MEDICAL MODERNIZATION IN MEXICO: PARADIGMS, LABOR MARKETS, AND THE STATE

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Key words: Health systems, public sector, supply of physicians, decentralization, Mexico.

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ABSTRACT

This article attempts to connect the development of modern medical institutions in contemporary Mexico with a series of social changes, such as the expansion of State intervention in health care and the labor market processes that eventually led to the appearance of underemployment among physicians while important segments of the population lacked ready access to services.

As a response to the contradictions of the dominant model of specialized, hospital-based medical care, a new paradigm rooted in primary health care has begun to emerge. This new paradigm forms part of a larger reform that has been under way since the end of 1982. The reform includes the recognition of a social right to health care and an energetic effort to decentralize the operation of services from the federal to the state and local levels. Part of its conceptual and organizational basis is a modern definition of public health as the application of the biological, social, and administrative sciences to the analysis of health processes in human populations and the organization of comprehensive health services with a defined population base.

It is expected that the kind of integrative analysis presented here will help to understand, in a cross-national comparative perspective, the complex dynamics that characterize health care patterns in the world.

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INTRODUCTION

Mexican medicine faces today a pressing paradox: while close to 10 million people, representing one-eighth of the population, lack ready access to medical services,[1] some 13,500 physicians living in the largest cities are unemployed or underemployed.[2] This situation is not accidental; instead, it derives from the "model of medical development"[3] that the country has followed. If the imbalances inherent in this model are to be corrected, it becomes necessary to examine its basic features in a broad historical light. What such an analysis reveals is the intricate interplay among three processes: the increasing involvement of the State in the organization of health care, the quantitative and qualitative changes of the medical labor market, and the emergence of alternative paradigms about what modern health care is.

In order to set the conceptual context for the analysis, this article begins with a discussion about the way in which the notion of 'public health' has evolved until a comprehensive definition has been reached. We then offer a brief historical account about the Mexican health care system. While the efforts to develop an "advanced" system date from the early colonial days, the paper focuses on the period after 1958, when the contradictions among the three aforementioned processes have become most acute. Out of those contradictions, we emphasize manpower problems, in particular medical under- and unemployment. In the last section we examine the efforts that have been undertaken during the eighties to reform the organization of the health system and to introduce a new paradigm based on primary health care.

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DEFINITION OF PUBLIC HEALTH

The term 'public health' is charged with ambiguous meanings. Three

connotations have been particularly prominent in its history. The first one equates the adjective 'public' with governmental action, i.e., the **public** sector. The second meaning identifies public health with environmental or nonpersonal services. The third usage is broader, in that it includes the second one but also comprises personal health services of a preventive nature (e.g., maternal and child health programs). There are also associations among these various meanings. For example, in many industrialized countries, there has been a tendency for the private sector to deliver most of the personal therapeutic services, with the public sector assuming responsibility for the nonpersonal and preventive services. Such a tendency has reinforced the notion of 'public health' as a separate subsystem of services provided by the State and largely parallel to the mainstream of high-technology curative medicine.

In recent times, a more integrative view of public health has begun to emerge. According to this view, the adjective 'public' does not mean a particular bundle of services or a form of ownership, but a specific level of analysis, namely, a **population** level. In contrast to clinical medicine, which operates at an individual level, and to biomedical research, which analyzes the subindividual level, the essence of public health is that it adopts a perspective based on groups of people, or populations. This population perspective of public health inspires its two applications, as a field of inquiry and as an arena for action.

As a multidisciplinary field of inquiry, public health can be defined as the application of the biological, social, and administrative sciences to the understanding of health phenomena in human populations. Hence, it comprises two major objects of analysis: on the one hand, the epidemiologic study of the health **conditions** of populations; on the other, the study of the organized social **response** to those conditions, in particular, the way that

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such response is structured through the health care system.[4]

As an arena for action, the modern concept of public health goes beyond fragmentary dichotomies, such as personal vs. environmental, preventive vs. curative, or public vs. private services. Instead, it refers to the organization of comprehensive health services with a defined population base. Its essence is, therefore, the health of the public. As such, it includes "the organization of personnel and facilities to provide all health services required for the promotion of health, prevention of disease, diagnosis and treatment of illness, and physical, social and vocational rehabilitation."[5] As can be seen, public health encompasses the narrower concept of medical care, not with regards to its technical and interpersonal aspects as they are applied to individuals in clinical settings, but with respect to its organizational dimension in relation to defined groups of providers and clients (see Figure 1).

