

*Full Length Research Paper*

# **Saving and improving lives through education and research: The case of the National Institute of Public Health in México along 90 years of history**

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## **Abstract**

**This article covers ninety years of history of the Mexican National Institute of Public Health that begins as School of Sanitation, founded on March 23<sup>rd</sup>, 1922. It summarizes the curricula since the 20's when the "short courses" were taught, until the creation of specialties, master's and doctoral programs which today are based on teaching by competences. The role of students and professors who we call "health professionals" stands out and we find them in the space which has belonged to them for ages: the community, the classrooms and the laboratories, from where they have worked for social equity and public policy to improve the health of the Mexicans over the years.**

**Keywords:** Sanitation, education, public health school, Mexico, courses.

## **INTRODUCTION**

Mexico's hygienic and epidemiological conditions had a strong setback due to the 1910 uprising and its consequences, which were reflected in the worsening of diseases that affected the population, as well as the urban and rural environments. As if this weren't enough, in 1915 there was a food shortage known as "the year of hunger". This altered even more the already vulnerable daily lives of Mexicans. Perhaps the most alarming epidemic caused by food and water shortages was the typhus, which between 1915 and mid 1916 hit Mexico City and exposed the unhealthy living conditions of most of its inhabitants.

After the revolution, the period known as "national reconstruction" began and brought about the creation of new institutions as the Departamento de Salubridad Pública, headed by José María Rodríguez in 1917. In the early 20's, the Department went through an internal organization and the Section for Hygiene Education and Propaganda was created, as well as the School of Sanitation. These were considered necessary for two

reasons: providing the population with hygienic education and training health professionals to do the fieldwork.

The creation of the School was a response to several fundamental moments but here we just announced the ravages of the 1910 revolution and the influence of the U.S. physicians Abraham Flexner and William Welch, each of whom proposed to create schools of public health that were independent from the medical schools (Fee, 1987). On March 23<sup>rd</sup>, 1922, the Mexican School of Sanitation was inaugurated and with its opening began a gradual process for training students who did fieldwork, practiced preventive medicine and became public health professionals. "To endeavor to conserve health" was a social and human activity that should have a definite place and the School, as a place to train professionals, took on that responsibility. Alfonso Pruneda's opening speech established that "humanism" should be the working flag for professors, students and graduates.

## **The School of Sanitation and the first "short courses"**

The first "short course" we know about was offered at the

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newly named Institute of Hygiene at the beginning of 1922, and lasted six months. At the beginning of Alvaro Obregon's presidency (1920-1924), the *porfirian* (from the Porfirio Diaz period) National Bacteriological Institute (1905) became the Institute of Hygiene (Carrillo, 2010; 262). This was taught by the physician Tomas G. Perrin. It was a practical short course in bacteriology for young women, promoted by the DSP. Its main objective was to prepare a group of women who could deal with the epidemiological and public health problems that were inherited from the revolution. As Pruneda said, this course was given so that the fourteen women who attended could later be incorporated as assistants for the sanitation delegations.

At the same time this short course was ending, Pruneda announced in his speech at the School's inauguration, that it would also offer diplomas for Sanitation Officers and for Higher Studies in Hygiene and Public Health, as a maximum academic degree. For instance, the first summons for students was only directed to certified physicians and surgeons who were interested in doing a specialization in these courses. This measure led to a scarce demand for admission into the School because those who were finishing their medical career were not always interested in specializing in public health. Three years later, Salvador Bermúdez, the School's director, and Bernardo Gastelum, head of the DSP, reported that the School would accept the Department administrative personnel in the classrooms. To differentiate them from the certified doctors, they were referred to as "employees-students" (BDSP, 1925). This offer led to the admittance of men and women who were trained as nurses, sanitation agents and laboratory assistants, among other titles. With their incorporation, enrollment increased, since 384 students were admitted and in order to support their work schedules, classes were mostly at night or on Saturdays (BDSP, 1925).

