

OVERVIEW AND CURRENT SITUATION OF OCCUPATIONAL MEDICINE IN EGYPT

(Review Article)

By

Zawilla N H

Department of Occupational and Environmental Medicine, Faculty of Medicine, Cairo University.

Abstract

Occupational Medicine (OM) is the area of preventive medicine that focuses on the relationships among the health of workers, the ability to perform work, the arrangements of work, and the physical, chemical, and social environments of the workplace. Practitioners in this field recognize that work and the environment in which work is performed can have favorable or adverse effects on the health of workers as well as on that of other populations.

In Egypt, the safety and health of workers has been a legal matter of concern since the beginning of the last century. Recently this concern has been increased especially with the inspiration and remit from the newly approved Constitution of Egypt. Article 18 of the Constitution sets a measurable target for health sector investment by stating that government health expenditure be increased to at least 3% of gross domestic product (GDP).

In Egypt occupational medicine continues to be one of medicine's smallest specialties facing challenges in terms of demand for consultants and trainees in occupational health and safety practice. The decline in the number of occupational physicians is surprising when occupational health is such an important aspect of health. Occupational injuries and illnesses are among the five leading causes of morbidity and mortality worldwide. Indeed, occupational physicians practice within the framework of a seriously flawed workers' compensation system. Enormous political and economic pressures from employers, insurers, and business organizations have made the workers' compensation system malfunction. Workers' compensation should be drastically revamped to restore its integrity. As physicians concerned with providing worker patients an independent,

objective medical service free from perverse economic incentives and employer pressures, we need to work to see that it happens.

Key words: Occupational Medicine (OM) , Egypt's labor laws, Occupational Health and safety (OHS) in Egypt, Future of OM, Occupational safety and Health (OSH) profile, Workers' compensation.

Part I: Overview

1-Historical Overview of Occupational Medicine in Egypt

1.1. Introduction

Throughout history workplace hazards and occupational medicine have been shaped by the forces that shape work itself, social evolution, changing modes of production, shifting economic powers, and demographic changes in the workforce. Hippocrates admonished his followers to observe the environment to understand the origins of illnesses in their patients. Agricola observed that miners in Joachimsthal frequently became short of breath and died prematurely (Brandt-Rauf and Brandt-Rauf, 1987). Bernardino Ramazzini, recognized worldwide as the father of occupational medicine, dated the birth of the discipline back to 1700 when *De Morbis Artificum Diatriba* [Diseases of Workers] was published in Modena, Italy (Franco, 2014). He discussed diseases of metal diggers, painters, intellectuals, gilders, midwives, glass

makers, potters, and sewer workers, noting that their afflictions came from inhaling noxious gases and dusts or from disorderly motions and improper postures of the body. He described problems of the eye among glassblowers, the symptoms of potters using lead glaze, and the neurologic conditions related to mercurialism. According to Ramazzini when a doctor visits a working class home, he should be content to sit on a three-legged stool if there isn't a gilded chair, and he should take time for his examination; and to the questions recommended by Hippocrates, he should add one more: What is your occupation? (Franco, 2014).

Sir Thomas Morison Legge in 1889 became the first Medical Inspector of Factories in England. He investigated lead poisoning and lead absorption in 1912, anthrax, glassblowers' cataract, industrial skin cancer, toxic jaundice, and poisoning by phosphorus, arsenic, and mercury. (Gochfeld, 2005).

1.2. Occupational medicine in ancient Egypt

The origins of the recorded history of occupational medicine are usually dated to the time of Hippocrates (c 460 BCE-c 370 BCE). Before Hippocrates in the history of occupational medicine, reference is sometimes made to the fact that the study of the diseases of occupations is as old as man and his work (Middendorp et al, 2010). The transition in the history of occupational medicine from prehistory to the recorded history of Hippocrates, however, passes over a body of writing with acknowledged relevance to the general history of medicine, the Egyptian Papyri. These writings have special relevance to the recorded history of occupational medicine as well. Nevertheless, the importance of these papyri to the history of occupational medicine has been largely unexplored. Of particular importance is the Edwin Smith papyrus. The extant copy of this papyrus was transcribed c 1700 BCE in the XVIII dynasty of the New Kingdom.

The papyrus has been attributed by some to the most famous of early Egyptian physicians, Imhotep (c2780

BCE). Imhotep was the chief vizier to the pharaoh Zoser, who was the first king of the Third Dynasty of the Old Kingdom. As a physician and an administrator concerned with a major construction project (the step pyramid), Imhotep would have been in a position not unfamiliar to some physicians of occupational medicine of today. It is known that the work crews on the pyramid were subject to injury moving and lifting the great stone blocks and that they received medical care. It is postulated that Imhotep took advantage of this position as administrator-engineer-physician to study systematically the injuries sustained by the workers during the construction of the pyramid, and that these observations formed the basis for the papyrus which later became the Edwin Smith document. Certainly, some cases in the Edwin Smith papyrus would be consistent with descriptions of occupational trauma to workers engaged in heavy construction. If this is correct it seems evident that Imhotep confronted many of the same occupational injuries that face modern industrial physicians (Ziskind and Bruno, 2007, and Brandt-Rauf and Brandt-Rauf, 1987).

