

Public Health, the Medical Profession, and State Building: A Historical Perspective

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perspective

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As the opening chapter in this volume, it is perhaps appropriate to look at history as this can provide insights about the progress that public health has made, the challenges that it still faces today, and the options for future action. This chapter traces the main contributions to the development and evolution of public health policies in the Arab world. In so doing, several key themes, among many others, emerge: the impact of colonialism and encounter with Western medicine, the relation of public health to the state building and modernization project, the role of the medical profession and changing policies in relation to changing political and economic realities. We intend to develop these themes and show their complex interactions in laying the foundations for modern public health.

We will argue that public health was a principal tool in the modernization project (seen as an ideological and sociopolitical project) which emerged in the late Ottoman period, and later subjected to the interests of colonial powers. The newly independent Arab states relied on promoting social 'progress' and providing access to benefits of development, with health at the heart, as a foundation of legitimacy. This is translated in health system financing and organization and education, regulation, and large scale employment of health professionals. We focus on the medical profession, as it played a central role in both the public health and modernization projects. As champions of health, physicians have gained immense prestige commensurate with their responsibilities and their relation to the state and its political choices.

Approach

Health and disease are socially constructed concepts that vary in time and place based on the experiences, practices and representations of social and professional groups, including physicians (Becker 1961; Freidson 1970; Boltanski 1971) Such concepts are useful in observing social change (Augé 1983). In many industrialized countries, research has examined the representation of health and disease, health systems organization, hospital management, medical practice, and the inter-relationships among health professionals, patients and governments. Foucault's work demonstrated medicine's role in society, disciplining the body as an instrument of power.

In the Arab world, research on the history and sociology of health and medicine remains limited. While medieval Arab medicine has long interested historians of science, the history of modern public health in the region has received less attention. Researchers have examined epidemics (Watts 1999) and changes in medical practice during the 19th century (Gallagher 1983; Jagailloux 1986), colonial times (Turin 1971), and in the 20th century (Chiffoleau 1997). Several other volumes and research studies, referenced throughout this chapter, have attempted to fill the gaps. This chapter builds on prior works to provide a sociohistorical perspective of the processes (social, economic and political) processes that have greatly influenced health, and the development of public health, in the Arab world. This has led us to recognize several distinct, but overlapping rather than discontinuous, eras and corresponding processes.

Historians might argue, perhaps rightly, that the Arab world, like other regions and cultures, modern public health has old historical seeds (Watts 2003). Obviously, this would depend on what we assign to the definition of public health. For example, management of disasters of public health proportion was done well early in the Arab-Islamic civilization. Health systems, including hospitals for the mentally ill (bimaristans), and healthy administration of public space were reasonably developed in the peak of the Arab-Islamic empire. The principles of social justice and the right of all to protection are enshrined in religious principles and organizational set-ups in the region.

While recognizing the importance of these historical seeds, our analysis is grounded in seeing public health as a modern development, emerging principally in reaction to health problems associated with urbanization and industrialization in 19th century Europe, and thus rooted in social reform movements and emergence of modern states. Public health in the Arab world developed in relation to, and sometimes in conflict with, European powers and their public health.

The latter, argues Camau (1990), "as a system of distinct roles is a feature of the modern state." Medicine and the medical profession were central to the emerging public health. The French Revolution placed medicine at the service of its utopian vision to eradicate human ills produced by an unjust society. This led, Foucault observes, to "the birth of two great myths: the myth of a nationalized medical profession, organized as clergy; and the myth of a total disappearance of diseases" with society "amended back to its original health". (Foucault [1963] 1990: 32) Therefore, there was a political dimension to the tasks of physicians.

Later in the 19th, poor environmental conditions and rising poverty in urban areas forced governments to intervene to prevent epidemics and ameliorate health conditions through sanitation and urban planning measures. Public health was variably defined as *environmental sanitation*, *preventive medical science*, and *the promotion of positive health* (Suchman 1961). The state entrusted health teams, predominantly physicians but also other professionals such as labor inspectors and engineers (Gaudin 1987), to implement measures to protect public health while serving multiple goals: economic (maintaining a healthy workforce), political (preserving the urban order), social (promoting well-being) and imperial (controlling the colonies). The latter goal, as we will discuss later, was an important feature of the Arab counter with Western colonialism and a defining aspect of public health development in the region.

A note of caution is worthwhile here. Although Arab countries share broad trends of relationships among state projects, citizens' expectations and behaviors, and professional interests, each country has marked its own specific path. We will not deal with all Arab countries but seek instead to show, through examples based on available data, how these relationships have evolved.

1. Health and Medicine in the 19th century reforms

Both the Ottoman Empire and Egypt under the reign of Muhammad Ali faced the economic and imperial penetration of European powers; aware of their 'backwardness', they tried to catch up through top-down reform policies borrowing the techniques of Western modern science. In the field of health and medicine, the introduction of European medicine did not lead to an abrupt break with established traditions as both Arabic and European medicine

shared the same ancestry of ancient Greek medicine. Representations of the body and disease in the Arab world in the early 19th century were based on the theory of 'tempers', hardly different from those prevailing in Ancien Régime¹ Europe. Arab populations had a multitude of health care options, the dominant one being traditional medicine, a modified form of classical Arabic medicine. Patients had freedom of choice and autonomy but illness and health care were considered private matters. Therefore, the state's increasing involvement in health and healing must have appeared as a radical novelty.

Ottoman and Egyptian authorities did not initially plan to provide broad population health services (despite their importance in the Islamic tradition, hospitals had become mere charitable institutions rather than dedicated to the art of healing). Instead they first focused on sanitary reforms and quarantines to protect armies from epidemics. Establishment of medical schools in Cairo and Istanbul (1827), whose graduates were mainly absorbed into the army, supported this system. The Egyptian army's demobilization after defeat in Syria in 1840 led Muhammad Ali to appoint military doctors to civilian institutions, thus extending the benefits of modern medicine. Clot-Bey, a French doctor residing in Egypt for nearly 40 years, established a provisional health care system whereby health officer graduates from the medical school in Cairo worked in hospitals of major regional cities and disseminated rules of environmental hygiene and smallpox vaccination, often with the help of barbers.

