29 APRIL 2016

D 1.1 Report on Knowledge Gaps and needs

ESPrIT - Strengthening the Occupational Health Expertise and Scientific Capacity of Public Health Institution of Turkey

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The project leading to this report has received funding from the EU Horizon 2020 Research and Innovation Programme under agreement No 692188. This report reflects only the author's views. The Research Executive Agency under the power of the European Commission is not responsible for any use that may be made of the information it contains.

CONTENTS

List of abbreviations

CHC	Community Health Center
CASGEM	Training and Research Centre for Labour and Social Security
FERROSH	Facilitating Effective and Reliable Resources for Occupational Safety and Health in the Turkish metal sector
FP	Family Physician, see also GP
GP	General Physician (UK and international term for Family Physician)
ICD	International Classification of Diseases
ILO	International Labour Organisation
IPH	Institute of Public Health, medical faculty of Hacettepe University, School of Medicine
ISGIP	Project on Improvement of Occupational Health and Safety Conditions at Workplaces in Turkey
ISCO	International Standard Classification of Occupations
JOSHU	Joint Occupational Health and Safety Unit
MoH	Ministry of Health
MoLSS	Ministry of Labour and Social Security
MoU	Memorandum of Understanding
MSDs	Musculoskeletal Diseases / Disorders
NACE	Nomenclature statistique des activités économiques dans la Communauté Européenne. Classification of Economic Activities within the European Community
OD	Occupational Diseases
ODH	Occupational Diseases Hospital
OH	Occupational Health
OP	Occupational physician
OSH	Occupational Safety and Health
PH	Public Health
PHIT	Public Health Institution of Turkey
SMEs	Small and Medium size Enterprises
SSI	Social Security Institute (SGK in Turkish)
WHO	World Health Organisation
WRD	Work-related diseases/disorders

Glossary

Occupational Diseases

The term 'occupational diseases' may refer to two different meanings: (1) so called classical occupational diseases that are in general relatively monocausal related to exposure at work; in most countries this meaning is strictly related to those diseases that are included on the national list of compensable diseases (compensable occupational diseases; (2) often the term 'occupational diseases' refers to the continuum including not only the classical occupational diseases that are regarded as relatively monocausal related to work exposures, but also so called 'work-related diseases' that are regarded as multicausal related not only to work but also to conditions ouside work inclusive personal susceptibilities.

Work-Related Diseases

The term 'work-related diseases' is used for diseases caused by work that are regarded as potentially caused not only by causal factors at work but also by causal factors and conditions outside work inclusive personal susceptibilities. The majority of musculoskeletal and mental health diseases that are causally associated with work exposure are mostly regarded as 'work-reated diseases', but also COPD (lung disease) and a number of cancer diseases are regared as such, e.g. lung cancer caused by asbestos..

Workers' health surveillance

The ongoing systematic collection, analysis and interpretation of **health-related data** of workers, in order to prevent occupational & work-related diseases and work injuries. In ESPrIT the accent lies on the measurement and analysis of biological markers, health complaints, diseases and injuries. There is also a preference for a case-based approach so for the collection of data based on (ex) workers who are regarded as cases of an occupational or work-related disease. There is also attention for the adverse consequences of occupational and work-reated diseases such as work disability, job loss and economic consequences for the affected worker, and/or for the family, company or society. Health related data always have to be complemented with data from work exposure, to be able to assess if there is a case of occupational or work-related disease, or not. Workers' health and working environment surveillance have to be closely connected as both approaches or strategies are part of one general surveillance system.

Working environment surveillance

The ongoing systematic collection, analysis and interpretation of workplace-related data including the OSH culture and management system, hazards, risks, control systems, concrete demands and exposures, protective measures,education and behavior at the work floor. Workers' health and working environment surveillance have to be closely connected as both approaches or strategies are part of one general surveillance system.

Workplace

In this report a workplace can be a physical place where one worker is doing his or her tasks, or it can be the establishment of (a part of) an enterprise (company).

Introduction

Aim of the report

The aim of this report is to make an inventory of knowledge and skills gaps amongst PHIT staff in the field of (research with regard to) work-related health complaints and occupational and work-related diseases. This report is the first step to provide an overview of the needs with regard to scientific knowledge on the latest state of the art in occupational health and diseases, pros and cons of several registration and notification systems for occupational diseases, validated tools and instruments from outside Turkey that can be translated and adapted, academic skills to design, implement and publish research. The report will serve as an input for defining the learning objectives of WP 2 Scientific Capacity Building, WP3 ICD + Innovation and the research road map in WP 4 Scientific Excellence. It is meant to be a working document for the consortium, that although publicly available, will not be distributed actively.

Methods

In March 2016, interviews with a diverse group of stakeholders were conducted by the research consortium of ESPrIT at the premises of the Public Health Institution of Turkey. In total 17 people were interviewed. Amongst them representatives from the academic and medical field, MoLSS, CASGEM and PHIT staff including potential trainees (see Annex 1 for a listing). These issues and progress of the ESPrIT project were also discussed with the president and vice-president of PHIT in several meetings. Lastly, interviews were held with representatives of PHIT working at the Occupational Health and Safety Units of the Community Health Centers. This report shows the results of this inventory.