To guarantee the quality of the courses, professors were trained and specialized in their areas for which since the beginning, the School supported Mexican doctors to specialize in public health schools in the U.S. The first ten physicians who received scholarships were headed by Miguel Bustamante and were incorporated at Johns Hopkins Public Health School. The commitment they took on when finishing their stay was to come back and contribute to the professional development of new generations of Mexican sanitation experts by offering new and innovative courses. One of these was devoted to training Sanitation Agents, for which the above-mentioned Pruneda, proposed a mandatory reading of *The Health Officer* written by U.S. sanitation experts. Written by Frank Overton and Willard J. Denno, sanitation experts from New York, the central theme was to provide labor and humanistic guidance to sanitation specialists, nurses, teachers and the general public. It has 44 chapters that emphasize the importance of the sanitation expert's work and the acquired by them in what

was strictly related to the population's health through the prevention of diseases and the promotion of hygiene (Overton-Deno, 1920). This showed that the U.S. sanitation model was an important reference for those who were trained in the School of Sanitation. However, we should not lose sight of the fact that Mexican sanitation specialists had to adapt to the national context because when they finished their courses they were incorporated into the different areas created at the DSP. To practice, they had to have a personal ID credential issued by the Department, that endorsed their position and the service to which they were assigned Figure 1.

In 1927, the School received the visit of professor Peter Mühlens from the Institute of Tropical Diseases of Hamburg, Germany and John A. Ferrell, Director of the *International Health Board* of the Rockefeller Foundation, with headquarters in New York City. Professor Mühlens taught a "fast course" in Hematology and Parasitology, which was attended by 25 physicians, including the director and the secretary of the School and the Mexican entomologist Carlos Hoffmann. They all said it had been an "extremely interesting" course (AHSS, 1927, box 1, doc 12). This interest in the study of tropical diseases preceded the creation of the Institute of Sanitation and Tropical Diseases (ISET, in Spanish), which opened years later.

### **The Volunteer Visiting Nurses and Hygiene Education**

Another important course in the 20's was designed to train the Volunteer Visiting Nurses. The initiative to offer this course was the result of a study directed by the DSP that confirmed the high levels of infant mortality around the country caused by, according to the authorities, bad eating habits and the lack of hygiene of mothers, due to ignorance. On March 18<sup>th</sup>, 1927, this group of nurses was created, which joined DSP delegations and clinics, and the requirement was for them to attend the hygiene courses and conferences organized by the Department and held at the School of Sanitation. Their task was to get the mothers to follow the doctors' instructions, to guarantee a good physical and mental development of their children, from the time of birth until they were two years old. These courses included subjects such as general hygiene, sanitary legislation, sanitary engineering, epidemiology and bacteriology. Other more specific subjects were notions of body hygiene where the "advantages and inconveniences of sports" were studied, causes of alcoholism and the "special dangers of *pulque* (fermented cactus drink), due to its microbial impurity". To carry out practices in the community, they studied, for example: characteristics of houses and means of ventilation and analyzed the importance of sunlight and its opposite, darkness, as favoring filth (Agostoni, 2007; Alemán and Salcedo and Ortega, 2010).



**Figure 1.** Credential of a sanitation agent graduated at the School of Sanitation. 1924. Ministry of Health Historical Archive, Mexico.

Hygiene Education was another subject taught at the school. Its main objective was “to teach basic principles of methodology and psychology education used in public education in medicine and general hygiene, preventive medicine and sanitation” (Anuario Escuela Salubridad e Higiene, 1945; 30). There, discussions were held as to which were the most effective methods to educate groups and individuals, taking into account the cooperation of school authorities and the type of materials used to design an adequate publicity. For over ten years, Manuel González Rivera taught it and compiled and wrote, among others, the text books *Doña Eugenesia y otros personajes* and *Educación Higiénica*. This book is a compilation of stories, texts for radio spots, flyers and slides for the movie screen, created for doctors and nurses who worked directly with farmers (González Rivera, 1943). On the other hand, *Educación Higiénica* was published twice and, according to its author, the second edition was by request to professors and students of the School of Sanitation, who demanded a textbook (González Rivera, 1952; 2a ed). The dissemination of this subject was part of an initial strategy of the post-revolutionary sanitary authorities who stated that through hygiene education, there would be a broader coverage of information for the population and hence a greater possibility of sanitary control nationwide. The physicians and sanitation experts of the times believed that educating the population on hygiene and prevention of diseases would facilitate the work of sanitation brigades, complementing their work in the communities. As we see in the following photograph, (Figure 2), the graphic advertisements in newspapers, flyers, pamphlets, posters and movies were the main work materials (Gudiño, 2009; 2009 a; 2010; 2012).