During the reign of the Ottoman Sultan Abdul Hamid II (1876-1909), the authorities expanded medical care and public health measures in the Arab provinces, for example increased the number of municipal hospitals and multiplied the posts of civilian sanitary doctors and stations to ward off cholera and other infectious epidemics from overseas ships. During the last third of the 19th century community hospitals initiated by Christian missionaries emerged, significantly enhancing health care provision, especially in the southern Levant (Bourmaud 2008; Chiffoleau forthcoming). The Mashreq presents thus the originality of having introduced modern medicine and public health without the pressure of external force.

Fighting epidemics coming from abroad remained a priority. Plague had disappeared from Europe but was everywhere in the East until the mid-19th century. Cholera was not endemic but the region witnessed many outbreaks due to international trade with the East since 1831. It was above all to try to stop the ravages of cholera that Ottoman Tanzimat (Turkish for 'organization') and Muhammad Ali established a network of lazarets and sanitary offices managed by indigenous officials and consular representatives of Western powers². Those institutions were called the Health Administration of Alexandria and the Health Council of Constantinople (Panzac 1985). But since these local quarantine measures hindered trade and navigation, Western powers launched international sanitary conferences to redirect health systems to their advantage. Twelve such conferences were convened from 1851 to 1938 and can be considered the first attempt at a coordinated international health policy. At the turn of the 20th century, the progressive elaboration of an international health legislation led to the disappearance of quarantine measures in Europe. The global spread of epidemic cholera that started in the pilgrimage of Mecca in 1865 reversed the earlier liberal emphasis of these conferences in the direction of more severe measures against the 'risk group': religious pilgrims. In the East, a large health control operation was built up with the Ottoman and

¹ Ancien régime is the name given by historians to define the old socio-political regime before 18th and 19th century revolutions in Europe and the establishment of the modern nation state.

² Quaratine measures for pilgrims were also used extensively by the British in Iraq and the Gulf during the early 20th century.

Egyptian authorities fully participating through the joint Health Councils of Alexandria and Constantinople.

2. Colonial health policies and medicalization of the society

Western colonialism of the Arab region occurred over a long period. It started much earlier and lasted longer in North Africa, especially in Algeria (occupied in 1832), but came later and was shorter in the Levant and Mesopotamia, which came under "mandates" imposed by the League of Nations. Independence granted by Britain to Egypt (1922) and Iraq (1932) did not free these countries from foreign domination, although it resulted in a reorientation in social and health policies (See case study on Iraq). The effects of colonial orders were quite different in different Arab regions and countries, depending on pre-colonial experiences of modernization and the nature and policies of colonial powers. But everywhere, social and health policies were determined above all by the interests of the colonizers, for whom trade and export of agricultural products were priorities. These policies were implemented in authoritarian ways. Sanitation became a means of controlling a population considered backward, ignorant and dangerous (Camau 1990; Rivet 1995; Mitchell 2002; Arnold 1993).

a) Poverty, death and disease: Suffering exacerbated by colonialism

Health conditions were miserable in conquered populations. Diseases varied from one region to another but suffering was universal; everywhere one could find both endemic diseases due to malnutrition and poor hygiene and epidemics. But the conditions were not uniform. For example, compared with North African region, health conditions in Egypt were better than in North Africa thanks to public health developments under Mohammad Ali and his successors. By the second half of the 19th century, epidemics were diminishing, although common diseases – diarrhea, pneumonia – caused by under-nutrition and poverty persisted (Panzac 1982).

Colonization made things worse for many colonies. In addition to deaths and disabilities due to direct violence many colonial policies, e.g. confiscation of peasant land and re-organizing the local economies in service of global economic and colonial interests, had dire consequences. Rural economies suffered turmoil; many inhabitants were pushed to displace to precarious urban living. British policies to increase cotton crops in Egypt, such as irrigation approaches ignorant of age-old practices for proper drainage, brought new health problems, as these approaches favored breeding of mosquitoes, and with it malaria (Mitchell, 2002). In the absence of serious preventive measures, 'development' projects, such as roads (Rivet 2002; Box on Iraq) led to more epidemic challenges. Towards the end of the 19th century and turn of the 20th century British policies neglected public health to a large degree, reflecting policies at the empire's home.

Algeria demonstrates the most painful case. Two decades after French occupation (when the so-called 'pacification' was completed), health conditions were deplorable: smallpox, cholera, typhus, syphilis, eye diseases decimated the population. The violence of pacification and expropriation of peasant lands led to famine and drought with consequent weakening of resistance and spread of epidemics.

b) The policies of medicalization

While colonialism was largely responsible for further deterioration of already poor health conditions, colonialist powers took certain measures to ameliorate conditions thought to be most threatening to the colonial project, i.e. epidemics. These measures were based on moralizing policies related to hygiene and medicalization. The discovery in the 1870s, and onward, of germs established the rationale for epidemic control. The case of Egypt is illustrative. By killing Egyptians in large numbers, epidemics threatened the economy. The British were not interested in upgrading social services and preferred repressive control aimed to identify risks and address threats of epidemics. However, common and pervasive illnesses – gastrointestinal, respiratory and parasitic diseases – were thoroughly ignored (Chiffoleau 1997).

But medicine was more than an instrument of epidemic control. Medicine was considered a leading vehicle of civilizing the population, even to a greater extent than education. The contradictions of colonization appeared all too obvious in this role assigned to medicine. The contemptuous image of the indigenes held by the colonizers exaggerated the disciplinary character of sanitary measures imposed on local populations: "Civilization is injected as a vaccine" (Rivet 2002: 129). Local populations resisted mass immunization and other prevention measures associated with the hated political and military control but quickly adopted individual treatments and recognized the abilities of colonial physicians to heal, showing selectivity and pragmatism in dealing with what the colonialist offered.

In Egypt, smallpox immunization campaigns were associated with the ill-perceived conscription program. Its preventive nature was poorly understood. Similarly, the French colonialists in Algeria forced its own vision of health measures soon after occupation. Public health measures included old tools: hygiene, isolation, quarantine, and smallpox vaccination. A vaccination campaign launched in 1847 was interrupted a decade later, due to insufficient French government funding and local non-cooperation. Larger-scale vaccination campaigns resumed in the 1870s after French suppression of uprisings. In Iraq, as in many Arab countries, public health was placed primarily under the auspices of the Ministry of the Interior, meaning the association of health actions with security [see box 1]. It was with the independence of Iraq and the creation of a Ministry of Health and Social Affairs in 1930s that the promotion of population health became a major government concern (Dewachi, 2008).