The selection of interviewees was done by PHIT and did not result in a representative sample of all relevant stakeholders. For example we did not interview social partners. For some groups only a small number of representatives could be interviewed. The results presented in this report can therefore be biased and can only be interpreted as our interpretation of the views and opinions given.

Background information

In Turkey, a large majority of occupational diseases go unreported. Not knowing the size, distribution and nature of the problem, public health officials cannot plan intervention programmes or allocate resources. At this moment, the data of the Social Security Institution are the only source for national statistics related to occupational health and safety. According to the Social Security Institution statistics 494 occupational diseases have been recorded for compensation in the year of 2014 (see below Table 1). These are all cases reported by physicians of a few selected hospitals as being an occupational disease and in a next phase all had to pass a second assessment performed by an OD expert of SSI in Ankara and being accepted in that procedure as well as a compensable occupational disease.

Table 1: Statistics of Social Security Institution, TURKEY 2009-2014

Year	Number of workers	Number of accepted workers with OD	Number of deaths from OD	Work days lost due to accidents and OD
2009	9.030.202	429	0	1.589.116
2010	10.030.810	533	10	1.516.024
2011	11.030.939	697	10	1.772.900
2012	11.939.620	395	1	1.650.250
2013	12.484.113	371	0	2.358.195
2014	11.385.011	494	0	2.065.962

From the 74 different kinds of ODs on the Classification of Occupational Diseases list used by SSI (see Annex 2) Hüseyin Ceylan (2015) reports that 'silicoses and silicotuberculosis' is recorded in more than half (56,9%) of all ODs accepted in the last 10 years in Turkey, 'lead and dust' (11, 1%) and 'arsenic and its compounds' (5,9%) being second and third. Ceylan (2015) estimates that the yearly number of new accepted ODs is less than 1% of the minimum number to expect, based on commonly held criteria. These numbers demonstrate the necessity for improvements in the infrastructure of recognizing, diagnosing, notification and registration of ODs or presumably of so called work-related diseases.

Though compensation for workers with an OD is under the responsibility of the MoLSS, the treatment, rehabilitation and prevention of ODs is since 2004 the responsibility of the MoH. The MoH established a department concerning OD in 2008. This department increased and grew in efficiency in 2012 as the official responsibility regarding OD officially shifted from the MoLSS to MoH. Following the ratification of ILO Conventions No. 167 and No. 178 respectively on Safety and Health in Construction and Labour Inspection (Seafarers), a "Law on Occupational Safety and Health" and its secondary legislation were approved in 2012, also in line with relevant EU Directives (Directive 89/391/EEC - OSH "Framework Directive").Turkish OSH-related law is set out in Annex 3, to give a basic understanding of the legal playing field in Turkey where ESPrIT is operating in.

Results

Knowledge, skills and education on occupational health and diseases

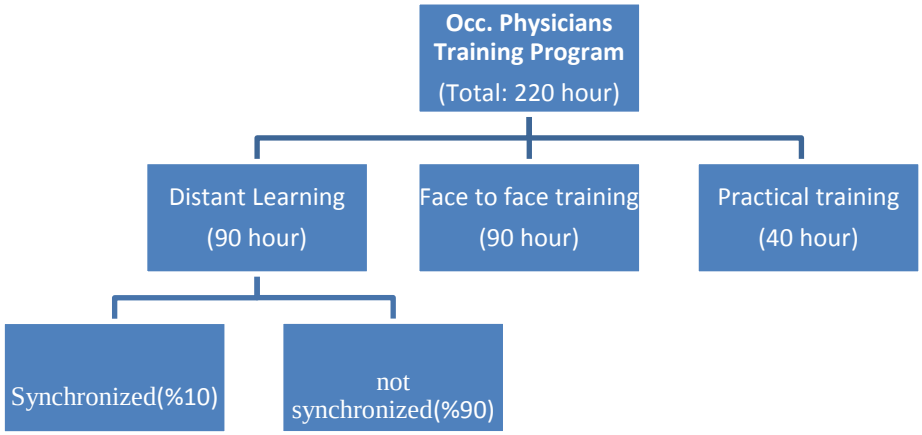
One notable expansion of employer responsibilities by 6331 OSH Law is the requirement to provide on-site risk mitigating experts and physicians. The OSH Law mandates that an occupational safety expert, an occupational physician and an occupational health nurse should be assigned by employers depending on the size of the company and the nature of the hazards involved. Such individuals can be appointed from amongst employees, or in cases in which no such qualified individual exists, employers are obliged to provide this service using external providers.

Currently in Turkey, Occupational Health and safety services are provided by three different type of service providers :

1. Workplace Health and Safety Unit - (Private)
2. Joint Occupational Health and Safety Unit (JOSHU) - (Private)
3. Occupational Health and Safety Units, operating under the Community Health Centers (CHC). CHC are working under PHIT in the cities all over Turkey (Governmental organisation).

All those service providers are certified by the MoLSS and they are monitored by that Ministry. In the companies with 1000+ employees, the employer is required to establish a full time health and safety unit at the workplace. This represents a significant increase in the scope of governmental health policies as well as an increase in employer obligations and places an additional, associated financial burden on employers. Certification of the OSH experts is arranged by law (Regulation on Employment of Occupational Safety experts (Published in the Official Gazette dated 29 December 2012) and (Regulation of the Ministry of Labour and Social Security of July 2013 on education, duties, powers and responsibilities of occupational physicians and other health personnel).