A major factor in the emergence of this integrative view of public health has been the growing participation of the State in the financing and delivery of all types of health services. Indeed, any original limitation of the public sector to environmental or preventive services has now been superseded in most of the world, as the State has assumed the leading role in the health system, including personal medical care. In fact, the largest share of the resources currently expended by the public sector in almost every country go to the delivery of personal curative services, whether they are provided by private contractors or by salaried personnel of the government.

In the case of Mexico, the State has been the most important force for the development of a modern health system. In this process, medical care has had a disproportionate weight. For this reason, after a brief historical introduction most of the following discussion will concentrate on medical care. In the last section, however, we will examine the way in which the

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more comprehensive view of public health has come to be implemented.

HISTORICAL CONTEXT

The Place of Traditional Medicine

At the time of the Spanish conquest in 1521, the Aztec civilization had a well-developed system of health care. It is doubtful that European medicine had at that time any therapeutic advantage over native practices. Nevertheless, the fact that these practices were an integral part of Indian religion and culture made their destruction by the Spaniards a necessary part of the cultural struggle that consolidated economic, political, and military dominaton.[6,7]

Obviously, the medical conquest of ancient Mexico was never a complete process. Traditional beliefs and practices continued to play a crucial role during most of the Colonial period. Even today, they shape the health care of the remaining eight to ten millon Indians and of other rural inhabitants. Yet, the early and explicit attempts to neutralize traditional medicine have made it a less pervasive element in the contemporary health care arena of Mexico than of other countries. Furthermore, it must be remembered that Mexico was the cradle of European medicine in the Western hemisphere. Indeed, it was there that the first medical course was taught, the first hospital built, and the first medical textbook printed.

For these reasons, the central issue of medical modernization in Mexico has not been the defeat or cooptation of traditional practice--though this is still an important problem and a point of controversy. For the bulk of health care, however, modernization has meant a succession of competing paradigms within European medicine. The rest of this paper will focus on the adoption of one of those paradigms--namely, "scientific medicine"--, on the

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imbalances that such a process has produced, and on the emergence of an alternative.

Early Institution-Building

The seeds of modern, scientific medicine were planted in Mexico around 1920. After more than one century of civil strife through the wars of Independence (1810-1821), Reform (1858-1867), and Revolution (1910-1920), conditions were ripe for an energetic effort at economic, cultural, and scientific reconstruction led by the postrevolutionary State. In 1924 the first specialized wards (for cardiology, gastroenterology, and urology) were created at the General Hospital of Mexico. During the 1940s, national specialty institutes were established in the fields of pediatrics, cardiology, and nutrition and internal medicine. In 1943 the federal government created the Ministry of Sanitation and Public Assistance and the Mexican Institute of Social Security. The former was given the responsibility of organizing environmental and preventive services for all the population and also of extending minimum curative services to the countryside. The latter was to provide medical care to the blue-collar workers of the rapidly growing industrial plant.

The institution-building efforts of the first half of the twentieth century set the stage for a radically new form of conceiving, organizing, practicing, and teaching medicine. In this process, the State assumed the leading modernizing role, operating through fundmental changes in the medical labor market and in the institutionalization, by the medical education system, of the new paradigm of health care. We will next try to analyze the connections among these changes, which became most clear around 1958.

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THE MODERN HEALTH CARE SYSTEM*

The Role of the State

The period from 1958 to 1967 witnessed an unparalleled transformation of the health care system in Mexico through a very marked expansion of the participation of the public sector in the production of medical services. As Donnangelo[8] points out, the growth of State intervention in medical care has both a quantitative and a qualitative expression. The former involves an increase in the volume of services brought about by devoting more public resources to health care and by extending the coverage of the population.[9]

On the qualitative side, the expansion of State intervention usually entails a redefinition of the prevailing paradigms about medical practice. Compared to Kuhn's classical formulation,[10] our usage of the term paradigm is broader, denoting, for the specific arena of medical care, an ideological model about the form, content, and organization of medical work, that is to say, a set of rules that prescribe, in a normative fashion, the ways in which human and material resources should be combined to produce ideal types of medical services. The State is one of the basic sources of these rules, as it represents a major agent for rationalization and modernization.[11]

In the late fifties and early sixties the new paradigm about medical care that started emerging in Mexico and that accompanied the expansion of State intervention was the paradigm of the what has been called "scientific medicine,"[12] as expressed in a highly rationalized mode of medical practice,

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*This section is based, with modifications, on parts of my article "La atención médica, la enseñanza de la medicina y el mercado de trabajo para los médicos: el internado en México," which appeared in Educación Médica y Salud, vol.18, No.4, 1984, pp. 329-343.

one that is based on the division of medical work according to specific specialties, that finds its preferred space of action in the centralized structure of the hospital, and that fits the institutional framework of State-owned or State-financed organizations offering high levels of technological and administrative resources. Indeed, from 1958 to 1967 the Mexican State reoriented the basic definitions regarding the types of **sites** where medical care would be predominantly produced, the types of **activities** that would determine the character of medical work, and the types of **institutional settings** which would dominate the production of medical services.