In addition to public health measures, Western-style curative care was introduced on various scales, aiming at gaining the hearts and minds of the locals (Turin 1971). Egyptians and Algerians did not hesitate to acquire Western drugs seen as effective against malaria crises or ophthalmia. Curative practices remained marginal due to a pervasive shortage of health care exacerbated by lack of physicians.

3. The birth of a medical profession

Under colonialism, physicians were regarded as agents of civilization. However, the establishment of an indigenous medical profession quickly led to confrontation with colonial rules and practices and revealed, though differently in different countries, the close links of medicine, public health, and the national project.

In the early 19th century, while medical practices in Europe and in the Ottoman Empire were rather similar, their conceptual bases were diverging. European physicians relied on experimental methods to analyze the causes of diseases while Muslim ones focused on empirical observations (Gallagher, 1983). European physicians, introduced to Ottoman

courts starting in the 18th century, represented Western interests, especially those of merchants, advocating the importance of health for the development of trade.

In the Maghreb, modern medicine long remained the province of European physicians. The first medical school in Algiers was founded in 1857. Only a handful of locals were given the privilege of attending this school, and only towards the end of 19th century. In contrast, institutions of medical training were established before the colonial era in the Mashreq. In addition to the medical school of Mohammad Ali in Cairo, the Ottomans established a medical school in Damascus in 1903. In parallel, two medical schools were established in Lebanon as part of concurrent missionary projects: Americans established the Syrian Protestant College (later American University of Beirut) in 1866 and French Jesuits established Université Saint-Joseph in 1883. Graduates from those two schools worked not only in Syria and Lebanon but also in Anatolia, Palestine, Egypt and even Mesopotamia, usually in private clinics but sometimes in small private hospitals. The role of missionaries was essential in establishing hospitals in the region. In 1920, Damascus had an Italian and a French hospital (Hanna, 1996). In Bahrain and Oman, American missionaries opened the first two modern hospitals in the first few years of the twentieth century.

Upon occupying Egypt in 1881, the British reorganized the school of medicine, introducing access fees and numerous strict curricular reforms and imposed the use of English. Recruitment was limited to the needs of minimal governmental action. Local physicians were confined to the role of medical officers while senior and prestigious functions were reserved for foreigners.³ In Iraq, where the British lacked confidence in Ottoman medicine represented by a small number of modernly trained physicians, large numbers of military doctors from the Empire, of British and Indian origins, were recruited. The first medical school was founded in 1925, and education was delivered from the outset in English, despite the objection of nationalists.

The choice of the language of medical education was a national issue and has had long lasting implications. The Damascus School of Medicine gave up Turkish in favor of Arabic in the 1920s, but the Cairo University medical school, which had gradually arabized its curriculum during the 19th century, was forced to implement English language in medical training after the English occupation. This remains the case today. The School of Medicine of the Syrian Protestant College, after having used the Arabic for two decades, shifted to English in 1882 (Dodge 1958: 22)⁴. At Université Saint-Joseph medical school in Beirut, medicine has been always taught in French. The choice of the education language determined (an still do) where the brightest young medical graduates go to acquire specialty training.

In Egypt and other Arab countries under mandate, 'local' physicians relegated to inferior positions were frustrated and tirelessly asserted their competence. Their sentiments became part of the national struggle. Remarkably, in Egypt, local physicians succeeded in developing a different perspective whereby public health attention was directed towards endemic diseases rather than against epidemics as proposed by colonial medicine. The first professional associations created in the 1920s in Egypt and Iraq revealed the tension between submission to the British model and the policies of the allied monarchies and aspirations to nationalist interests. Involvement of physicians in the nationalist movements grew in the

³ Interestingly, in UNRWA medical services, Palestinian and Lebanese doctors are called "medical officers", while the organizing and decision making bodies are constituted from Europeans.

⁴. Marwa Elshakry (forthcoming) gives an account of this transition to English and shows how the so-called « Darwin Crisis » led to the resignation of many Arabic speaking teachers.

1930s, showcasing the role of health in the state building and reform project (Longuenesse, 1995, Hanna, 1996). In liberal Egypt, physicians were actively involved in developing a theoretical framework for public health that aimed explicitly and unprecedentedly at social reform. Even though this took place only through a few pilot projects, it was an important forerunner of what would be the model for public health medicine after independence (Chiffoleau, 1997).

4. The welfare state and public health. Between socialism and "patrimonialism"

Arab states emerging from independence wars and struggles in the 1950s and 1960s faced deplorable health conditions: infant mortality rate (IMR) were 145/1000 in Morocco, 155-160/1000 in Tunisia, Algeria, and the Arabian peninsula and 179/1000 in Egypt (rates not seen in western Europe since the late nineteenth century). The situation was better in Lebanon (61/1000) and Kuwait (80/1000). Life expectancy at birth was less than 50 years almost everywhere, except in Lebanon (around 62 years) and in the smaller Gulf States (55-60 years) (Tabutin & Schoumaker 2005). The new states inherited health systems built after the colonial model, oscillating between charity and a colonialist preoccupation with public health. Health facilities and medical centers were ill-equipped and hospitals were concentrated in large cities, where the bulk belonged to religious missions. The medical workforce was meager: Egypt had one physician/2700 population in 1952 (Chiffoleau 1997) while Syria, had one physician/4000 population in 1955 (Bird 1959). The Maghreb, after many foreign doctors left the countries upon their independence, needed several years to catch up to already low rate of specialized medical staff at the end of the colonial period (Camau 1990).

a) Health as a right for all

The activist elites, who led the national liberation struggles, considered misery, poverty and injustice as rooted in the colonial domination. Adopting the ideals of the French Revolution, they claimed health as a right for all in a more just society. The strong representation of doctors in the nationalist movements reflected their mobilization in the social struggle, and illustrated the close link between the fight against disease and the fight against injustice.