Finally, the Edwin Smith Papyrus has completely reshaped our knowledge of the origin of occupational medicine. In addition to disproving Ancient Egypt's reliance on magical and folk medicine for medical treatment, the Edwin Smith Papyrus challenged the previously-accepted notion that medical advancement was thought to have begun with the Ancient Greek physician Hippocrates. The dating of the Edwin Smith Papyrus to ca. 1700 BCE with a potential for the original information to have appeared in ca. 3000 BCE means that Ancient Egypt likely possessed more advanced medical knowledge including occupational medicine than Hippocrates 1000s of years earlier. The contents of the Edwin Smith papyrus has completely restructured what we believe is the earliest evidence of modern medical practice and will likely continue to improved understanding of the distant past (Ziskind and Bruno, 2007).

1.2.1 The occupational physicians

In ancient Egypt the role of a medical person was carried out by "sounou" whose literal translation means "the one of those who are unwell". Among

these healers were those in charge of the medical care of workers. Depending on specific needs, administration assigned the medical people to mines and quarries, to large building sites, royal necropolises, temples and large farm lands. The famous Egyptologist, Franz Jonckheere, preferred to give them the name of "group doctors" rather than "institutional doctors" as they carried out their work within a community or a human group (Hall, 2013 and Bunson, 2002).

1.2.2 Mine and quarry doctors

The "sounou" ensured medical treatment of expedition personnel sent to exploit the minefields in regions far away from the kingdom. These personnel seem to have been particularly important. Thus, copper, turquoise and malachite mines were regularly exploited in the Sinai desert. A number of stele and graffiti were found in this area that had several doctors' names on them. Renefseneb is mentioned on the Sinai stele no. 85 (dating from the sixth year of Amenemhat III) as "the greatest of doctors" among more than 100 public officials (Ziskind and Bruno, 2007).

1.2.3 Farming medicine

The land was cultivated by “meretou”, who were serfs and could be exploited at will. They benefited from the Immunity Charter at the end of the IV dynasty, which improved their situation somewhat, but it nevertheless remained tenuous. From this period onwards, witnesses report that there were doctors treating the communities of peasants assigned to the large farmlands founded by the pharaoh. They were described using the term “gereget” (Bunson, 2002 and Allen, 2005).

1.2.4 Sanitary and social conditions of the workers:

It seemed that workers in ancient Egypt enjoyed a reasonable standard of living. They were appreciated by their rulers as compared to workers elsewhere in the ancient world. The next words were spoken by Ramses II to his workers:” I have insured your consumption supplies, thinking that you will work for me with grateful heart, I was always concerned about your needs. I know that you must be satisfied to enjoy doing this type of work. The granaries are full of wheat for you.....” Indeed, ancient Egyptians knew how

to keep the balance between physical and mental equilibrium of workers by attributing them days off. An interesting text shows us a temple employee who has been hit in his eye during his work and who was dismissed due to his physical incapacity. He was integrated again after pleading that the accident occurred during his work. In addition he demanded that the temple should pay all the expenses of his medical care. The papyrus Anastasi IV shows that workers had the right to have a pension in case of invalidity (Bunson, 2002 and Allen, 2005).

2-The Discipline of Occupational and Environmental Medicine

2.1. Definition of occupational health adopted by the Joint ILO/WHO Committee on Occupational Health (1950): Occupational health is a multidisciplinary branch of medicine that aims at the promotion and maintenance of the highest degree of physical, mental and social well-being of workers in all occupations; the prevention amongst workers of departures from health caused by their working conditions; the protection of workers in their employment from risks

resulting from factors adverse to health; the placing and maintenance of the worker in an occupational environment adapted to his physiological and psychological capabilities and; to summarize: the adaptation of work to man and of each man to his job (ILO, 1950).

Occupational medicine is the area of preventive medicine that focuses on the relationships among the health of workers, the ability to perform work, the arrangements of work, and the physical, chemical, and social environments of the workplace. Practitioners in this field recognize that work and the environment in which work is performed can have favorable or adverse effects on the health of workers as well as on that of other populations, that the nature or circumstances of work can be arranged to protect worker health, and that health and well-being in the workplace are promoted when workers' physical attributes or limitations are accommodated in job placement. OM specialists, who are often involved in direct patient care, identify and control work-related disease and injury and seek ways to eliminate and reduce hazards in

factories, mines, offices, and other work settings¹ (Rom and Markowitz, 2007).