First, with regard to the sites of health care, there was a definite shift from ambulatory to hospital practice. For instance, the number of medical care units with beds that belonged to the Mexican Institute of Social Security grew by 63 per cent in just the five years from 1959 to 1964, and the total number of beds actually doubled during the same period. In a parallel fashion, the Ministry of Sanitation and Public Assistance increased the number of its hospitals from 238 in 1959 to 731 in 1964. The emerging predominance of the hospital was epitomized by the construction of large medical centers that grouped several specialty hospitals.[13]

As far as the change in the dominant types of activities is concerned, there was a movement away from general and into specialty practice. As indicated earlier, this trend had started since the decade of the forties, when several semiautonomous specialty hospitals and institutes were founded. During the period of fast expansion of State intervention, the role of specialization as the organizing principle of the producton of medical services became consolidated. This process was reflected, for instance, in the creation of tertiary medical centers and in the growth of residency programs, which by the 1950s were present in almost all the hospitals of

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Mexico City.[14] As a consequence, the ratio of generalists to specialists working for the Mexican Institute of Social Security went from 1.75 in 1961 to 0.93 in 1975.[13]

Finally, the relative dominance of the various types of institutions that provide medical care also changed. To begin with, the State became the major source of regulation and production in the market for medical services, overshadowing the private sector in terms of population covered and volume of services. And within the public sector itself the social security system began to acquire a central position at the expense of the public assistance institutions.

This process deepened the class diversity of the Mexican health care system. First, the coverage of private services was restricted to the privileged few who could afford them. By 1986 the proportion of the population who used only private services was estimated at a mere 5%. It should be noted, however, that the private sector plays other roles in the system. For example, it provides a "safety valve" for the social security institutions, since some of their beneficiaries--even if only a minority--obtain at least part of their care in the private sector. Another important role of the private sector is represented by the large amount of first-contact services that is provided through the vast network of drug stores. In addition, most ot the pharmaceutical and medical equipment companies are privately owned.

Notwithstanding these other influences of the private sector, the fact is that, with the fundamental changes that the structure of the health care system began to experience in the late fifties, the public sector emerged as the dominant force. However, the public sector itself became divided into a two-class system: social security institutions with large resources to take care of blue- and white-collar workers mostly in urban areas, versus public

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assistance organizations responsible, with considerably less resources, for the health of the rural population and the urban poor.[15] To give but one example, in 1986 health care expeditures per capita were 3.5 times larger in the social security subsystem, which covered about half of the national population, than in the public assistance sector, which took care of one third of the Mexicans. Similarly, there were 40% less hospital beds for every 1,000 noninsured people than for the insured population.[16]

Why did social security become the dominant form of State intervention in medical care? An important factor seems to have been the series of 70 strikes that affected the country in 1958. As a response to such a level of labor unrest, the State extended social benefits, including medical care. Indeed, "social security concessions were instruments used to restore social peace..."[17] Just as public assistance represented a means for legitimizing, in its first years, the regime that emerged from the Mexican Revolution, so social security constituted the organized response of the State to the changing realities of urbzanization and industrialization, including the requirement of a healthy and productive labor force. Furthermore, the fact that the social security system covered specific, closed propulations made it particularly compatible with the corporatist structure of interest representation that prevails in Mexico.[18-20]

Because of these factors and of its separate and protected line of financing, the social security system in Mexico has been able to provide the highest levels of administrative and technical resources, those that have been best suited to the institutionalization of the paradigm of scientific medicine in Mexico.

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Manpower Implications

The rapid expansion of State intervention in medical care that took

place from 1958 to 1967 introduced a double change in the medical labor market: a) a quantitative increase in the manpower requirements of the medical care system and b) a qualitative reorientation in the dominant forms of medical work and therefore in the types of skills that physicians were expected to master. The medical education system was able to respond adequately to the latter but not to the former.