Having inherited economies and societies profoundly disrupted by colonialism, Arab states had to shoulder missions assigned elsewhere to the private sector. The growing state control of the national economy meant high expectations from the public. Health and education became the two symbols of social progress and the preferred source of legitimacy of the "new state" (Camau et al., 1990). State action to protect the health of the population was not just meant to enhance human productivity. From Syria to Saudi Arabia, health was gradually considered as a right that must be guaranteed by the state. Undoubtedly, the discourse justifying health policies and their implementation varied in different countries, but ultimately, the logic remained the same. The Egyptian constitution of 1952 guarantees free access to health services for all, while the Statute of the Ba'th Party maintains that "the state must create medical institutions capable of meeting the needs of all citizens and guarantee them free heath care" (Ba'th 1993). In 1956, President Bourguiba of Tunisia declared: "The world needs to know that the government is determined to make every effort to serve the people, and cannot tolerate that some compatriots are left without care"; he added that he was ready to enroll doctors by force if necessary (Camau, 1990: 180). Similarly, and surprisingly, such states whose political choices seemed radically opposed, drawing their legitimacy from their adherence to traditions rather than from their claim to progress, development and

modernity, also based their health policies on similar concepts. Saudi Arabia proclaims that "the state has the duty to provide free medical care to all citizens, as well as to pilgrims." The Jordanian Royal Medical Systems provides free health care to an increasing proportion of the population (Longuenesse 1992).

Broadly speaking, health was part of a dynamic package that was meant to push the society upward, creating a process of major social mobility through the development of the governmental institutions and public services, including public sector employment, urbanization and education. However, the development of health services, embodying this vision, was only one factor in the process of improving population health.

b) Rapid improvements

Throughout the region, there were remarkable improvements in population health between 1950 and 1980. In 20 years between the early 1960s and early 1980s, Morocco under the reign of the Alawite dynasty emulated the achievements of socialist Algeria: In Morocco life expectancy at birth rose from 48 to 59 years while IMR decreased from 145 to 90, In Algeria, life expectary increased from 48 to 61 years, while the IMR decreased from 159 to 84. For the same period, improvements of health indicators in Egypt were slower; life expectancy rose by only 9 years (47 to 56 years) and IMR decreased from 179 to 108/1000. Comparison between socialist-oriented Syria and oil-rich Saudi Arabia shows more impressive improvement in the latter. The causes of such changes are complex, and can be as much related to availability of resources and other indirect factors such as urbanization and development of media and communication as to sanitation measures and health policies.

c) State responsibility towards the people

The idea of the responsibility of the nation state for the development of the health sector and health services accessible to all is closely linked to the importance of medicine in the reform and modernization projects. This was true before, during and after the colonial era. It was reflected in Egyptian hospitals as early as 1925 with the establishment of free outpatient consultations. In Iraq, all medical students benefitted from scholarships and were offered employment in the public service after graduation. However, it was the revolutions that led to the implementation of proactive policies of health coverage for the whole population in Egypt, Syria and Iraq.

The development of a national health system and the extension of free health care to all led to a conflict between social health insurance schemes, financed by fees from labor income, and free medical care previously reserved for the poor, and which was eventually withdrawn in Algeria, Egypt and Syria. The same policies were enacted in Tunisia and later in Algeria. In some countries, medical insurance tied to employment was meant to strengthen the workforce for development goals. In Algeria, financing of all health services by a social security system inherited from colonial times led in the 1980s to a phenomenal budget deficit (Kaddar 1995).

The state's ambitious policies of expanding public health services to all regions and all segments of the population led physicians to find themselves subject to measures that undermined their independent practice of medicine, putting them at odds with the public sector. Physicians were forced to provide a few years of service in rural areas after graduation

in Syria and Egypt⁵ (Chiffoleau 1997, Boukhaima 2005), or to work full-time as employees of the public sector in Tunisia. Professionals resisted these constraints; for example in Tunisia during the 1980s, there was a decline in the number of registered doctors to such an extent that the government had to put an end to the requirement of full time employment in the public sector (Camau, 1990: 184). Except for Algeria, no country fully banned private medical practice; nevertheless the private practice in Tunisia, Syria or Egypt, remained limited to solo practice, sometimes coupled with a job in the public sector. The only exception was Lebanon where an extremely profitable private hospital sector developed early in the major cities, in parallel with the public system, aimed at serving rural districts and indigent population.

Oil revenues enabled oil-producing countries to offer free health care services to all their citizens, as early as the 1950s in Kuwait, and the 1960s or 1970s elsewhere. Progress was particularly rapid after the oil embargo of the 1973 war, owing to rising oil revenues and partial or total nationalization of oil companies. The generosity of the state also extended to housing, through heavy home subsidies, and other public services. The social logic behind these social policies was patrimonial: the governed are personally allegiant to the governor. This logic is quite different than the socialistic modernization model illustrated by the Tunisia of Bourguiba, the Algeria of Boumediene, the Egypt of Nasser or the Ba'thist Syria. Jordan offers a mixed health care model partially comparable to that of countries in the Arabian Peninsula. The rentier character of its economy, thanks to British and later American subsidies, allowed the financing of health coverage for the great majority of the population through two institutions: First, through the Royal Medical Services (RMS). This was established in 1963 and initially reserved for military and security officials and intelligence services and their dependents. In the 1980s about one third of Jordanians were eligible for RMS coverage through symbolic annual fees; Second, through the medical insurance body covering state servants, allowing them to get free health care in governmental hospitals. In Egypt and Syria too, military hospitals and health services endowed with sophisticated equipment were reserved for military personnel and their dependents. However, the net political impact of such policies, aiming at improving living conditions and at developing public services, may have been the suffocation of political liberties and hindrance of independent political expression, by transforming the relationship of citizens to the state to a pure allegiance to political leaders (Heydeman 2004).

In summary, despite apparently contradictory political rhetoric and ideological references, the combination of authoritarianism and patrimonialism is common to most social schemes in the Arab countries, and is translated into broadly comparable health policies.

