carefully the time for the changes in government administrations so that the projects can have enough time to be implemented, and for the evaluation to measure the effects and impact of the project. Projects tend to become institutionalized if they have enough time to develop (like when a new administration starts), if the process starts to late, there is uncertainty about continuity, and that affects directly the project and the timing and the evaluation process.

2. The participation of the DGE in the evaluation

After the experience with this project, I would recommend to consider an independent budget for the evaluation component, so that data collection could be done without affecting the resources of the host program, and at the same time avoiding the delays that result from depending on the rare and scarce free time from the organization executives.

An independent team with resources to move and collect information will guarantee timely delivery of the reports and other deliverables of the evaluation.

3. The evaluation budget

This was a complex project with a multipurpose intervention design. My recommendation is to plan ahead to have a fit between the outcomes expected from the evaluation and the resources available. Specially when the evaluation involves traveling to states, and multiple sources of data (qualitative and quantitative questionnaires).

ANNEXES

1) Logframe

2) Copies of Instruments

3) Copy of Diploma Plan

4) Summary of Policies, Laws, about smoking cessation

5) Diskettes with copy of report, raw data, graphs and tables