On the qualitative front, a major reform of medical education revised the curricular structure so as to better adapt it to the shift towards specialty and hospital practice. Prior to this reform, most medical schools in Mexico maintained a curriculum whose clinical portion (following two years of basic sciences) was still very much influenced by the French tradition, with three years of general clinical instruction that was mostly based on the rather unspecialized distinction between internal (i.e., medical) and external (i.e., surgical) phenomena. The needs for practical training of medical students were satisfied, during the sixth year, by a "practicum." This was only a part-time activity to be discharged by working a few hours in some hospitals after attending formal lectures and by being on duty some occasional nights every week. In a parallel fashion, students might learn directly from the practice of medicine by becoming informal assistants to established physicians. All this was changed in 1960, when the National University of Mexico formally approved a new curriculum for the School of Medicine, which introduced an organization of clinical courses based on the specialized study of each organ or system. The sixth year of this new curriculum was occupied entirely by an internship, whereby students were required, for the first time, to devote one year to full-time activities in a hospital before obtaining their medical degrees.[14]

The internship provided future physicians with the practical skills that would allow them to work in hospital settings. Quantitatively, it also

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represented a means to satisfy part of the the new manpower requirements brought about by the expansion in State production of medical services. This role of the internship was particularly important, as it served to compensate, in the short run, the lack of a commensurate growth of the supply of graduate physicians. For instance, enrollment at the School of Medicine of the National University of Mexico remained practically constant between 1958 and 1967. Further, from 1961 to 1965 no new schools of medicine were opened, and from 1966 to 1970 only four such schools started functioning.[21]

Beginning in 1967, and even more so since the early 1970s, the quantitative relationship between the medical education and the medical care systems assumed almost the mirror image of the previous decade. While the growth of the health care sector slowed down and even diminished in certain aspects, the medical education system experienced an explosive expansion. Thus, a stagnant public investment in medical care led to a reduction in the rate of growth of services produced and of number of beds, both at the Mexican Institute of Social Security and at the Ministry of Sanitation and Public Assistance. For example, the number of beds belonging to the Institute grew from 1959 to 1967 at an annual rate of 12 per cent, compared to only 4 per cent between 1967 and 1976. Likewise, from 1959 to 1967 the production of ambulatory visits increased at an annual rate of 9 per cent and the number of hospital admissions at a rate of 15 per cent. From 1967 to 1976 the corresponding figures were 5 and 7 per cent, respectively.[13]

At the same time, the system of medical education started growing through two processes: first the expansion of enrollment in the existing schools and then the creation of a large number of new schools. The total number of medical students in the country went from 28,731 in 1970 to

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93,365 in 1980. Since then, it began to decline, although in 1983 it still reached 79,122.[22] In a paralell fashion, medical schools doubled from 26 in 1970 to 54 in 1980[23] and reach 58 at present.

The common determinant of both the slowdown in the health care sector and the growth of the medical education system appears to have been the economic crisis that affected the country in the 1970s. As a response to this crisis, social programs such as medical care were cut, while at the same time the middle and higher educational systems were expanded in order to accommodate a larger number of youngsters who were unable to find a job in the general labor market.

The net result, as we have seen, was that unemployment and underemployment became prevalent among medical graduates. Indeed, the number of new physicians entering the medical labor market increased more than five times, from 2,493 in 1976 to 14,099 in 1983.[22] Yet the number of residency positions has remained relatively constant, at around 2,000 per year. Furthermore, a recent study estimates that, whereas in 1971 every physician had an assured job, by1984 up to four doctors had to compete for every vacancy in the formal, salaried positions of the private and public sectors.[24]

Those that are unsuccessful in this competition must become self-employed, enter a growing informal health care sector characterized by job instability and very low productivity, or else abandon the practice of medicine. A representative household survey of people holding M.D. degrees in the 16 most important cities of Mexico revealed that in 1986 the rate of un- and underemployment stood at close to 17%, affecting 13,500 doctors.[2]

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PRIMARY HEALTH CARE: AN EMERGING PARADIGM

The coexistence of doctors without jobs and people without doctors has brought forth the limitations of the prevailing paradigm based on specialty and hospital care. The end of the seventies seems to have marked a fundamental shift in health care policy. Concepts such as universal access, right to health care, primary care, and community participation define the new discourse of modernity in the health arena.

Starting in 1979, when the resources generated by the oil boom could have sustained the continued growth of specialty hospitals, two large-scale innovative programs were launched to extend basic health care coverage. The first one was a "social solidarity" program, run by the Mexican Institute of Social Security, which in this way was able to apply its organizational expertise to the uninsured rural population. As a result of this effort, over 3,000 rural medical units and 1,600 beds in rural general hospitals were built, with a coverage of 11 million people.[25] The second program, which began in 1981, developed a modern network of 255 health centers for over 4 million slum dwellers of the large cities.