Work places are specialized environments, capable of being closely controlled. Generally, it is the lack of control imposed by employers that is the cause of ill health because of exposure to hazardous materials and agents at work, and of injury caused by workplace accidents. Working life does not, however, begin and end at the factory gate or the revolving office door: many people walk, cycle, or drive to work—a journey that often constitutes the major hazard of the day. Others have to drive or travel by other means as part of their job, live away from home, be exposed to other food, other people, other parasites. Even work from home, increasing in some countries, can have its problems (Kate et al., 2001). Musculoskeletal disorders, stress, mental health at work, workplace surveys, fitness for work, sickness absence control issues, legal considerations, genetics and its

¹ Also refer to: Safe Work in the 21st Century: Education and Training Needs for the Next Decade>s Occupational Safety and Health Personnel. Institute of Medicine (US) Committee to Assess Training Needs for Occupational Safety and Health Personnel in the United States. Washington (DC): National Academies Press (US); 2000. PMID: 25077269

application to work and the effects of work on reproduction, industrial risk management and clinical toxicology are all issues covered by the discipline “occupational medicine” (Rom and Markowitz, 2007).

Consequently, occupational medicine practitioners deal with all these aspects of working life. A working population consists of people mainly between 15 and 60 years (disregarding for the moment the ongoing scandal that is child labor), who may be exposed for 8-12 hours a day to a relatively high concentration of toxic substances or agents, biological, physical or psychological. At least that population is likely to be reasonably fit—unlike those who cannot work because of illness or disabilities, the young, and the very old, who are more vulnerable and spend a lifetime exposed to many of the same agents in the general environment at lower concentration. This enters the realm of environmental medicine (Hooker, 2004).

2.2. Global employment trends at a glance

- The number of unemployed worldwide rose by 5 million in 2013

to reach almost 202 million, a 6 per cent unemployment rate.

- Unemployment has risen by about 28 million since the 2008 crisis.
- The number of jobseekers is expected to rise by more than 13 million by 2018.
- Some 74.5 million people in the 15 to 24 age group were unemployed in 2013, a 13.1 per cent youth unemployment rate.
- Around 839 million workers lived with their families on less than USD 2 in 2013.
- Some 375 million workers lived with their families on less than USD 1.25 a day in 2013.
- Some 470 million new jobs will be needed in the next fifteen years (ILO, 2014).²

2.3. An unacceptable situation

The human, social and economic costs of occupational accidents, injuries and diseases and major industrial disasters have long been cause for concern at all levels from the individual

² Source: Trends ILO Global Employment 2014. www.ilo.org/get2014

workplace to the national and international. Measures and strategies designed to prevent, control, reduce or eliminate occupational hazards and risks have been developed and applied continuously over the years to keep pace with technological and economic changes. Yet, despite continuous but slow improvements, occupational accidents and diseases are still too frequent and their cost in terms of human suffering and economic burden continues to be significant (Alli, 2008).

- Every 15 seconds, a worker dies from a work-related accident or disease. Every 15 seconds, 160 workers have a work-related accident. The overall annual rate of occupational accidents, fatal and non-fatal, is estimated at 270 million
- Workplaces claim more than 2.3 million deaths per year, out of which 350,000 are fatal accidents and close to 2 million are work-related diseases, the highest proportions of these deaths being caused by work-related cancers, circulatory and cerebrovascular diseases, and some communicable diseases.
- 313 million accidents occur on the job annually; many of these resulting in extended absences from work.
- overall occupational accident and disease rates are slowly declining in most industrialized countries but are level or increasing in developing and industrializing countries
- The human cost of this daily adversity is vast and the economic burden of poor occupational safety and health practices is estimated at 4 per cent of global Gross Domestic Product each year (Alli, 2008).

The safety and health conditions at work are very different between countries, economic sectors and social groups. Deaths and injuries take a particularly heavy toll in developing countries, where a large part of the population is engaged in hazardous activities, such as agriculture, fishing and mining. Throughout the world, the poorest and least protected - often women, children and migrants - are among the most affected (ILO, 2014).

2.4. Occupational Medicine services

Based on the standards, principles

and approaches embodied in the ILO Occupational Health Services Convention, 1985 (No. 161) and its accompanying Recommendation (No. 171); ILO Occupational Safety and Health Convention, 1981 (No. 155) and its accompanying Recommendation (No. 164); and the Working Document of the Twelfth Session of the Joint ILO/WHO Committee on Occupational Health, 5-7 April 1995, Occupational Health Services are defined as services entrusted with essentially preventive functions and responsible for advising the employer, the workers and their representatives in the undertaking on the requirements for establishing and maintaining a safe and healthy working environment which will facilitate optimal physical and mental health in relation to work and the adaptation of work to the capabilities of workers in the light of their state of physical and mental health. Provision of occupational health services means carrying out activities in the workplace with the aim of protecting and promoting workers' safety, health and well-being, as well as improving working conditions and the working environment. These services are provided by occupational health

professionals functioning individually or as part of special service units of the enterprise or of external services (ILO, 1981, 1985a&b, 2006 and 2013).