5. Neo-liberal shifts and public health issues

In the years after independence, urbanization, education, improvement of living conditions have contributed to increased life expectancy, lower infant mortality, and decline of pandemics and epidemics once common in many Arab areas. But from the years 1970-1980, continued improvement in living standards and new government policies led to increasing social inequities and a profound transformation of the practices, expectations, and thus demands for health care. Withdrawal of socialist policies and return to economic liberalism gradually happened starting in the 1970s, accompanied by the entry of new local and global actors. Changes occurred over two periods: in the 1970s with the increase of oil prices and

⁵ Physicians to this day are not allowed to practice in cities except after serving two years after graduation in rural areas unless they had acquired a medical specialty.

the acceleration of migration and in the 1990s with the worsening of external debt, implementation of structural adjustment reforms, explosion of social inequities, and the toll of war and forced exile, in such countries as Sudan, Palestine and Iraq. During these periods, health policies and on-the-ground developments led to concomitant and opposing trends: governmental efforts to promote community health and the development of lucrative private medical services for the well-off. While in the 1970s Arab states still had resources to invest in social services and health, since the 1990s they were increasingly restricted by budget cuts and pressure from international financial institutions. Reform of social protection systems and health insurance was on the agenda in most Arab countries, as in the rest of the world. Indeed, neo-liberal reforms enforced by the World Bank have been salient in many Arab countries, bringing a wider role for the private sector and changing the meaning and responsibilities of the state in health service provision.

a) The increase in demand and the deepening of inequalities

The exponential income growth generated by the oil boom after 1973 disrupted the economic and social equilibrium of the Arab region. The emerging markets in the Arab Peninsula, Iraq and Libya attracted hundreds of thousands of workers from Egypt, Lebanon, Syria, Jordan, Yemen and Tunisia. Home remittances sharply increased family income but caused serious discrepancies in the labor market. This led to widening social gaps and promoting new patterns of consumption. While oil revenues benefited the states, directly or indirectly, allowing new social investment programs and delaying the crisis resulting from the multiple failures begotten by bureaucratized economies, they concurrently promoted conspicuous consumption and created new health demands.

Increasing governmental investments and expenditures in the health sector went hand in hand with the growth of private services, including for-profit hospitals targeting well-off clients. Meanwhile, economic liberalization was underway in many countries. International agencies and organizations (World Bank, WHO or NGOs) and local actors including the private sector and NGOs started to have a greater impact on health policies (see below).

By the end of the 1970s, while being pressured by a growing demand for services, the public sector suffered universally from limited resources, neglect and apathy by disenchanted health professionals who experienced a relative decline in wages due to inflation caused by the influx of migration income. Camau observed a paradox in Tunisia in the 1980s: improved access to health services due to the development of the public sector, whose services were free or at minimal costs, stimulated further demand for private services inversely proportional to the deterioration of the public sector. There was widespread perception that free public health care was medicine for the poor; consequently the new urban middle class shifted to consuming private medical care assumed to be of better quality. The free nature of services became illusory with public physicians, and there was a common practice of redirecting patients to private offices and soliciting bribes to queue-jump for surgery or to ensure a better treatment (Camau 1990; Boukhaima 2005).

In Tunisia, a 1980s survey showed a growing distortion between health care supply and demand and increased inequality in access to health services leading Camau to argue that the earlier improvement in living standards was followed by unequal development, worsening social inequalities, and cultural discontinuities (Camau et al 1990). Faced with growing and heterogeneous demands, the state disengaged, established a new division of labor between the public and the private sectors, privatized some public services and attempted to compensate

through assistance programs for the poor. The 1980s witnessed a clear differentiation of the medical profession, with a larger base of generalists and 'front-line health care' provided by a new generation of young physicians employed in the rural, poor urban and community facilities and settings while established and Western trained physicians dominated more lucrative posts.

As is often the case, Egypt demonstrates a particularly striking contrast between the impressive quantitative improvements of the 1950s and 1960s and the appalling deterioration of the health system later on. The influx of students in the provincially-based, under-equipped medical schools was associated with a dramatic decline in quality of education. The entry into the labor market of young physicians with little hands-on training and experience affected adversely the quality of health care (Chiffoleau 1997: 254-256) The hepatitis C contamination scandal uncovered in the 1990s is a terrible illustration of the dead-end health policies that were pursued. It was a dramatic and unforeseen result of the campaign against schisostomiasis launched in the 1960s and 1970s. Due to lack of resources and ignorance and neglect of underpaid and poorly trained health professionals, contaminated syringes were reused for vaccination causing a rapid spread of hepatitis C, whose prevalence in Egypt still remains unmatched worldwide (Radi 2007, Chiffoleau 2005: 221).

The increasing demand for, and consumption of, medical care would eventually contribute to the difficulties ahead resulting from the economic downturn in the 1980s, that resulted from falling oil prices after 1982.

b) Health sector reforms: Between community health and medicine for the rich

Most Arab countries were signatories to the 1978 Alma Ata declaration and the manifesto of "Health for All." This led to shy health care reform efforts to promote primary health care, public health and community medicine. In Egypt, this was attempted in 1982. But the professional elite resisted such reform and hospital physicians hampered the development of public health training, considered of little value. Conversely, the attempt to introduce a cap on numbers of medical students conflicted with the sacrosanct principle of the right for all to access higher education (Chiffoleau, 2005).

In the 1980s, international aid agencies played an important and increasing role in promoting specific and vertical public health programs, sometimes referred to as selective primary health care, thought to be of highest 'value' such as vaccination and campaigns against respiratory infections and diarrheal diseases (Chiffoleau, 2005: 221-222). But the success of this first phase of post-Alma Ata reforms was mixed at best. WHO was not the only international agency promoting community care. The World Bank, USAID, and other international assistance agencies had started to play a prominent role. However, as elsewhere, the new policies had to overcome the lack of trained staff in the public sector and the resistance of university and private hospitals.

A new package of reforms was launched in the 1990s, under the patronage of the World Bank, allied with other aid agencies (particularly USAID) and local actors. These reforms aimed at further liberalization of the health sector. Meanwhile, a non-profit private sector started to develop, in some countries like Egypt, represented by religious charitable institutions around clinics and hospitals attached to mosques and by NGOs. This development was favored by the increasing difficulty for young professionals from modest

backgrounds to settle, and by the rise in the cost of health services in the private sector (MOHP, El-Zanaty, 2003; Chiffoleau 2005; Adly 2007).

Syria underwent similar changes to Tunisia's but almost a decade later. In the 1980s, while public sector conditions were deteriorating, small lucrative hospitals proliferated. The medical profession underwent both differentiation and polarization. The growth of medical manpower and the difficulty for newcomers to enter the labor market, impelled the government to promulgate a decree in 1991 guaranteeing employment for newly graduated physicians (including an increasing number of women) in the public sector. At the same time, a paradoxical enthusiasm of young doctors to locate their practice in the countryside took place (Longuenesse 1995; Boukhaima 2005). To circumvent rising health care costs, the government started to rely on international assistance⁶ but also local NGOs, sometimes members of international aid networks. In this way, older health-promoting civic organizations, specialized in the struggle against specific diseases, have reemerged in the country (Boukhaima 2005).