Both of these programs opened new employment opportunities for physicians who were willing to practice general or family medicine in rural and periurban areas. At the same time, there was a reduction in the growth of medical schools, reflecting that they had reached saturation levels in the recent past and also that a prosperous economy offered a greater diversity of options to the young. Despite these favorable developments, the expansion of medical school enrollments that had taken place during the previous decade was so marked that the supply of physicians continued to exceed the demand, as we have shown before.

With the severe economic crisis that began in 1982, there was a large risk that the State might revert to the usual response of cutting social

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programs. Instead, the new administration that came into power on December of 1982 declared that health care was one of its top priorities, since it is precisely in times of economic crisis that the majority of the population can least afford cuts in social programs.

This decision launched the most profound health care reform in the past forty years. Indeed, since 1983 the Mexican health system has undergone a series of structural changes that cover a broad spectrum, from the ethical, legal, and political conception of health care, to the concrete strategies for the organization of services.[26]

The health care reform began with an amendment to the Constitution, which recognized a social right to health care. The amendment introduced a new principle for allocating the benefits of health care, namely, the principle of citizenship. This principle aims at superseding the requirements of previous financial contribution, which guides social security programs, or of demonstrated financial need, which underlies public assistance. Instead, every Mexican is entitled, by virtue of citizenship, to a set of basic health services.

In order to more specifically legistate the Constitutional mandate, a General Health Law was passed by the Congress in February of 1984. Five months later, the National Health Program was approved as the basic policy instrument to guide the activities of the entire health sector. These documents provided the legal and programmatic blueprint for the establishment of a National Health System.

In order to organize the structural change in health care, five major strategies have been adopted: decentralization, administrative modernization, sectorization, intersectorial coordination, and community participation.

The basis for <u>decentralization</u> is a redefinition of the role of the Ministry of Health. In the past most of its energies were absorbed by the

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direct operation of health care facilities and programs. With decentralization the responsibility and resources to run the programs is gradually being transferred to the state and local governments, which are more responsive to the needs of their own populations. The Federal Ministry of Health can now reorient its role as the coordinating center of the National Health System, with responsibilities for overall planning, financial management, enforcement of standards of care that will prevent quality differentials among states, sanitary regulation, research, promotion of technological independence, and human resource development. The Ministry has assumed these functions with a smaller and more rational organization, which has been achieved through the strategy of administrative modernization, and with enhanced authority over the rest of the public organizations providing health care, which has been exercised through the strategy of sectorization (see Figure 2).

These strategies are particularly relevant to our previous discussion about the concept of 'public health'. Before the current reform, the Ministry of Health was called the Ministry of Sanitation and Public Assistance, a name that reflected old conceptions. Indeed, since its establishment in 1943 the Ministry had been split into two major divisions: a Viceministry for Sanitation, in charge of the nonpersonal and preventive services (i.e., the traditional usage of the term 'public health'), and a Viceministry for Public Assistance, responsible for operating curative medical services which were distributed on the basis of the principle of indigence or financial need. In 1984 this obsolete structure was changed. Instead of the old divisions, the modern conception of public health was adopted, so that a single Viceministry of Health Services was formed, integrating nonpersonal and personal, preventive and curative services into a single normative framework. In accordance with the new mission of the Ministry, specific

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areas were differentiated for functions that previously were either absent or dispersed among many departments. These crucial functions are planning, research and development, and sanitary regulation (i.e., the control functions whereby health authorities regulate commercial and industrial activites that may pose hazards to the public, including the manufacture of drugs and other technological inputs for health care). After the organizational innovation had been consolidated, it was formally recognized in January of 1985, when the former, restrictive name of the Ministry was changed to the more comprehensive designation of "Ministry of Health"[27] (see Figure 3).

The health care reform cannot seek only to transform the relationships within the health sector. Instead, it must also look to the broader societal context. To this effect, the strategy of intersectorial coordination includes actions aimed at influencing the many factors beyond health care that influence the health status of individuals and communities. Of particular relevance to the broad conception of 'public health' are two sets of interactions: first, with the Ministry of Urban Development and Ecology, which is in charge of environmental protection in Mexico, and, second, with the Ministry of Labor, which, together with the social security institutions, carries out major programs in the area of occupational safety and health (see Figure 2).