Many countries voluntarily use the convention and the accompanying recommendation (no 171) as models for establishing requirements for the organization and functioning of occupational health services. Initially, the provision of occupational health services has been carried out mainly by teams of specialists (occupational health professionals) set up under specialized institutional arrangements mostly at large enterprises in the organized labor sector. Later on, other models of occupational health services have been developed in an attempt to meet varying needs of a large informal sector in which the model of "in-plant health services" was not feasible. Occupational medicine, occupational hygiene and occupational safety may be practiced separately or together within the same occupational health service. The occupational health service may be a single integrated entity or a composite of different occupational health and safety units unified by a common concern for workers' health and well-being (Fedotov, 2005).

2.5. Skills of the Occupational Medicine Physician

Occupational medicine physicians will have a strong clinical emphasis and will be familiar with issues of worker placement and accommodation as well as other competencies on the following list (Upfal and Shaw, 1998).

- **Clinical—General.** Physicians have the clinical knowledge and skills required to provide high-quality, cost effective medical care in diagnosing and treating occupational and environmental injuries and illnesses. The physician provides care with an understanding of the workplace, work exposures, and relevant statutes, such as workers' compensation laws.
- **Clinical—Preventive.** Physicians have the knowledge and skills required to define, develop, and administer programs to improve the health of employee and dependent populations, as well as counsel employees about their lifestyle risk factors and clinical preventive needs.
- **Disability Management and Work Fitness.** Physicians have the clinical and administrative knowledge and skills required to assist employees and employers to ensure that recovery from illness or injury is as rapid and as complete as possible. With broad knowledge of the workplace, administrative requirements governing job placement, and the legal, rehabilitative, and financial aspects of disability.
- **Hazard Recognition, Evaluation, and Control.** The physician collaborates with other professionals, such as industrial hygienists, safety engineers, ergonomists, and occupational health nurses, on such efforts.
- **Regulations and Government Agencies.** Physicians have the knowledge and skills required to help bring organizations into compliance with state and regulations relating to OSHA as well as general public health laws.
- **Management and Administration.** Physicians have the administrative and management knowledge and skills

Part 2: Current Situation of Occupational Medicine in Egypt

Introduction

In Egypt, the safety and health of workers has been a legal matter of concern since the beginning of the last century. Recently this concern has been increased especially with the inspiration and remit from the newly approved Constitution of Egypt. The Constitution explicitly places health high on the national agenda. Article 18 of the Constitution underlines the importance of the right to health and of access to integrated quality health services. The article sets a measurable target for health sector investment by stating that government health expenditure be increased to at least 3% of gross domestic product (GDP). Indeed the State is committed to establishing a comprehensive health insurance system covering all diseases for all Egyptians. Moreover Article (42) states that workers shall have a share in the management and profits of enterprises according to the law, and shall develop production and implement the respective plans of their productive units. Addressing health goes far beyond

the health sector itself. Many articles in the new Constitution address the role of other sectors in promoting the health of the population. A multisectoral approach is acknowledged as a key driver in the process of national health policy development (<http://www.sis.gov.eg/Newvr/Dustor-en001.pdf>).

The earliest legislation pertaining to occupational health in Egypt dates back to July 1909. It concerned the employment of children in cotton ginning factories. A number of Acts including sections dealing with health and welfare of factory workers followed. Employment of workers, employment conditions and agencies competent with occupational safety and health as well as penalty clauses were covered by Act No. 91, the first comprehensive [Labor Law], adopted on 5 April 1959.

Regulations developed and expanded gradually in order to cover all hazards and economic sectors. It should be noted that the Egyptian legislation relating to OSH was extensively updated in July 2003, as described in the legislative framework section. It now covers a great part of the requirements and provisions entailed in major ILO

Conventions related to occupational safety and health.

1. General Data

1.1 Basic Demographic Data, labor force and work injuries³: Population censuses indicate that Egypt's population doubled for the first time during the fifty year from 1897 till 1947

from 9.7 million people to 19 million people, and for the second time during the thirty years from 1947 till 1976. The third doubling of population in Egypt took place from the year 1976 from 36.6 million people to 72.82 million people (inside the Republic) according to the final results of 2006 population census.