Figure 1: Occupational physicians training program



The traditional way to become an occupational physician consists of a 3 months training module after obtaining basic medical training (6 years in medical school). The training consists of 90 hours face to face and 90 hours online (most not synchronized, so not working at the same time with colleagues or a trainer at the same topic which implies that the interaction during the course is very limited) and one week of practical training with an occupational physician working actively in a

company. Certification of the trainings is approved by MoLSS. After certification occupational physicians take a week of training and re-examination every 5 years. All medical doctors are eligible for this programme who finished medical school in Turkey which is 6 years training. Continuous learning is not part of the program. OPs working in the field are mostly asked by the employer to do polyclinical work and prescribe some drugs to the workers for their acute symptoms instead of conducting preventive actions.

In total, there are 30.000 certified occupational physicians in Turkey, of which 12.000 are active working as occupational physicians. However, only 3.000 of those occupational physicians work full-time at a company. The rest of them (9.000 OP) works as a consultant or a part-time OP at a company next to their job at a Governmental or Private company.

Table 2: Official Occupational physicians Training Program

Sıra No.	Name of the lesson	Hour	
		Face to face	Total
1	Introduction and Pretest	1	1
2	Concept of OSH	1	1
3	OSH culture	1	3
4	OSH in Turkey and in the world	1	1
5	Basics in legislation	1	2
6	Labour legislation	3	5
7	Legislation in OSH field	0	2
8	National and International Organisations	1	3
9	International Agreements in the field of OSH	1	4
10	OSH Services	4	12
11	OSH Boards	1	2
12	OSH Systems	1	3
13	Risk Management and Risk Assesment	6	6
14	Workers' health surveillance at workplace and biological monitoring	3	6
15	Surveillance on Working Environment	3	4
16	Workplace Hygiene	1	3
17	Physical Risk Factors	4	8
18	Chemical Risk Factors	3	6
19	Biological Risk Factors	1	2
20	Psychosocial Risk Factors	2	4
21	Ergonomics	3	6
22	Prevention Policies	4	6
23	Occupational Health and Safety at Electrical Work	1	2
24	Combustible, flammable and explosive atmospheres	1	3
25	Major Industrial Accidents	1	3
26	Work accidents	3	6
27	First aid organisation at work	0	1
28	Introduction to OD	3	6
29	Work related Diseases	1	2
30	Occupational Respiratory Diseases	4	8
31	Occupational Cardiovascular System Diseases	1	1
32	Occupational Dermatological Diseases	1	3
33	Occupational Diseases of the Nervous System	1	2
34	Occupational Reproductive System Disorders	1	1
35	Occupational Infectious Diseases	1	2

Sıra No.	Name of the lesson	Hour	
		Face to face	Total
36	Occupational Cancers	1	2
37	Occupational Musculoskeletal System Diseases	1	4
38	Hearing Loss	1	2
39	Toxicology	1	2
40	Current Issues in Occupational Health	1	2
41	Special Risk Groups at Working life	0	3
42	Improving Health at Work	2	4
43	Working Life and Nutrition	0	2
44	Adult Training, Workplace Health and Safety Training and Communication	2	4
45	Epidemiological Approach to Occupational Health	3	6
46	Evaluation of Workplace Health Records	2	5
47	Ethics in Occupational health	2	5
48	Case Study Based on Small Group Dynamics	8	8
49	Final Test and Evaluation	1	1
	Total Theoric Training:	***90***	***180***
50	Practical training at work place	-	40
	Total :	-	**220**

Figure 2: Occupational safety experts training program

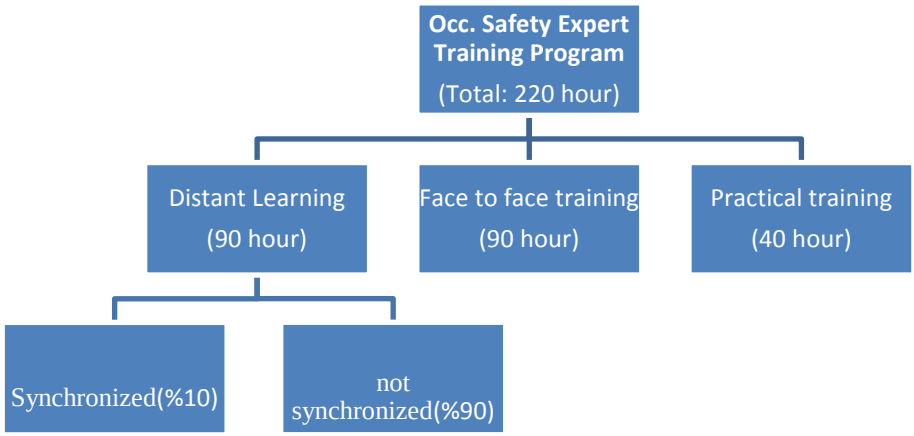


Table 3: Official safety experts training program

Sıra No.	The Name of the Lesson	Hours					
		A Class		B Class		C Class	
		Face to face	Total	Face to face	Total	Face to face	Total
1	Introduction and Pre-test	1	1	1	1	1	1
2	Concept of OSH	1	1	1	1	2	3
3	General Introduction to OSH and OSH culture	-	3	1	3	2	4
4	OSH in Turkey and in the world	1	1	1	1	1	1
5	Basics in legislation	-	1	-	1	-	2
6	Labour legislation	2	4	2	4	3	5