Another coordination effort, which has direct implications for our previous discussion of medical underemployment, has been the creation of the Interinstitutional Commission for Human Resource Development in Health. Jointly chaired by the Ministers of Health and of Education, this Commission also includes representatives from the universities. In this way, it has been possible, for the first time, to have a forum where all parties involved can decide together the numbers and types of health care personnel that should be trained, in accordance with the requirements and

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employment capacity of the health sector.

Finally, the strategy of community participation underlies the drive to extend coverage to all the population through primary health care. As part of this effort, the government has developed an ambitious program, which will help to close the gap between the potential of medical progress and the realized access to its benefits by everyone. The first stage of the program includes the strengthening of existing primary health centers and the construction of 380 new ones. More than the mere expansion of infrastructure, this program has included the development of a precise primary health model, which specifies the staffing, responsibilities, and substantive content of the centers.

It is still too early to tell whether the strategy of achieving universal access through primary health care and community participation will indeed turn out to be a new paradigm. The strategy certainly seems to offer a historical opportunity to reform manpower policy so that the quantitative and qualitative interactions of the medical labor market will better respond to the health needs of the population.

CONCLUSION

The foregoing analysis has revealed a deep and rich connection linking medical modernization with transformations in the conditions of the labor market and also, ultimately, with broader processes of social and economic development. It would be interesting to investigate whether the relationships discussed here also hold in other countries. Indeed, it seems necessary to pursue integrative studies that connect the macrosocial phenomena of State intervention in health care, medical labor markets, and professionalization to specific forms of organization of medical practice and

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medical education. Analyses of this kind would greatly advance the elaboration of a comparative perspective that would allow a better understanding of the intricate patterns of health care in the world today.

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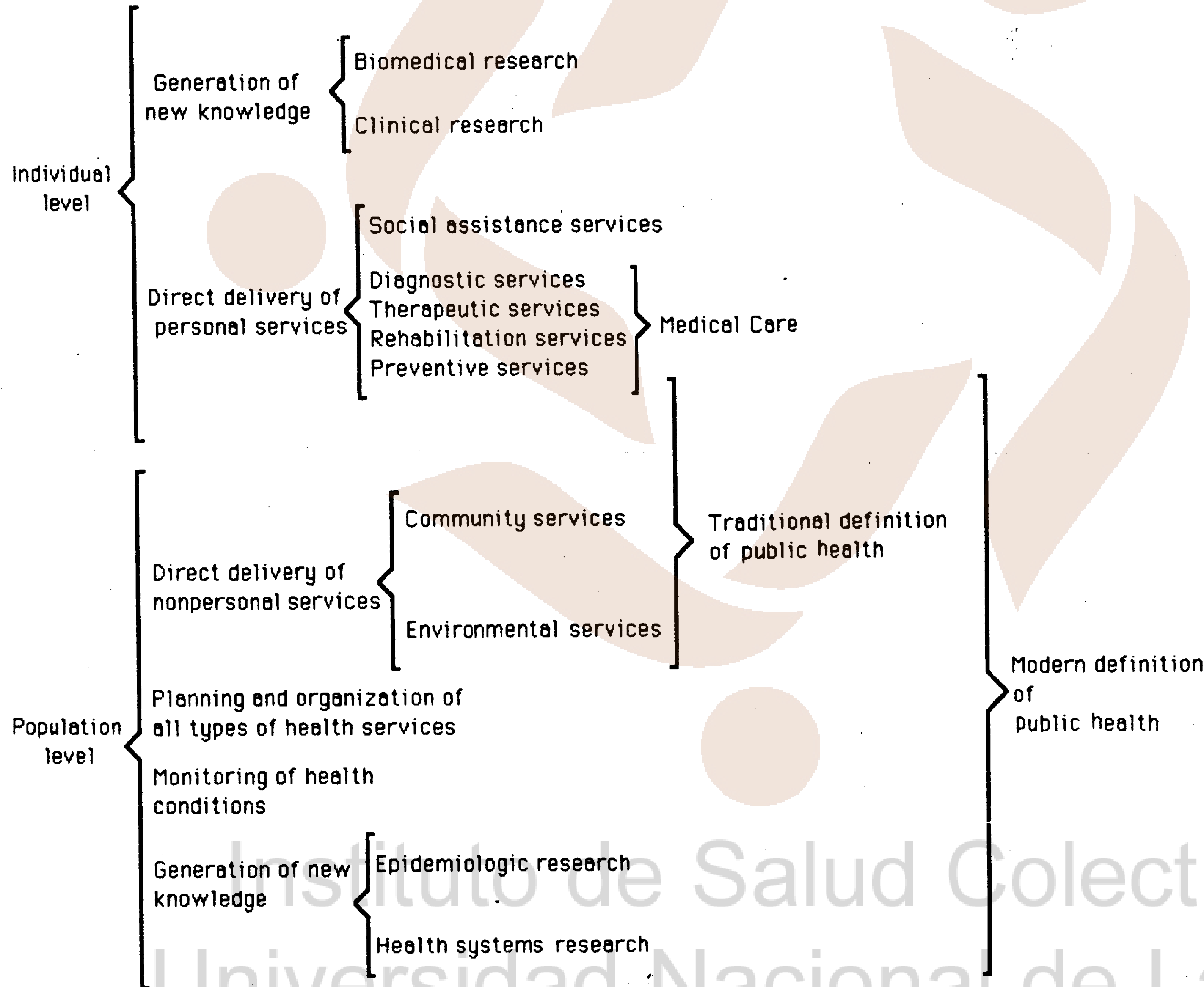
FIGURE 1