### Training linked to community: Social medicine and “Training Stations”

Starting in 1930, the subjects taught at the School had an orientation towards greater social commitment. Since this decade led to the implementation of the concept of “social medicine” in the health field in Mexico; this was seen as a national need in matters of sanitation. To practice it, it was necessary to sensitize doctors and public health specialists that worked in rural and urban communities of the country, to precisely understand the social and cultural context of the people. One way of doing it and raising the consciousness of sanitation specialists in training, was to promote better planning and field practices outside of the School. In striving towards this goal, the role of “Training Stations” promoted by the Rockefeller Foundation, was important. These stations were established in Mexico City, Cuernavaca (Morelos), Boca del Río (Veracruz), Monterrey and other states. The first one was opened in November, 1932 in Cuernavaca, but soon, in order to be more available to students, it moved to Xochimilco. The courses and practices that took place there were about eight weeks long and went deeply into themes of sanitation and preventive medicine. The Stations remained in operation throughout the following decades.

In the early 40's, and following the principles of social medicine, a position was sought for the School of Sanitation and Hygiene as a pillar of the National Hygiene Program. It is important to state that throughout its ninety years of history, the School of Public Health of Mexico was known as the School of Sanitation (*Escuela de Salubridad*) 1922-1939 and the School of Sanitation and Hygiene (*Escuela de Salubridad e Higiene*) (1939-1960).



**Figure 2.** Materials to promote Hygiene Education among Mexicans, ca. 1950. Dirección General de Promoción de la Salud Archive.

In January, 1944, Ángel de la Garza Brito, the school's principal, stated that this was fundamental in order to counteract the enormous difficulties encountered during the execution of the sanitation programs in the different communities throughout the country. To achieve this, the School's functions were to instruct the technical and sub-technical personnel who were providing their services at the DSP and its branches, to train doctors, nurses and other professionals who wished to join the public health services and acquire knowledge on preventive medicine and hygiene (De la Garza, 1944). Then, courses for sanitary doctors, nurses, engineers and sanitary officers were strengthened, offering subjects such as mental hygiene, sanitary administration, epidemiology, environmental sanitation and biostatistics, among others. With this need, and within the framework of social medicine, the course for Sanitary Agents was consolidated in the training of sanitation specialists (De la Garza, 1945). Some of these incorporated subjects had never been taught before, which shows the influence of "social medicine" on the School's academic planning.

### **Incorporating Social Work and Mental Health into the Training of Sanitation Specialists**

Due to its link to social medicine, another important course during the 1940's was that of Social Work. Based on another American book entitled *Social Work as a Profession*, which started circulating in Mexico at the beginning of 1940, this discipline was defined as a task to help people – individually and in groups – adapting to their surroundings, mainly in the economic and environmental aspects. A main task of the future social workers was to promote positive changes for a person and for his/her immediate surroundings. During the previous decades, the work of the visiting nurses was strongly connected to social work because it not only led them to carry out "prevention work, but also to help these people with their needs; for example, help them get

healthcare for mothers, newborns, preschoolers or sick people at home." However, social work as a discipline started defining its scope to differentiate it from the work of nurses and it was set forth as follows: "The sanitary visitor tries to prevent disease or its propagation; the social assistant must prevent disruption at home. Sometimes the first one has to jump into the thick of things and carry out both functions; the second one cannot do that" (Boletín OPS, 1941).