Table 1: Total Population (in thousands)

Total	Females	Males	Years
85 783	41 995	43 788	*2014
83 667	40 940	42 727	2013
81 567	39 893	41 674	2012
79 618	38 913	40 705	2011
77 840	38 045	39 795	2010

Currently 34% of the population is under 15 years and 5.8% is aged over 65 years. It is projected that by 2025 this will change to 36% and 6.4% respectively.⁴ Meanwhile, the country's dependency ratio (calculated as the ratio between the percentage of the population aged under 15 and over 65 years and the percentage aged

between 15 and 65 years) now stands at 62%, and is projected to go up to 67% in 2025. This means that over the next decade people of working age will continue to largely outnumber those of non-working age, something that is generally considered to be a positive factor for economic growth (Bloom et al., 2003). However, should the labor market fail to develop significantly or the informal economy fail to formalize,

³ Demographic, labor force and work injuries Data were adopted from: The Central Agency for Public Mobilization and Statistics (CAPMAS), statistical year book 2014, The General Authority for Health Insurance, Egypt publications, <http://www.capmas.gov.eg/pdf/Electronic%20Static%20Book2014//page/INTERFACE/home.htm>

⁴ Egypt's Constitution 2014, (<http://www.sis.gov.eg/Newvtr/Dustor-en001.pdf>).

the projected population growth will result in an increasing number of unemployed and/or people with jobs in the informal sector with no entitlement to coverage under a formal social security mechanism.

The gender inequality index, calculated by UNDP, puts Egypt in 112th place (2012) of the 186 countries included in the ranking; this is down from 108th place in 2010. Illiteracy is 12.8% higher for urban women than for men and 26.5% higher for women in rural areas. The female labor participation rate is at 23%, which matches the regional average but is well below the average for medium human development countries at 51%. Egypt is a lower middle-income country with a large informal economy; self-employment accounts for about 40% of the labor force. Poverty defined as people living on less than US\$1 per

day, has diminished in Egypt in the last ten years, although the 2010 levels are actually slightly higher than the levels in mid- to end-2000s. However, poverty, when it is defined by the national poverty line based on the cost of satisfying basic needs, has risen steadily, driven notably by food price inflation (UNDP, 2010).

Labor Force: All individuals which their ages range are from 15 years old (the minimum age of employment according to the Egyptian labor law) to 65 years old (the retirement age) whether they are actually taking part by their physical or mental efforts in an activity related to the production of commodities and services (Employed). They are 15 years or more or the individuals who are able to perform such activity, desire and seeking for work but can't find it (unemployed).

Table 2: Employed persons in public and public business sector by industrial activity and sex (2012, 2013), unit: number

Activity Sectors	*2013				2012			
	%	جملة Total	الذكور Females	الإناث Males	%	جملة Total	الذكور Females	الإناث Males
	1 Total	100	870 715	108 374	762 341	100	844 814	107 394
2 Agriculture, Public Work & Water Resources	2.8	24 475	5 750	18 725	3.0	25 596	6 052	19 544
3 Industry, Petroleum & Mineral Abundance	25.5	221 746	22 133	199 613	26.3	222 187	21 864	200 323
4 Electricity	16.2	140 832	17 111	123 721	15.4	129 683	16 172	113 511
5 Transport-ation&Trips	6.0	52 415	4 219	48 196	6.3	53 378	4 294	49 084
6 Supply & Internal trade	4.1	35 699	6 373	29 326	4.2	35 693	6 506	29 187
7 Money & Economy	7.3	63 204	14 031	49 173	7.5	63 050	13 673	49 377
8 Housing & Construction	25.5	222 067	17 063	205 004	24.3	205 677	17 037	188 640
9 Health, Social & Religious services	3.3	28 706	10 388	18 318	3.4	28 750	10 698	18 052
10 Culture & Media	0.3	2 389	424	1 965	0.3	2 260	385	1 875
11 Tourism & Civil Aviation	5.9	50 940	8 178	42 762	6.0	50 348	8 089	42 259
12 Defence, Security & Justice	3.2	28 242	2 704	25 538	3.3	28 192	2 624	25 568

Work Injuries Statistics: This statistic provides data on work injuries in the public, public business sector establishments and private sector, (establishments that contain fifty workers and more), the data is collected on a special form of a calendar year from the records & documents available to these establishments.

Table 3: Work injuries classified by injury result, sex of injured worker and working sector