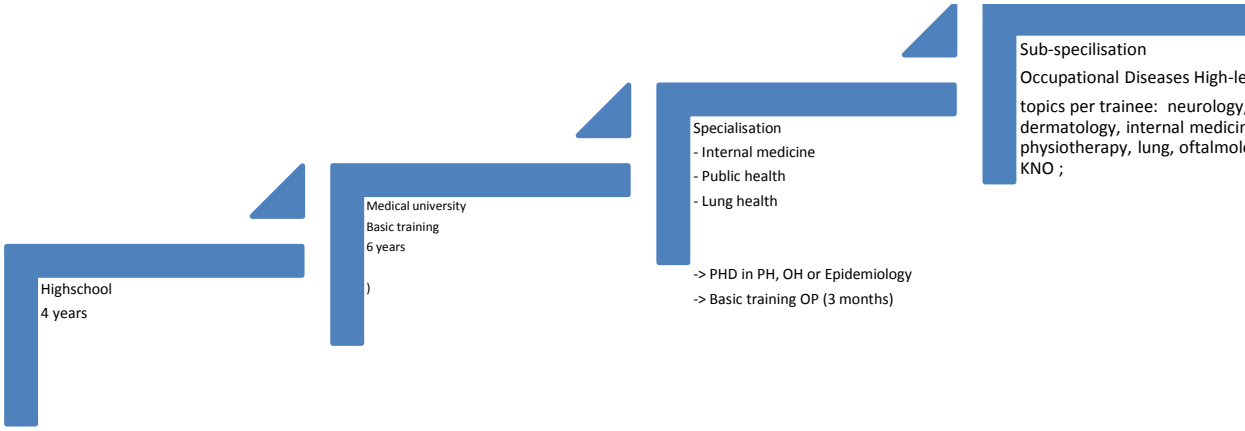
Sıra No.	The Name of the Lesson	Hours					
		A Class		B Class		C Class	
		Face to face	Total	Face to face	Total	Face to face	Total
7	Occupational Health and Safety in Act	-	1	-	1	-	2
8	National and international organizations and conventions	-	1	1	2	1	3
9	OSH Services	2	4	2	4	2	4
10	OSH Boards	1	1	1	2	1	2
11	OSH management Systems	3	4	2	4	2	4
12	Risk management and assesment	12	18	15	18	15	18
13	Occupational Environment surveillance	1	2	1	2	1	2
14	Occupatıonal Hygiene	1	2	1	2	1	2
15	Work Buildings and additional parts	1	2	1	2	1	2
16	Physical Risk Factors	6	9	6	9	4	9
17	Chemical Risks	6	12	4	8	4	8
18	Biological risks	1	4	1	4	1	2
19	Psychosocial risks	1	4	1	4	1	2
20	Ergonomics	2	4	2	4	2	6
21	Prevention Politics	2	4	2	4	2	4
22	Occupational Health and Safety for welding	3	4	3	6	2	3
23	Occupational Health and Safety for electrical work	2	6	3	6	3	6
24	Occupational Health and Safety at lifting tools	2	4	2	4	3	6
25	Occupational Health and Safety for motorised tools	2	3	2	3	1	2
26	Occupational Health and Safety for hand tools	1	2	1	2	1	2
27	Occupational Health and Safety at maintanence and repairment jobs	2	3	1	3	1	2
28	Fire	3	6	3	6	5	10
29	Emergency situation plans	2	4	2	4	2	4
30	Health and Safety signs	-	2	-	2	-	2
31	Principles of Ventilation and Air Conditioning	2	4	2	4	1	3
32	Occupational Health and Safety for working with Pressure Vessels	2	4	2	4	2	4
33	Occupational Health and Safety working in confined areas	1	2	2	4	2	2
34	Occupational Health and Safety at working with a screen	-	1	-	1	-	1
35	Occupational Health and Safety in manual lifting and handling	1	1	1	2	2	3
36	Occupational Health and Safety at working on heights	1	3	2	4	1	3

Sıra No.	The Name of the Lesson	Hours					
		A Class		B Class		C Class	
		Face to face	Total	Face to face	Total	Face to face	Total
37	Occupational Health and Safety at construction	6	12	3	8	2	6
38	Occupational Health and Safety at mining	6	12	3	8	2	6
39	Personnel Protective Equipment	1	3	1	3	2	4
40	Occupational Health and Safety in Design, production and use of work Equipment	1	3	2	5	2	4
41	Occupational accidents	3	6	3	6	3	6
42	Health Surveliance and OD	1	2	1	3	1	3
43	Necessary checks for Occupational Safety and the documents to be arranged	1	2	1	2	1	2
44	Special Groups requiring special policy	-	1	-	1	-	2
45	Working at night and working with shifts	-	1	-	1	-	1
46	Ethics İn working life	1	2	1	2	1	2
47	Adulth training and OSH trainings at workplace	1	2	2	3	2	3
48	OSH in Agriculture, Forestry and Livestock Operations	-	1	-	1	-	1
49	Final Test and Evaluation	1	1	1	1	1	1
	Total Theoric Training:	***90***	***180***	***90***	***180***	***90***	***180***
50	Practical training at work place	-	40	-	40	-	40
	TOTAL:	-	**220**	-	**220**	-	**220**
A, B and C are levels, with A being the highest level of expertise							

Apart from the certified programme to be an occupational physician there are two additional educational programmes for occupational physicians in Turkey (see Figure 1).