In order to promote individual and collective interaction among people, we must add Mental Hygiene because, just as in the case of social medicine, it was a movement that transformed the psychiatric scene in Mexico during the 1930's and 1940's. This movement promoted a change in the social role of the psychiatrist, since interest was no longer concentrated on providing care for mental patients, but broadened the scope of action to the analysis of social factors that could deteriorate the mental health of Mexicans. This knowledge was transferred to institutions with a preventive character, such as the Behavior Clinics, the Young Offender's Court or Juvenile Court, the Centers for Mental Hygiene, that were annexed to educational centers and to the Hospital for Drug Addicts. In the School of Sanitation, Mental Hygiene was an obligatory course since 1945 and its objective was "to show the fundamental principles on which the prevention of mental disorders is based, as well as the methods to examine and develop psycho-social case histories." This course was taught during five years by the well-known psychiatrist Raúl González Enríquez.

### **Training Sanitary Inspectors**

The subjects taught in the course for sanitary inspectors were related to sanitary management, notions of bacteriology, elements of preventive medicine and hygiene and notions of social work techniques with an

emphasis on public relations. On this last one, the following was stated: "Students are also taught about methods and ways to establish relations with the public and avoid, while performing their functions as sanitary officers, all reasons for friction, trying to keep in mind that the activities they carry out are not as policemen but as educators" (De la Garza, 1945). Linked to the work of social workers and sanitary inspectors, was that of those who graduated from the course on Environmental Sanitation, which in 1945 was called *Notions of Environmental Sanitation and Sanitary Inspections*. Years later, in 1958, the post of Sanitation Technician was established and in the 1960's it was taught by Engineer Luis Rivera, who promoted the training of technicians who would participate in the country's sanitation works. Since then, a major concern of Professor Rivera has been the precarious living conditions in rural communities and the great effort that is required to work for them. That is why he has been a tireless promoter of community practice. In recent interviews, he still states that, "we have to look at the countryside and never forget it" (Rivera, 2011).

### **The School of Sanitation opens its doors to foreign students**

Another important event in the 40's was the School's expansion abroad. With the argument that it needed to train doctors and sanitary nurses with an international vision, and specially looking towards the Latin American countries, the School got support from the U.S. to receive foreign students in its classrooms. On December 10<sup>th</sup>, 1943, the project was presented with the name: *HE-1 Expansion of the Services of the School of Sanitation of Mexico*, whose objective was to receive Latin American physicians. The courses offered were validated by the Hygiene Society of the League of Nations, by the American Public Health Association and by the Pan American Sanitary Union. The project was signed by Harold Himann, Director of Inter-American Cooperation and Manuel Martínez Báez, Subsecretary of Sanitation and Assistance. Both of them argued that the Mexican School was ideal to receive foreign students because, according to them, the "similarities" between the Mexican lifestyle, and that of the Central American students and those living in "countries in the northern region of South America" were manifested in the type of climate, geography and economy. But, without doubt, there was a cause with a greater political implication: in the midst of the Second World War, the U.S. was going through a complicated economic and political situation which didn't allow it to be the host of public health students. They also argued that the Mexican School had all the human and material elements necessary to be the headquarters for

the foreign students (AHSS, 1943).

### ***Integrating teaching and research. A social commitment***

Going from the social aspects to the scientific study of sanitary problems, Miguel Bustamante promoted scientific research at the School of Sanitation. His main argument was that medicine had the scientific resources to promote prevention of some diseases through methodical studies to find their causes and prevent their propagation (Bustamante, 1944). This initiative explains why in 1939 the first laboratories equipped and assigned to scientific research were installed at the School, in its headquarters at the Institute of Sanitation and Tropical Diseases (ISET). Descriptions of this period confirm that there were four demonstration laboratories, to study the problems directly affecting sanitation in the tropical areas of the country, where there were numerous urgent problems to be solved. As a consequence, in the Institute's laboratories, Luis Mazotti studied the origin of the Chagas disease and other colleagues studied trichinosis and pork consumption, malaria transmitting insects and mites. In the pharmacology laboratory some vitamins and plants in the Mexican diet were studied and in the chemistry laboratory, studies were started on the nutritional value of different food substances. In the bacteriology lab, the influenza virus was studied, as well as exanthematic typhus, among other diseases.