E ffect of injury	Sector ⁽¹⁾	2012			2011			2010		
		الذكور Total	الإناث Females	الذكور Males	الذكور Total	الإناث Females	الذكور Males	الذكور Total	الإناث Females	الذكور Males
Total	Government	2 932	609	2 323	2 059	559	1 500	2 038	704	1 334
	Public	12 287	1004	11 283	12 045	992	11 053	13 626	1 025	12 601
	Private	2 735	235	2 500	3 078	264	2 814	2 831	255	2 576
	Total	17 954	1 848	16 106	17 182	1 815	15 367	18 495	1 984	16 511
Restoration	Government	2 283	437	1 846	1 564	425	1 139	1 587	568	1 019
	Public	10 917	926	9 991	10 806	895	9 911	12 286	940	11 346
	Private	2 393	213	2 180	2 705	249	2 456	2 528	239	2 289
	Total	15 593	1 576	14 017	15 075	1 569	13 506	16 401	1 747	14 654
Full Deficit	Government	10	6	4	27	7	20	12	2	10
	Public	5	0	5	26	1	25	11	3	8
	Private	9	0	9	5	1	4	2	0	2
	Total	24	6	18	58	9	49	25	5	20
Partial Deficit	Government	208	53	155	142	44	98	154	51	103
	Public	353	15	338	283	20	263	353	16	337
	Private	77	2	75	94	6	88	98	1	97
	Total	638	70	568	519	70	449	605	68	537
Death	Government	57	6	51	66	7	59	56	6	50
	Public	129	1	128	120	4	116	117	2	115
	Private	22	1	21	37	0	37	27	3	24
	Total	208	8	200	223	11	212	200	11	189
Under treatment	Government	374	107	267	260	76	184	229	77	152
	Public	333	62	271	310	72	238	359	64	295
	Private	234	19	215	237	8	229	176	12	164
	Total	1491	188	1303	1307	156	1 151	1 264	153	1 111

Table 4: Positive cases for occupational diseases as detected in the period from 1-1-2013 till 31-12 -2013)

Occupational disease	exposed	positive	Percent
(C&B) Hepatitis	43896	141	0.3%
loss hearing induced Noise	63879	76	0.12%
dermatitis Occupational	40097	106	0.26%
Silicosis	26480	88	0.33%
cataract Occupational	1261	6	0.48%
Asbestosis	3990	3	0.08%
Tuberculosis	266	1	0.38
Brucella	190	1	0.53%
imbalance Hormonal	168	5	3.0%
Typhoid	1198	1	0.083%
MRSA	1198	1	0.08%

2. Legislative Framework

The first comprehensive Labor Law, numbered 91, issued on 5 April 1959 replaced: Act No. 48 (1933) governing the employment of juvenile workers of both sexes in industry; Act No. 80 (1933) concerning the employment of women in industry; Act No 147 (1935) fixing the number of hours of work in certain industries; Act No. 317 (1952) on individual contracts of employment; Act

No. 46 (1958) organizing work in mines and quarries; and Act No.14 (1959) governing vocational rehabilitation and employment of disabled persons (Emara et al. 1991).

2.1. References to OSH requirements in the Egyptian Constitution

Although there is no direct reference to OSH requirements in the country's Constitution (2014), reference is made to gender equality in political, social,

cultural and economic fields (article 11) and to everybody's right to work. The Constitution forbids forced labor (article 12), protects workers' rights and strive to build balanced work relationships between both parties to the production process. The state shall ensure means for collective negotiations, protect workers against work risks, guarantees the fulfillment of the requirements of security, safety and occupational health, and prohibits unfair dismissal (article 13).⁵

Major Occupational Safety and Health Laws and Regulations

2.2. Law No. 12 (2003), Book V: Occupational safety and health (OSH) and Assurance of the adequacy of the Working Environment⁶

Law 12 (2003) is the Code. Its revised version issued and published in the Official Gazette No. 14 (rep.) on 7th April 2003, entered into force on 7th July 2003. Law 12 (2003) replaced Law 137 (1981) as well as ministerial

⁵ Egypt's Constitution 2014, (<http://www.sis.gov.eg/Newvtr/Dustor-en001.pdf>).

⁶ Law No. 12 (2003), Book V: Occupational safety and health <http://www.egypt.gov.eg/english/laws/labour/default.aspx>

decrees No. 33/1982, 119/1982, 105/1987, 142/1988, 145/1988 and 10/1991. The objective of Law 12/ 2003 is to organize employment relations, clarify the duties and rights of the parties to the employment agreement, and to ensure safety and health at the workplace. It devotes a specific section (Book V) to occupational safety and health and assurance of the adequacy of the working environment.

Objective and Scope of Book V of Law 12/ 2003 on OSH:

The objective of Book V is to ensure safety and health of workers in all areas of work and production. It provides the necessary elements for such an objective to be met at the enterprise level and at the national level in particular in relation to the implementation of its requirements. These elements mainly consist in:

- Requirements for the selection and establishment of sites.
- Responsibilities of employers to ensure safety and health at workplaces.
- Establishment of the administrative authority to enforce its provision (OSH inspection)

- Organization of OSH at the enterprise level (OSH Committees)
- Obligation of employers to report accidents at work and provide related statistics
- Setting-up of consultative bodies at national and provincial levels (governorates)

Scope of Book V: The safety and health provisions of the law apply to all establishments in the private and public sectors, civilian government units, local (municipal) government services and public authorities (article 203). It requires prior authorization and licensing to set up and operate an industrial, commercial or other establishment (art. 204 - 215) defined as a business or undertaking in the public or private sector (art. 203). Nevertheless, it does not apply to household servants and family members who are direct dependents of the employer.