In some Arab countries, health care has become a particularly lucrative industry. In Jordan and Lebanon 'investment hospitals' with sophisticated equipment have flourished, attracting wealthy clients from across the region. Medical tourism is also developing in Morocco and Tunisia where Europeans take advantage of less costly medical services. Cosmetic surgery, which benefits particularly from this cost differential, has grown rapidly⁷.

For other countries, health care remains synonymous with emergency medicine. In refugee camps, in war zones, and in the poor neighborhoods of large cities, the voices of those advocating the universal right to health often seem unrealistic. New health scourges are emerging owing to poverty, poor environmental conditions, and the failure of public services.

Conclusion

In this chapter, we tried to highlight the importance of public health in the construction of the modern state. In the 19th century, the Ottoman and Egyptian modernising projects did include public health programs. The colonization went on with these programs, but used the medicalization project as a tool for the control of the populations, and for the sake of their own economic and security interests. On the contrary, during the first decades of independence, health became a right that was guaranteed by the state and important progress were realized. But the crisis of the development model in the 1980s and the reduction of public expenditures resulted in the emergence of new international as well as local, but mainly private, actors, and in a context of increasing inequalities, international agencies and NGOs, including charitable and religious ones, played an increasing role.

Today, the goals of social justice and the right to health for all seem far off after the failure of national development policies and the subsequent withdrawal of the state from social programs. The new challenge facing health professionals is to create new social and political dynamics that could make these goals realistic again.

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⁶ A huge « health sector modernisation program » was launched in cooperation with the EU in 2004. See the website of the European Delegation in Syria :

http://www.delsyr.ec.europa.eu/en/eu_and_syria_new/european_union_syrian_cooperation_projects_lah.htm ⁷ During the sanction years in Iraq, it was reported that many rich Arabs and westerners would travel to Iraq to buy and have renal implantation surgeries (see the chapter on Irak).

Box 1 Mandatory Inoculations and the Cholera Epidemic in Iraq, 1923

On August 3rd 1923 three cases of cholera were reported amongst Indian workers living in a secluded camp of the British India Steam Navigation Company on Shat-el-Arab River below Basra. Within days, deaths spear outside the Basra municipal area leading the Health Directorate in Baghdad to cordon off affected areas and halt travel from Basrah to prevent the spread of infection by road or river, but these measures were too late. Within weeks, cholera spread to all provinces south of Baghdad. Sanitation and quarantine strategies were no match against the rapidity of circulation and mobility of both people and the bacterium. The rapid spread of the epidemic was a symptom of the developments in Iraq under the British mandate (1920-1932).

The mandate authorities carried out major urban development and transportation projects. As both a state-building and empire building project, the railway expanded between Basra and Baghdad along the Euphrates, with extensions to other areas. The railway played an important role in connecting different territories of the new Iraqi state, facilitating the mobility of goods and people, as well as, linking the territories with other parts of the empire. The British were most interested in securing the movement of military supplies, creating a network for the circulation of goods (especially grains) for export and within different regions of Iraq, and facilitating the movement of pilgrims to religious sites in Karbala, Najaf and Samara - a major source of economic income to the state, the Holy Cities and the British-controlled railway company. During the 1920's, both road and river traffic increased substantially. Iraq was on a rapid track towards commercial and economic development which Iraqi and British officials saw as crucial to the creation of the state. Ironically, the very geographic realities that seemed to promise a successful state were the nightmare that haunted the newly established Health Services.

In the past, local epidemic outbreaks were more easily contained through closing off infected areas from road and river routes. However with the rapid mobility of people and products and connections with the other parts of the British Empire, vectors and carriers of diseases were also being offered an express ride. Cholera, which was endemic in India, arrived in Iraq much faster through ships and newly developed pilgrim routes. In case of plague epidemics, which usually hit the major cities of Baghdad and Basra, it was train cars stocked with grain, which offered rats a comfortable ride between different cities and aided in the spread of the epidemic. According to one health report epidemics threatened the economic order of things in the new state:

"The solution to prevent the spread of infectious disease by complete closure of traffic routes was suitable to the Turkish administration, but can no longer be employed in a country which is rapidly developing and whose commerce, the motive power of its development, depends so vitally on the freedom of its traffic routes" (ref)

The need to preserve the economic vitality of the new state became pronounced during the cholera epidemic of 1923. By September of that year, anxiety was widespread among Health Services officials as this was the time when thousands of Shi'a pilgrims flock into the Holy City of Karbala. The thought of thousands of people moving from all over the country, as well as neighboring Iran, into the heart of the epidemic south of Iraq was apocalyptic. This was a true test for the Iraqi government and the British civil administration. The Iraqi government had decided earlier that year to delegate control of local dispensaries and hospitals to provincial authorities, despite objections from British officials and Ministry of

Interior. The epidemic forced the suspension of the decentralization process and put these dispensaries under the control of the central government and the central Health Directorate.

At first health authorities made a futile proposition to the government to forbid the Shi'a pilgrimage to Karbala that year. Officials were very reluctant to do so for fear of a backlash from the Shi'a community, especially with the recent memory of uprising and unrest in 1920, which had put the British political administration under scrutiny by the public, both in Iraq and Britain. As a compromise the Iraqi government gave the Directorate a *cart blanch* to "adopt any measure of prevention, short of stopping the pilgrimage". A massive door-to-door campaign was ordered to inoculate all the inhabitants of Karbala and Najaf. Inspections and inoculation posts were established on all bridges crossing the Euphrates at cities and towns of Twairij, Musayib and Najaf. Inoculated persons were given a certificate. Every traveler between Baghdad and the Holy Cities passing any of these stations was inoculated if he/she could not produce a certificate. About 90,000 people made the pilgrimage that year; only a small percentage escaped inoculation. Roughly 300,00 inoculations were performed by the health services.

At first authorities had to request the vaccine from India because of the need for such large quantities. They quickly realized that, with the extension of the epidemic, there would still be a shortage of vaccine. Steps were taken to begin manufacturing the cholera vaccine on a large scale in the small Central Laboratory at Baghdad. Strains were flown in from Cairo, and isolated locally. Vaccine production started at 2,000 doses a day and reached 10,000 to 12,000 doses a day within weeks. Along with the supply from India, this was enough to meet the needs.