1. PhD Programme in OSH: (4 years : All medical doctors are eligible). Hacettepe University for example has a PhD programme in the OSH field which lasts 4 years. It is a programme which is build up according to the Bologna structure. Students who apply for the research programmes have to pass a competency exam before being able to do research for two years (for the thesis) after 2 years of preparatory courses. In general the number of physicians actually doing research is limited and the quality of articles published is low (based on number of citations).
2. High-level sub-specialisation program on occupational diseases: (3 – 4 years programme : – no students have graduated yet). During our interview with the university representatives, it was mentioned that 5 universities started a programme to become a specialist on OD in 2014. This high-level sub-specialization program can be undertaken by physicians who have already a specialization in Internal Medicine, Public Health or Chest Diseases.

Figure 3: A schematic overview of the education in Occupational Health in Turkey.



A MoU between Hacettepe and MoH/PHIT exists; but no concrete collaboration in research is established yet. The general training on epidemiology which medical students receive is based on chronic diseases, not on OSH. There is also a sub-specialisation in epidemiology. There are currently 26 graduated epidemiologists in Turkey, mostly working in the field of chronic and communicable diseases. They do not form a network. Trainings on preventive and occupational medicine are not sufficiently developed items in the curricula of the medical students, but the interest in public health and occupational health is growing in Turkey. Public health and occupational health are separated from epidemiology, but sometimes it is a part of epidemiology courses.

CASGEM (Training and Research Centre for Labour and Social Security) offers various training programs for OSH experts on how to perform risk assessments (based on ILO Standards). They also produce sectoral guidelines. So far, the ESPrIT team has failed to find those sectoral guidelines.

The main conclusion is that there seems to be a gap between the in time very limited programme to become an occupational physician and the new and very high level sub-specialisation programmes that have been developed recently. The focus of the education programmes is on treatment. Furthermore, the training and the practice of physicians is not focused on prevention because the system does only reimburse medication and treatment and not preventive actions. This will be elaborated in the next paragraph on surveillance systems in Turkey.

Vision of PHIT on training

The Occupational Health and Safety Department of PHIT is actively involved with occupational health since 2011. Because of the new OSH law, CHC serving under the PHIT started to give OSH services to the sector. Furthermore, PHIT is working with the MoLSS for the ratification of bylaws. For those purposes a few workshops have been conducted by PHIT with the stakeholders. We provided a report of one of those workshops on current training activities at Annex 4.

Infrastructure and surveillance systems and attitudes towards registration

Responsabilities

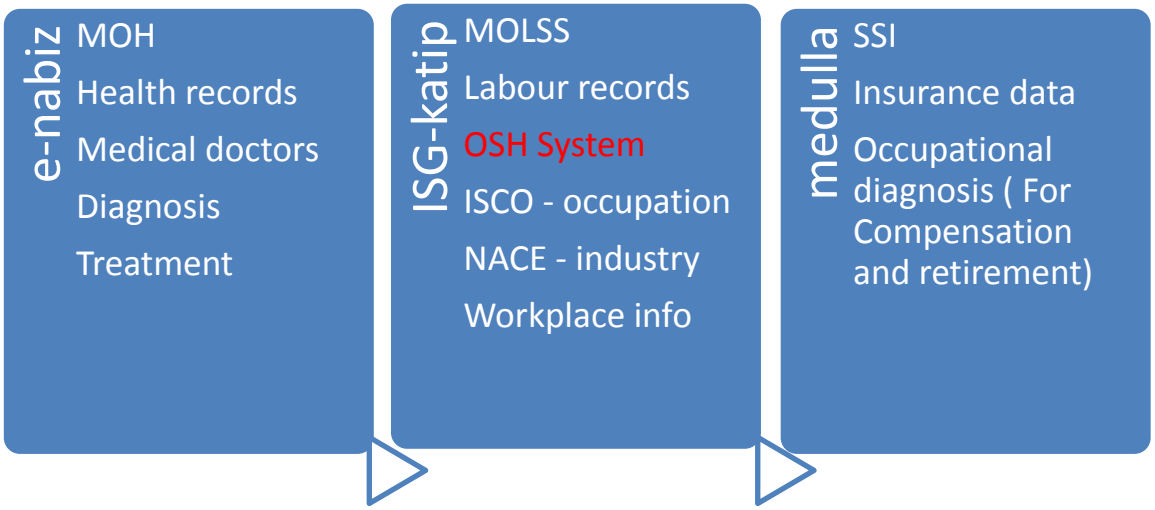
Companies are obliged to have OSH services, depending on their size and the level of hazard involved in the sector. In general companies with more than 1000 employees have one full time “in house” occupational physician. Smaller companies hire OSH services from a private organization or from the Community Health Centers (currently 83 out of 900 CHCs provide OSH services). In the high- (and certain medium-) risk sectors pre-employment health assessment is mandatory. In companies of all high-risk sectors employees are periodically examined. OPs are legally obliged to consider legislation on specific hazards and conduct risk assessments and workers’ health examinations periodically (legal obligation). Pre-employment examinations and periodic examinations, together with workplace assessments could be used to diagnose occupational diseases in an early stage.