Book V of Law 12/ 2003 applies to all branches of industry, including the construction industry, commercial establishments, and agriculture. It applies to all working sites and establishments, once authorized, whatever the number of workers

employed. Specific provisions apply to establishments with more than 15 to more than 50 workers.

OSH in mining and quarrying activities is regulated by law No. 27 (1981) and chemicals as well as major hazard installations are partly covered by Law No. 12/ 2003, decree No. 211 (2003) and also by Law No. 4 (1994) on the protection of the environment with its executive regulations.

2.2.1 Executive Ministerial decrees

In addition to Law 12/ 2003, protection of workers against hazardous processes, machinery and equipment, hazardous chemical, physical and biological agents are regulated by 3 major decrees, No. 126, No. 211 and No. 134.

2.3. Compensation: Health Insurance Legislation & Organizations: Law 79 (1975), the Social (and Health) Insurance Law as amended by Law No. 25 (1977) is implemented by the Ministry of Insurance and Social Affairs.⁷

⁷ The Social (and Health) Insurance Law as amended by Law No. 25 (1977) <http://old.egyoil.com/docs/1284669899.pdf>

**Compensation Mechanism:
decision by the Health Insurance
Organization (HIO):**

Article 5 indicates that for applying the provisions of this law, some definitions are to be applied:

Work injury: Any of the vocational diseases indicated in schedule attached, or any injury by an accident occurring during the performance of work or resulting from it. The injury resulting from exertion or exhaustion from work shall be considered a work injury where it fulfills the conditions and rules to be specified by a decree of the minister of insurance in accord with minister of health. Also, shall be considered as a work injury, any accident which happens to the insured during the time of his going to perform his work, and during his return from it, provided that going to and returning from his work will be without stoppage, or falling behind, or deviation from the normal route.

Workers can apply personally or through the facility/enterprise physician to the nearest Health Insurance Organization Centre/office to claim for compensation on their occupational

injury/illness. The HIO center/office will then investigate the case; analyze its relation to occupation; decide and define the rating for physical and/or functional impairment; and determine the degree of disability giving right to compensation according to table (2) appended to Law 79 of 1975. The HIO also starts treatment of such health impairments.

In case of death due to a work-related accident (at work + commuting) the compensation provided to the victim's family is equal to his/her salary/wages for 6 000 days.

Decisions regarding diagnosis of an occupational disease or injury and matters related to compensation of benefits can be appealed to a special committee of referees, the decisions of which are final but can be brought to the general court. The committee membership and procedures are organized according to Ministerial Decree 215 (1997).

In addition to evaluation of disability, the HIO is also responsible, according to Law 79/ 1975 and Law 12/ 2003 (art. 216), to carry out both pre-placement and periodic medical examinations.

The system is administered by two separate schemes:

- One for civil servants administered by the National Organization for Social Insurance (NOSI) Government Sector Fund, under the Ministry of Insurance and Social Affairs, and
- The other relates to workers in public and private enterprises, the self-employed, Egyptian workers abroad and temporary workers. This Fund is administered by the “General Organization for Social Insurance” also under the Ministry of Insurance and Social Affairs.

“The General Organization for Social Insurance” will pay for: (1) treatment; (2) rehabilitation; (3) compensation according to the disease/impairment at stake.

2.4 Protection of the Environment:

Several laws, executive regulations and decrees deal with the protection of Egypt’s environment. The most important are: Law No. 4 for 1994 on the Environment, Law No. 48 for 1982 on protection of the River Nile and water ways, Law No. 52/1981 on protection against smoking hazards,

Law No. 38/1967 on public cleanliness, Law No. 93/1962 on disposal of liquid wastes, Law No. 59/1960 on protection against ionizing radiation and Law No. 45/1949 regulates the use of loud speakers.

Law No. 4 / 1994⁸

Law No. 4 was promulgated on 27 Jan. 1994, published in the official gazette (No. 5 of 3 Feb. 1994) and entered into force on 4 Feb.1994. Its executive regulation (ER) was promulgated by the Prime Minister decree No. 338 (1995).

The objective of the Law is to protect and promote the environment.

The scope: of the law encompasses the protection of land, air and water environment from pollution, and sets controls for activities affecting them. The Law establishes the administrative structure necessary for its application and enforcement supervision. i.e. the Egyptian Environmental Affairs Agency (EEAA). EEAA is responsible for the formulation of the general policy and plans for the protection and promotion of the environment. Representatives

Protection of the Environment: Law No. 4 / 1994
<http://faolex.fao.org/docs/pdf/egy4984E.pdf>

of 6 Ministries, NGOs, employers and university representatives are members of its board.