TYPOLOGY OF HEALTH ACTIONS



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STRUCTURE OF THE MEXICAN HEALTH SYSTEM

AGENCIES DEALING WITH DETERMINANTS OF HEALTH STATUS

AGENCIES DEALING WITH HEALTH CARE ACTIONS

FIGURE 2

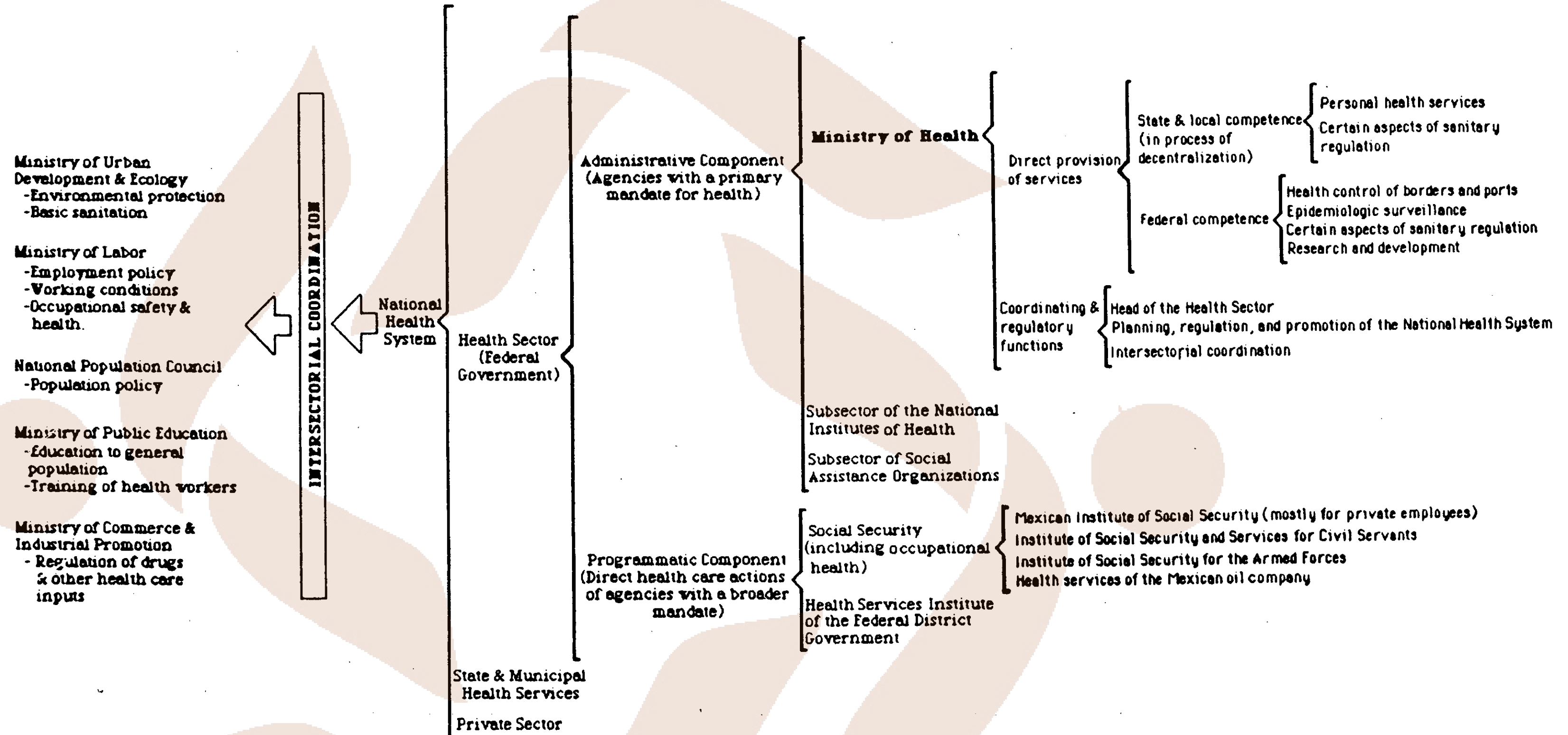

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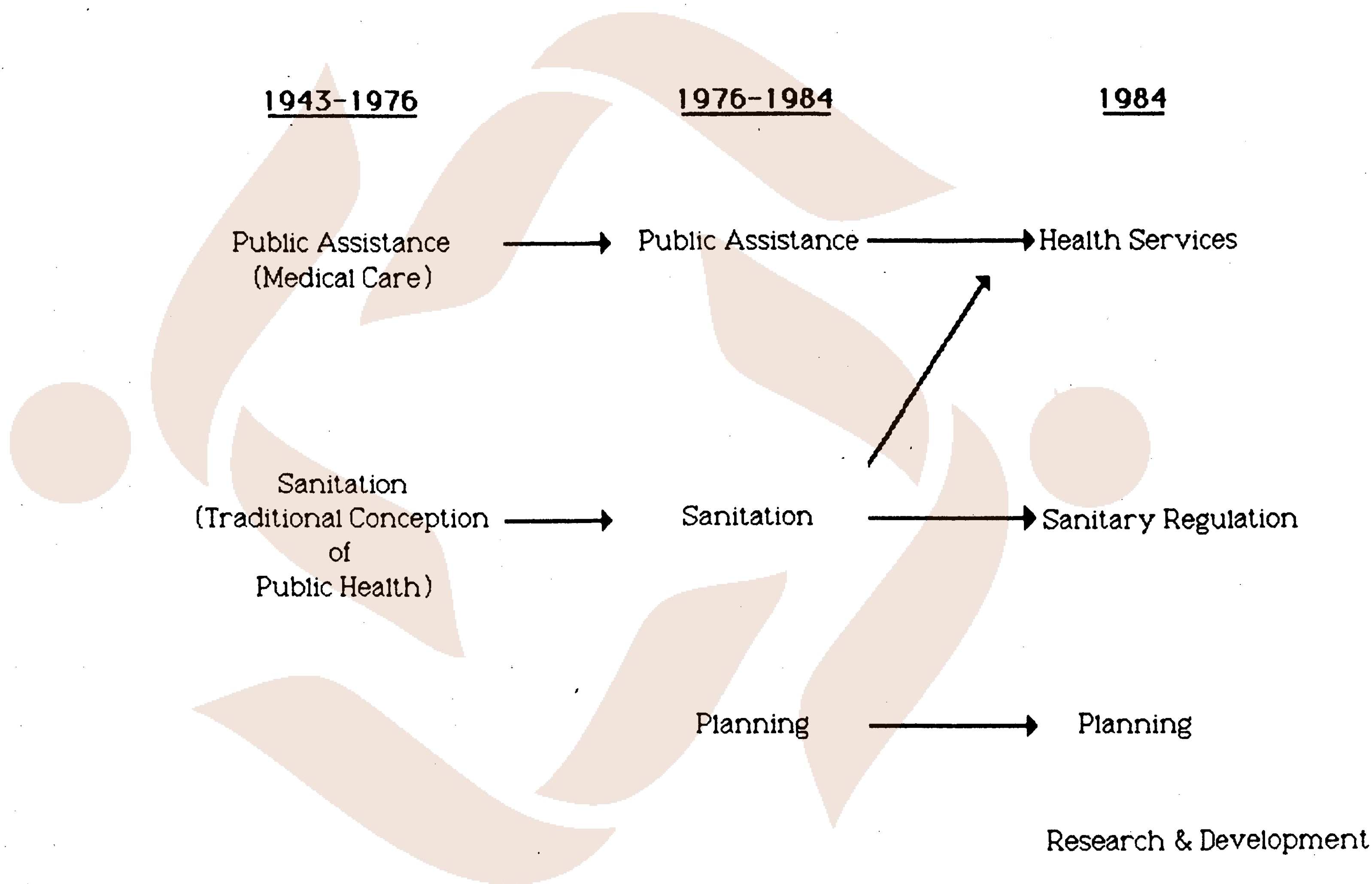
FIGURE 3

EVOLUTION OF THE ORGANIZATION OF THE MEXICAN MINISTRY OF HEALTH



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