The occupational physicians are dependent of the employers and are generally not paid or stimulated to diagnose and to spend time and efforts in order to prevent occupational diseases, work-related diseases or health complaints and accidents of employees. Occupational physicians avoid filing OSH issues of the company, because this may cause trouble for both the occupational physicians and employees.

All medical doctors (including family physicians) and hospitals report the treatment to the regular medical reporting system E-Nabiz (formerly know as Saglik-net). Through an automated link with the financial reporting system Medulla, hospitals and medical doctors are paid for their work. In E-Nabiz diagnoses are reported with ICD-10. This classification system seems to be widely adopted in Turkey. Personal characteristics of the patient like gender and age are reported. No background data of employees (sector and occupation) is part of this medical reporting system. Furthermore, the work and employment registration system called as ISG-Katip collects the data on the level of companies/establishment. There is no information in the system related to the workers’ health. MoLSS is the owner of the data. ISG-Katip and E-Nabiz are not connected with each other.

MoLSS and SSI are the owners of the data of Medulla , SSI (SGK in Turkish) is using this system for the reimbursement of all medical costs of the insured people in Turkey (directly to the care provider) and for payments for the compensation of workers with an OD who are found eligible by the high board at SSI in Ankara. In addition, all kind of pensions (retirement, disability, OD compensation, early retirement and deaths from OD and work accidents) are paid by SSI through Medulla.

Figure 4: A schematic overview of the medical registration systems in Turkey.



ISG-Katip covers all the information related to 1.500.000 workplaces; private and governmental. Furthermore, the system contains data of approximately 100.000 certified OSH experts (mainly occupational safety experts and OPs) in one online system. It was established in 2011. In ISG-Katip there is information regarding workplaces, sector and industry, registration for trainings and data on company level (see Table 4).

Table 4: Data on ISG-Katip by 01.10.2013, type of organization, type of agreement.

Type of Organisation	Registered number to E-Katip
Training Centers for OSH experts (3 months training)	235
Joint Occupational Health Safety Unit (JOSHU)	890
Community Health Center (CHC) – under PHIT	29
Certified Occupational Safety experts	34.902
Certified OP	15.983
Trainers for OSH experts (names in register)	3.132
Registered workplaces, that are establishments or settlements of an enterprise (company)	1.659.641

Type of Agreement that enterprises have made (contracts) and the kind of experts that are contracted by the enterprise	Number
Occupational Safety Expert	34.420
Occupational physician	34.160
Community Health Center (CHC) – under PHIT	29

Type of Agreement that enterprises have made (contracts) and the kind of experts that are contracted by the enterprise	Number
Service agreement between the workplaces and JOSHU	41.165
Service agreement between the trainers and training centers sertified by MoSLL	7.420
OSH experts (a service agreement between a workplace and both, an occupational physician and safety expert)	138.698

Test laboratories belonging to MoLSS or private laboratories certified by MoLSS conduct the health tests of the workers and environmental tests at the work places. In total there are 110 laboratories which are certified by MoLSS. Since August 2015, it is obligatory for the employers to have workers' health surveillance (such a biomonitoring assessments) and environmental exposure tests done by the certified laboratories.

From E-Nabiz no information can be obtained on the work-relatedness of the diseases. The current OD registration system is only for compensation and only a very limited number of OD's, like chronic and well advanced occupational diseases can be compensated. Also, the data gathered in the workplace by the MoLSS in ISG-Katip cannot be linked with the health data from MoH. There is not enough data on OH and ODs for policy making and prevention at all levels. As a try-out, data between the E-Nabiz and ISG-Katip system could be linked in order to find out if relationships between work and health can be established.

The workload of Turkish physicians is very high. Currently physicians do not have or take the time or awareness to consider work as a cause of diseases. The Ankara Occupational Diseases hospital is working to prepare a ICD-10 matching list (see Annex 5) to make physicians aware certain diseases could be work-related. Collaboration between MoH and MoLSS is considered fundamental to address OD in early stages. The ESPrIt project is a good opportunity to foster collaboration between MoH and MoLSS.