3. OSH System: implementation means and tools (Abo El Ata and Nahmias Ms, 2005).

The institutional structures with OSH related activities and powers are mainly:

1. The Ministry of Manpower and Migration (MOMM),
2. National Institute for Occupational Safety and Health (NIOSH) NOSH-Egypt which has been organized according to the Presidential Decree No. reorganized by Presidential Decree No. 333 for the year 2003 is primarily responsible for the advancement of the level of safety and occupational health. It is a leading institute in OHS Research, Training, Consulting and Workplaces Services,
3. The Ministry of Health and Population (MOHP)
4. The Health Insurance Organization (HIO)
5. The Ministry of Insurance and Social Affairs with related organizations
6. The Ministry of Environment is also entrusted, according to Law No 4 with inspection duties related to the pollution of the environment by factories, and has therefore an indirect impact on the work place. The competent Administrative Agency Concerned with the Protection of the Water Environment: Any of the following agencies, each within its field of competence: A- the Environmental Affairs Agency (EEAA) B- the Department of Ports and Lighthouses. C- The Suez Canal Authority. D- Port Authorities in ARE. E- The General Egyptian Organization for the Protection of the Coast. F- Egyptian General Petroleum Corporation. (EGPC). G- General Department of Surface Water Police. H- Tourism Development Authority. I- Other agencies designated by a Prime Ministerial Decree.
7. The Ministry of Interior is in charge of fire protection licenses of enterprises (Civil defense Authority)
8. The Ministry of Industry, is the standardization institution

9. The Ministry of Construction, delivers planning permits and building specifications.

Enforcement of legislation within the enterprise is supervised by two types of inspectors:

*The Ministry of Manpower and Migration (MOMM) Inspectorate Division: *inspection related to employment conditions [labor Inspectorate] and *inspection related to OSH conditions [Safety Inspectorate]. Ministry of Environment Inspectors may also intervene at the workplace.*

4. Education and Training regarding Occupational medicine and related disciplines

4.1 University and college courses related to occupational and environmental medicine

The major institutions providing educational programs are:

Faculties (schools) of medicine, engineering and science at 18 governmental and 6 private universities. These are present in 14 Egyptian governorates (provinces).

High Institute of Public Health affiliated to Alexandria University.

Institute of Graduate Studies and Research, Alexandria University.

National Research Centre in Cairo affiliated to the Ministry of Higher Education and Scientific Researches.

Institute for Environmental Studies and Researches affiliated to Ain Shams University.

In these institutions, educational programs are directed into 2 main levels:

- Undergraduate studies, ending in Bachelor degrees.
- Postgraduate studies in order to obtain Master and Doctorate Degrees.

4.2 Postgraduate degrees may be obtained in the closely related disciplines of OSH:

Occupational and Environmental Medicine, Clinical Toxicology, Industrial health management, [Occupational and Environmental medicine Department, Faculty of medicine, Cairo University] Occupational safety [Institute for Industrial Safety, Worker's University], Occupational hygiene, Environmental (and occupational) epidemiology, [Alexandria], Industrial engineering, Industrial chemistry and Environmental studies [Cairo University].

However, these institutions have an educational capacity far above the current use of OSH & market needs. The majority of postgraduates are affiliated to other research institutions or academic faculties, and the minority become incorporated in the field industrial facilities where their knowledge becomes in use to the workers wellbeing and safety. Finally even with such diversities in the degrees offered there is lack in important needed specialties as industrial hygiene and safety officers, occupational health nurse and assistant staff, and occupational rehabilitation

4.3 Training Mechanism

In Egypt, legally required training on OSH at the enterprise level is organized by Labor Law No. 12/ 2003 and Decree No. 134 (2003). This training heavily relies on two main structures, one belonging to a workers' institution and the other one being a government agency. Legislation (Art. 227 of Law 12/ 2003) makes it mandatory for employers to provide suitable training for employees engaged in OSH services and committees, as well as those responsible for management and

production, in accordance with their levels of responsibility and within the nature of activities of the establishment.

Institutions conducting legally required training for OSH specialists: The Institute for Industrial Safety and The National Institute of Occupational Safety and Health (NIOSH): By Law, NIOSH

Conclusion:

In Egypt occupational medicine continues to be one of medicine's smallest specialties as regards number of occupational medicine professionals. The decline in the number of occupational physicians is surprising when occupational health is such an important aspect of public health. One possible explanation for the difficulties of the specialty to thrive is that occupational medicine has allowed itself to become subservient to business interests. Industry influence encroaches on intellectual, ethical, clinical, and academic freedom in occupational medicine.

A future vision for occupational medicine in Egypt is urgently needed, priorities and targets should be set

and put into a policy and procedures action plan for both the specialty and occupational health and safety system.

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