Early in 1952, the School and ISET merged under the argument that it was necessary the integration of a work program with teaching and research activities, making the Institute's researchers to participate in the teaching activities and promoting, among the School's professors, an interest in the scientific investigations that were needed for their teaching activities. What was maintained was the social focus of the School; that is, sanitary practice and assistance ruled the student's activities and kept the commitment to the people. Subjects such as social security and social anthropology where incorporated and taught by Gonzalo Aguirre Beltrán as associate professor. To reinforce this commitment, Daniel Martínez García, who was the director from 1959 to 1960, said the following: "The public health teacher must have a mature personality, love humility, have mental horizons that go from the infinitely small, the concrete, to the precise and abstract. He must be, to put it in a few words, a doctor of the people". (Martínez, 1960; 2002). This awoke an interest for promoting, among students, a fair assessment of the biological and social sciences in the public health field. At the beginning of the 60's, this important figure promoted the change of the School's name from School of Sanitation to Mexican School of Public Health, and "short courses" were substituted by courses and master's programs.

## **Towards a structural change**

Between 1970 and 1986, the Mexican School of Public Health was directed by Luis Peregrina Pellón (1970-1982) and José Rodríguez (1982-1986). The first one distinguished himself by maintaining a line of teaching and research that had been defined since 1959 and which confirmed that the purpose of a public health school was to contribute to the improvement of health, training the health team members in the different disciplines of this activity. In response, one of the most important subjects was included in the school curriculum at that time: social sciences as a tacit recognition that public health must use adequate resources to satisfy the health needs of the population generated within a defined social and economic context. Looking towards the community and interact with its inhabitants was a priority at that time.

However, a definite structural change in the School's performance was proposed by Rodríguez who, at the beginning of his administration in 1984, presented a project for its reorganization. The close relationship between public health and the context in which it was projected, were the basis for Rodríguez affirmation that "the School must be prepared not only to be incorporated into a new structure but to face the need to train human resources with a different orientation from the traditional one, and to offer a greater diversity of specialized training opportunities in public health." (Rodríguez, 1984). What he wanted for the School become modernized in administrative aspects and in those related to research and teaching activities, in order to propose new themes focuses and techniques in the management of public health problems. He mainly sought to adjust the administrative policies and norms which predominated at the School during those years, to maintain the planning of human resources for the health sector, favor an exchange with other educational institutions and, through professional training, develop a hierarchical promotion system (Rodríguez, 1984). One of the main challenges was to establish a bridge between the available theoretical knowledge and its practical application in the solution of the community's health problems. In 1985, a master's in science focused on epidemiology was opened for the first time. Since 1987, as part of the process called "structural health change", headed by Guillermo Soberón of the Ministry of Health, the changes proposed by Rodríguez started to materialize.

## ***The creation of the National Institute of Public Health (INSP in Spanish)***

The INSP first director was Julio Frenk who, among other important physicians, started far-reaching changes in the development and evolution of the School, which was directed at that time by Enrique Ruelas. The School

became a part of the Institute and since research and human resource training were considered necessary processes for starting and strengthening the structural change in health, a merger was announced between the School, the Research Centers in Public Health and the Center for Research in Infectious Diseases. This meant opening lines of projection from the biomedical area and making teaching and research adequate to the health demands of those years; that is, the so-called epidemiological transition which, in Frenk's words, "opens new dimensions to the complexity of the national pathology." (Frenk, 1987; 192). There was interest in strengthening epidemiological, administrative, economic, political and social knowledge, for which to the existing master's in sciences with a specialization in epidemiology was added. In 1989, the Doctoral Program in Public Health Sciences was opened and during the administration of Carlos Santos-Burgoa (1989-1995) the training programs were expanded Figure 3.

For the Mexican School of Public Health, the 90's also meant a time of administrative and structural changes, with a history of its own. Jaime Sepúlveda, at the head of the INSP from 1995 to 2003, promoted the training of human resources as a fundamental task of the Institute; that is, the School was integrated into the Institute (Sepúlveda, 1987; 192). Perhaps this process responds to what he defined as the central element of the Institute's mission: "integration". To reinforce and place the School at the same level of the international ones, the Academic Secretariat was created (SAC in Spanish), whose function was to guarantee the quality of the teaching programs. The first academic secretary was José Luis Valdespino (†). In an eight year period, other research centers were opened and, to broaden the academic supply of the School, headquarters were opened in Tapachula, Chiapas and Mexico City.