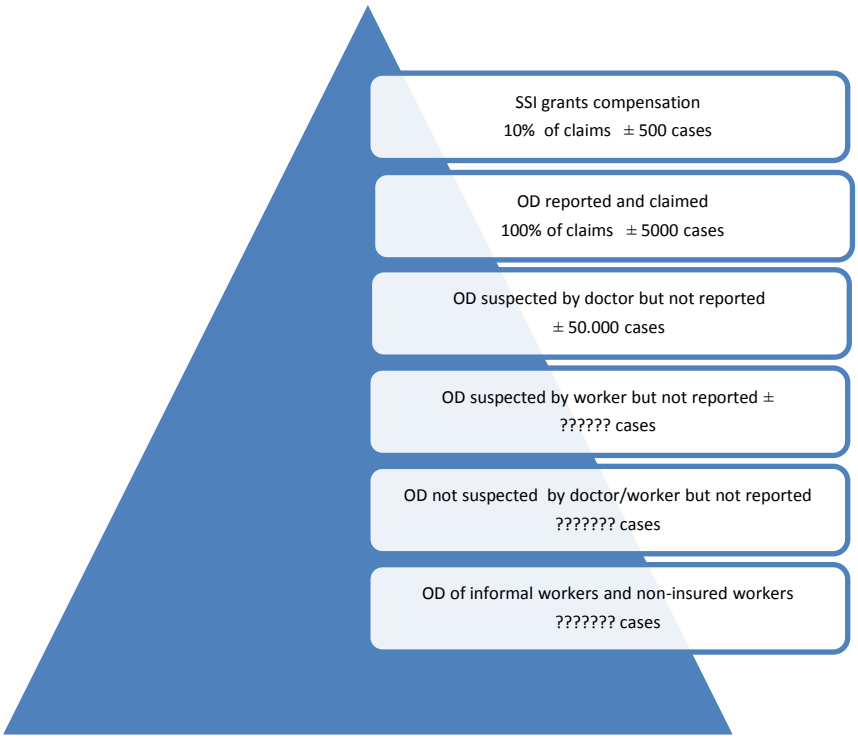
As a first step for this collaboration a National Health and Safety Council was created in 2014. The National Health and Safety Council consists of employers, employees, MoH, MoLSS, Ministry of Education and Ministry of Mining, and meets twice a year. It develops advices for SSI and other public institutions. In its policy plan 2014 - 2019 on 'Occupational Health and Safety' a strategy is presented in which OD diagnosis is identified as a crucial issue. The occupational health surveillance system should shift its focus from treatment and compensation of diseases to prevention, also considering trends in diseases. Within the current treatment oriented system there is little motivation among doctors to pay attention to work-relatedness of diseases. An idea is to prepare lists/guidelines for the occupational physicians to make the link with occupation when diagnosing patients[1]. An early warning unit at PHIT was created at the Communicable Diseases department. A

[1] See for example this educational material from the UK on this topic: http://www.healthyworkinguk.co.uk/uploads/resources/resources/HWUK/unit_3/

module on occupational diseases might be developed as an early warning system for occupational and work-related diseases.

Process of surveillance

Figure 5: Pyramid of diagnoses and reporting of occupational diseases in Turkey and comparable iceberg metaphor(after Metz, 2002)



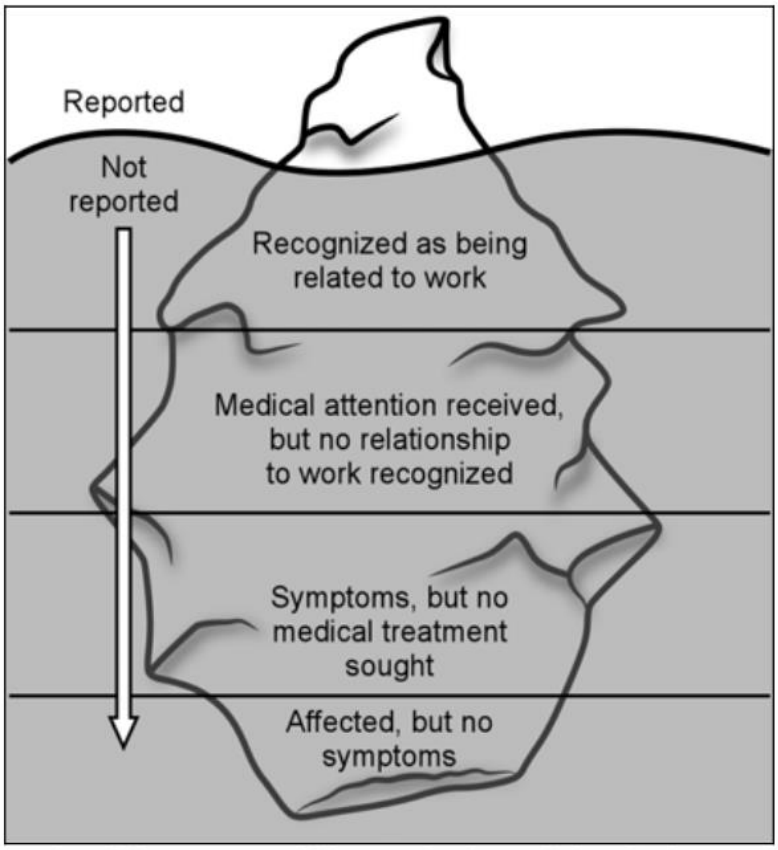


Figure 1.□ Disease and illness in the mining industry (after Metz 2002).

What happens when a worker gets ill?

Figure 5 shows the pyramid or iceberg with regard to the reporting of occupational diseases in Turkey (and in many other countries). Firstly it must be noted that a group of workers is not protected by the social security insurance system for occupational diseases and injuries caused by causal factors and acidents at work. Estimations with regard to the number of not insured people in Turkey differ. There are 25 million workers officially registered in the social security system in Turkey according the SGK data (January 2015). However, from one interviewee we got the estimation of 40 million workers of which 26 million are protected by the social security insurance system while 14 million are not.

Insured workers can go to either to their FP, or the OP at their workplaces/CHC/JOSHU, or consult directly a physician in a hospital. There are two options to make a claim for OD: The worker can file a claim himself or a claim can be filed by the OP. For a personal claim, the worker goes to SSI office at his city to file an official claim. City SSI sends him to the designated hospital at the region (governmental hospital or a university hospital which has an OD board or Occupational Diseases Hospital).