The management of the cholera epidemic in Iraq in 1923 sheds an important light on the complex process of nation and state building under the mandate. For the first time a massive invasive medical intervention was introduced in epidemic management and pilgrimage, going beyond roadblocks, quarantine and isolation. With absence of census and accurate vital statistics, health cards, death rates and registrations became a technology, through which the new state created the conditions for its sustainability and legitimacy. The beginning of house-to-house inoculations exemplifies how, in addition to its health benefits, public health was a tool of the political project, closely associated with the management of population mobility and security, sustaining economic circulation, and legitimizing rapid urbanization.

Box 2 Lebanon: the development of public health over one and a half centuries

The first information on public health services in Lebanon dates from 1864, when the country adopted the "Mutassarifieh" regime for Mount Lebanon, imposed by European military interventions to end the inter-confessional disturbances of 1860-64⁸. In 1864, Baabda, then the capital, had a public health team comprising an Italian physician-in-chief assisted by two Lebanese physicians and another Italian physician. The team provided treatment to security forces and their dependents as well as to prisoners, inoculation campaigns against smallpox, distribution of quinine tablets against malaria, and treatment of venereal diseases. Medications were prepared in a central pharmacy. The team licensed the few pharmacists and midwives and signed health-related legal documents. Two small hospitals were built, financed through a tax on emigrants (Khoury 1949). Health care in Beirut was delegated to

⁸ Additional information on the health situation in Lebanon during this period has just been published by Khouri 2010: 28-44.

the municipality. In 1875, efforts were expanded to develop the water distribution system from Dbayeh (through a concession to the privately-owned Companie des Eaux).

During World War I, a smallpox epidemic ravaged the country threatening the Ottoman and German armies based in Lebanon. A new physician (Dr Husni Mohieddine) was assigned the task of organizing the health sector in 1916. This was done by designating 23 district health authorities covering Mount Lebanon, with one physician in charge of each district. These physicians combated smallpox, malaria, cholera and established public baths to disinfect clothes in order to stem the tide of typhus that, together with the famine, decimated large numbers of citizens.

Under the French mandate from 1918, a directorate of health was established within the Ministry of Interior, and a health council was appointed to formulate health legislation. In 1932, the health services for the capital (now Beirut) were delegated to the municipality and became for a long time since independent from the Ministry of Health, a situation that lasted well into Independence (Ministry of Health and Assistance, 1921-23).

This period witnessed the establishment of several hospitals, principally those related to Universities such as that of the American University of Beirut and the Hotel Dieu de France (Université Saint Joseph), as well as large community hospitals (Saint Georges, Makassed, Bhannes, Asfourieh) owned by philanthropic and religious groups. In addition, small private hospitals, patterned on the French model "cliniques" were established between 1920 and 1969 by private physicians returning from specialization training abroad (mainly from France at that time) (Ministry of Health and Assistance, 1925-26).

At Independence in 1943, the Ministry of Health, titled the Ministry of Health and Assistance (is 'af'), had three directorates: Technical Affairs, Quarantine, and Administration, reflecting the scope of its work. However the Lebanese Government stressed the need for educating its public servants in public health. Through fellowships provided by the Rockefeller Foundation, most health directors in Lebanon and Syria were sent to the Harvard School of Public Health to receive the Diploma of Public Health (DPH). These officials returned and initiated the development of the Ministry of Health. Hospitals were built in the main cities of the provinces (regional) and smaller facilities in the districts (qada) thus initiating a prototype referral system. These public hospitals were mainly tasked to serve the indigent population and treat patients suffering from then-prevalent infectious diseases. One could detect a plan for decentralization in the offing as qada physicians were also appointed. The Ministry of Health also developed water and sewage systems, activated spraying, eliminated ponds all in order to stem the tide of malaria, diarrhea and other communicable diseases.

In 1946, legislation was passed to establish the Order of Physicians and to initiate the licensure of health professionals through an exam, the colloquium. The formal decree establishing the Ministry of Health was legislated in 1961, and except for minor revisions remains the same today.

In the early 1960s, after the civil disturbances of 1958, and the election of a new President (President Fuad Chehab), major reforms were implemented across all sectors. In health affairs, the National Social Security Fund was established in 1964 (The Maternity and Illness branch was implemented in 1971); the Office of Social Development (now the Ministry of Social Affairs) which was developed in 1959, epitomizes the principles of Primary Health Care; the "Magnet Centers" were traced in 1964 to formulate the plans for social and

economic development. However the onset of the civil war in 1975 curtailed many of these reforms. (Kronfol and Mroueh, 1985)