In 2005, the INSP was managed by Mauricio Hernández, and Laura Magaña was named Academic Secretary. She was the first woman and non-medical professional to hold this position. Her training in the education area was fundamental to promote an educational updating and during this time, she has managed to get all the School's academic programs to belong to the register of excellence of the National Council of Science and Technology (CONACYT, in Spanish). In 2006, the North American agency CEPH or Council on Education for Public Health accredited the School, thus becoming the first institution outside of the U.S. to achieve this. Two years later (2008) accreditation was obtained from the Network of European Institutions of Higher Education in International Health or TROPED, and in 2010 the incorporation into the Association of European Public Health Schools or ASPHER. Not only was international recognition obtained for the INSP Academic Program, but it also became possible to have an important academic exchange in a global and interconnected world. Ninety years after its creation, the



**Figure 3.** Headquarters of the National Institute of Public Health (INSP) in Cuernavaca (Morelos). This construction was built by the Mexican architect Orso Nuñez and inaugurated on January 24<sup>th</sup>, 1991. The photograph was taken by Oscar Fernando Contreras Ibáñez.

ESPM/INSP offers ten concentration areas in the Masters in Public Health, eleven Masters in Sciences, three Doctoral Programs in Health Sciences, a Doctoral Program in Population Nutrition, a Professionalizing Doctoral Program in Public Health, besides the specialization programs in Health Promotion and Public Health and Preventive Medicine. The Academic Program, sensitive to the need for professionalization of the personnel in service, designed the executive modality which is offered at the Tlalpan headquarters on weekends and, since 2006, the virtual modality which allows distance education for professionals who work at the state health services. The educational re-engineering that Laura Magaña promoted followed two main lines: competency-based education and the inclusion of information and communication technologies to enrich the educational experiences.

### Competency-based education

Teaching based on competencies made it necessary to go from a system based on rote learning and plain knowledge to an education centered on the student and on the development, not only of knowledge but also of skills and attitudes needed to face the new challenges in public health. The professionalization of teaching, through teacher training programs, was fundamental for this transformation. Starting in 2007, a higher course (*diplomado*) to professionalize teaching was offered to

professors, with themes such as educational paradigms, collaborative strategies for learning, evaluation of competencies, as well as work days for teacher discussions, among other themes. The incorporation of technologies to this new educational model generated an impressive growth which has gone beyond the physical classrooms, through virtual learning environments that now made it possible for the health workers to upgrade their skills and develop new competencies.

Technology plays a fundamental role in the development of the ESPM. The Virtual Campus 2.0 is a space for researchers, students and the general public, to share and generate information in an interactive way, which explains the term «2.0». This campus systematizes many of the SAC's processes, and is a source of information and training, since it contains the Blackboard, Webex and Moodle platforms. In the campus there are several sections such as "Academic Offer", "Student Community", "Management and Services", "INSP Network", "Press Center", where the daily news can be seen with respect to academic matters, invitations to events, congresses, courses, as well as the Institute's participation in the media, such as the radio. The news can be commented by visitors of the virtual campus, which is an interactive element for debate, the exchange of ideas and the creation of a learning space Figure 4.

In these times, the Institute promoted the creation of the collection entitled "Academic (SAC) Notebooks", whose purpose is to disseminate the idea. The Academic (SAC) Notebooks may be consulted and





**Figure 4.** Virtual Education at the INSP, 2012. The photograph was taken by Oscar Fernando Contreras Ibáñez.

downloaded at: HYPERLINK "<http://www.inspvirtual.mx>" <http://www.inspvirtual.mx> and they are distributed at the different research centers.

Nowadays, the INSP is directed by Mauricio Hernández and Laura Magaña is still head of the Academic Secretariat. The future challenges are enormous but the academic soundness achieved by the ESPM will allow it to continue walking with a firm step towards its first centennial.

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