References

- Adly E. (2007) À la polyclinique de l'imam al-Shâfi'î. Egypte Monde Arabe, Troisième série, 4 (Figures de la santé en Egypte), 147-177. Le Caire, Cedej.
- Arnold D. (1993) Colonizing the Body: State Medicine and Epidemic Disease in Nineteenth-Century India. Berkeley, CA: University of California Press.
- Augé M, Herzlich C. (1983) Le sens du mal, Anthropologie, histoire, sociologie de la maladie. Paris-Montreux: Archives Contemporaines.
- Ba'th M. (1993) A propos de la "question de santé. In: Curmi B, Chiffoleau S. (dir.), Médecins et protection sociale dans le monde arabe. Cahiers du Cermoc (p. 155-172)
- Becker HS, Hughes EC, Strauss AL. (1961) Boys in white. Chicago, IL: University of Chicago Press.
- Boltanski L. (1971) Les usages sociaux du corps. Annales, ESC, vol. 26, 205-233.
- Boukhaima S. (2005) Le système de santé syrien, des réformes nécessaires dans un environnement contraignant. In: Chiffoleau S. (dir.) (2005) Politiques de santé sous influence inernationale. Afrique, Moyen-Orient, Paris: Maisonneuve et Larose.
- Bourmaud P. (2008) Ya doktor, Devenir médecin et exercer son art en Terre Sainte. Une expérience du pluralisme médical dans l'empire ottoman finissant, Thèse d'histoire, Université de Provence, Aix en Provence.
- Camau M, Zaiem H, Bahri H. (1990) Etat de santé, Besoin médical et enjeux politiques en Tunisie. Paris: CNRS Editions.
- Chiffoleau S. (1997) Médecines et médecins en Egypte, Construction d'une identité professionnelle et projet médical, Lyon-Paris: Maison de l'Orient Méditerranéen-L'Harmattan.
- Chiffoleau S. (dir.) (2005) Politiques de santé sous influence internationale: Afrique, Moyen-Orient. Paris: Maisonneuve & Larose.
- Chiffoleau S. (2005) La réforme du système de santé égyptien: un nouveau type de processus politique entre logique internationale et enjeux nationaux. In: Chiffoleau S. (dir.), Politiques de santé sous influence internationale: Afrique, Moyen-Orient, Paris: Maisonneuve & Larose.
- Chiffoleau S. (2007) Entre initiation au jeu international, pouvoir colonial et mémoire nationale: le Conseil Sanitaire d'Alexandrie, 1865-1938. Egypte Monde Arabe, n°4 (Figures de la santé en Egypte), 55-74
- Chiffoleau S. (forthcoming) Genèse de la coopération sanitaire internationale. L'Europe et l'Orient face aux épidémies (1825-1938), Paris: CNRS.
- Chiffoleau S, Curmi B. (dir.) (1993) Médecins et protection sociale. Beyrouth-Paris: Cermoc-IRD, Cahiers du Cermoc
- Dewachi O. (2008) The professionalization of the Iraqi medical doctor in Britain: Medicine, Citizenship, Sovereignty and Empire. Ph.D. Dissertation. Cambridge, MA: Harvard University.
- Dodge B. (1958), The American University of Beirut, a brief history, Beirut, Khayat.
- Elshakry M. (forthcoming) Darwinian Conversions: Science and Religion in the Arab Eastern Mediterranean, 1850–1950.
- Foucault M., [1963], Naissance de la clinique, Paris : PUF. First English edition : (1973) The Birth of the Clinic: An Archaeology of Medical Perception. London; Tavistock Publications Freidson E. (1970) Profession of medicine, New-York: Harper and Row.
- Gallagher N. (1983) Medicine and Power in Tunisia, 1780-1900. Cambridge: Cambridge University Press.
- Gaudin JP. (1987) Savoirs, savoir-faire et mouvement de professionnalisation dans l'urbanisme au début du siècle. Sociologie du Travail, 39(2), 177–97

- Hanna A. (1996) Al-Muthaqqafûn fî Sûriya : al-Atibbâ', Damascus: Dar Dimashq Heydemann S. (2004) Toward a New Social Contract in the Middle East and North Africa, Arab Reform Bulletin
- Jagailloux S. (1986) La médicalisation de l'Egypte au 19^e siècle. Paris: Edition recherches sur les Civilisations.
- Kaddar M. (1990) Financement et dynamique des systèmes de santé au Maghreb. In: Kuhnke L. Lives at risk: public health in nineteenth-century Egypt. Cairo: Cairo University Press
- Khouri R. (2010), Histoire de la Medecine au Liban, J Med Liban 58 (1), 2010, p 28-44.
- Khoury E. (1949) Health in Lebanon. A conference dated 22 July 1949 at the "Cenacle Libanais.
- Kronfol N, Mroueh A. (1985) Health Care in Lebanon. Volume 1 (out of 3). Alexandria, Egypt: World Health Organization Press
- Longuenesse E. (coord.), 1992. Systèmes de protection sociale dans le monde arabe. Maghreb-Machrek, 138, 111-128
- Longuenesse E. (1993) Femmes médecins en pays arabes, l'exemple de la Syrie. Islam et santé, Sociologie santé, 9, 133-152
- Longuenesse E. (1995) Les médecins syriens, des médiateurs dans une société en crise. In: Longuenesse E. (dir.) Santé, médecine et société dans le monde arabe, Lyon-Paris: Maison de l'Orient Méditerranéen-L'Harmattan.
- Longuenesse E. (dir.) (1995) Santé médecine et société dans le monde arabe. Lyon-Paris: Maison de l'Orient Méditerranéen-L'Harmattan.
- Ministry of Health and Assistance. The Health Report for the Grand Liban 1921-23 (in French)
- The Health Report for the Grand Liban 1925-26.
- Ministry of Health and Population (MOHP), El-Zanaty and Associates, and ORC Macro Egypt Service Provision Assessment 2002. Cairo Egypt, Calverton MD: ORC Macro; 2003.
- Mitchell T. (2002) Rule of experts: Egypt, Techno-Politics, Modernity. Berkeley, CA: University of California Press.
- Moulin AM. (1995) Les instituts Pasteur de la Méditerranée arabe: une religion scientifique en pays d'islam. In: Longuenesse E. (dir.) Santé médecine et société dans le monde arabe, Lyon-Paris: Maison de l'Orient Méditerranéen-L'Harmattan
- Panzac D., (1982), « Endémies, épidémies et population en Égypte au XIXe siècle », GREPO, L'Égypte au XIXe siècle, Paris : Éditions du CNRS : 83-100.
- Panzac D. (1985) La peste dans l'Empire ottoman. 1700-1850, Louvain: Peeters.
- Radi S. (2007) L'hépathite C et les défaillances du système égyptien de santé publiques. Itinéraires thérapeutiques et solutions palliative. Egypte Monde Arabe, n°4, 2007
- Rivet D. (1995) Hygiénisme colonial et médicalisation de la société marocaine au temps du protectorat français: 1912-1956. In : Longuenesse E. (dir.), Santé médecine et société dans le monde arabe, Lyon-Paris : Maison de l'Orient Méditerranéen-L'Harmattan : 105-128.
- Rivet D. (2002) Le Maghreb à l'épreuve de la colonisation. Paris: Hachette.
- Suchman EA. (1963) Sociology and the field of public health. New York: Russel Sage Foundation
- Tabutin D, Schoumaker B. (2005) The demography of the Arab world and the Middle East from the 1950s to the 2000s. Population, 60, 5-6, 505-591+593-615
- Turin Y. (1971) Affrontements culturels dans l'Algérie coloniale: écoles, médecines, religion, 1830-1880, Alger: Entreprise Nationale du Livre.
- Watts S. (1999) Epidemics and History: Disease, Power and Imperialism. New Haven: Yale University Press
- Watts S. (2003) Disease and Medicine in World History. London: Rouhtledge