The file for the OD claims should contain all information related to workers health (first health check at admission, periodical health checks, blood tests, audiometry etc.) and all relevant environmental exposure tests at the work place (noise, dust, vibration etc.). When there is a suspicion for an occupational or work-related disease, the employee can be sent to a hospital for a medical examination (assessment) by an expert. The hospital doctor or audiometrist or other expert judges the relationship between the disease/illness and the occupation. Finally, the percentage of incapacity for the lifespan of the employee is calculated by SSI based on strict rules set by SSI itself.

- Family physician
- Occupational physician
- Community Health Center

→ *Governmental hospitals
*Training & education hospitals
*Occupational diseases hospitals →

SSI

Patients are relunctant to discuss the potential work related causes of their disease with their OP, because they fear to be fired as a result. OPs are also reluctant to report work relatedness of a disease, because he/she also risks to be fired. In general, family physicians have no information on the patients' working life and have no time to assess occupational causes of any disease. Awareness on occupational diseases is limited, because they remain invisible. These are the most common reasons why an OD is not diagnosed.

There are 150 hospitals appointed by the government to create registration files to submit a compensation claim to SSI. In reality only 2 out of those 150 institutes (only the Occupational Diseases Hospitals of Ankara and Istanbul) actually send in claims for compensation. A possible explanation concerns the complexity of the compensation process; these hospitals need to install a board and have to make very detailed files to make claims to SSI. Creating these files takes a lot of time and energy, and is not paid for. In most hospitals the required board does not exist and time

and motivation is lacking to prepare claim files. The lack of motivation can partly be explained by the fact that SSI grants only 10 % of these claims for OD.

Compensation moreover, does not apply to early stages of the diseases and most diseases are never compensated, even if the disease that workers suffer from is on the SSI list (Ceylan, 2015). The list of accepted ODs of SSI is not based on ICD10 and is very restricted. It is based on political and economical arguments instead of medical arguments. In conclusion, the diagnosis of occupational diseases is one problem. The other problem is the process of getting an OD compensated by the Social Security Institution. The SSI compensates only the top of the iceberg.

What happens to the other 90% of the cases rejected for compensation? The only publically available numbers are the accepted cases (10% of all cases claimed) in the Social Security Institute. Other national data are considered obscure and not trustworthy. The Turkish Center for National Statistics holds no more data than SSI provides.

Availability of data through new initiatives

Ankara and Istanbul Occupational Diseases Hospitals

These hospitals have available data of all the OD claims that are presented to SSI. Also those that were denied compensation (90% or 4500 /year). Studying these dossiers can provide insight in data of many more occupational diseases than are available at this moment through SSI. Analysis of these data can give insight in the extent and nature of (the workers with an) occupational diseases that are not compensated.

Initiative of Ankara Occupational Diseases Hospital

PHIT will initiate to establish occupational diseases policlinics at selected hospitals as a pilot with the support of Ankara Occupational Diseases Hospital. Pilot studies could be conducted at these hospitals to analyse the data with the aim to assess the number or incidence figures of occupational diseases presented at those policlinics at selected hospitals, claimed or not, accepted or not. Pilots studies will make visible occupational health issues and economic costs of not -compensated workers with an OD or WRD.

Initiative of the Community Health Center in Mersin

As it is mentioned above, OSH services are provided by three different types of service providers in Turkey. Occupational Health and Safety Units at the Community Health Centers (CHC) are one of those providers. There are more than 900 CHCs all over the Turkey which perform their duties connected to PHIT in Ankara. 66 of those CHC are certified by MoLSS to offer OSH services to workers and enterprises in Turkey, especially to small enterprises which have less than 10 workers. At this moment CHCs have agreements with 828 workplaces (settlements of enterprises) while providing OSH services to 14.182 workers in total. There are 181 occupational physicians, 134 Occupational Safety experts and 139 other health personnel working at those OSH Units located at the CHC. These CHC health professionals are potential trainees of the ESPrIT project.

The Mersin Community Health Center is one of those CHCs which provides occupational health and safety services from 2011. It has contracts with 200 workplaces this year. 136 out of these 200 workplaces are small scale workplaces (<10 workers). The Mersin CHC uses the ISG-katip system to register its agreements with the workplaces.

Vision of PHIT on registration of OD

The overarching vision regarding OD that PHIT has since 2016 is to create a register matching ICD10 diagnoses codes in E-Nabiz with al least NACE (sector) and ISCO (profession) codes. It is not clear yet on which level linkage of data is possible. Most optimal would be linkage on the worker level of disease and e.g. kind of workplace that the worker is active now and in the past (metal, agriculture, etc). Several meetings with MoLSS have been set up to outline the vision of PHIT and to see how data could be shared with MoLSS, which has data on and access to the workplace. A combined registration system is aimed for, but this may require changes in the law and this may take a long time to be active and available for epidemiologic analysis.

Conclusions on needs and knowledge gaps

Recent legal changes in Turkey have resulted in increased awareness for occupational health, and especially ODs and work-related diseases at PHIT. MoH has taken up the initiative to create a National Occupational Health R&D Center and started a Program for the ''Improvement of Multi-stakeholder Health Responsibility'' which has a special chapter on Occupational Health. These developments create a good basis for the activities within ESPrIT, which have to deal with the current situation.

Awareness

Most occupational and work-related diseases go unnoticed as can be seen in the iceberg metaphor. The burden of ODs and work-related diseases to the workers, employers and the society as a whole is not visible. Visibility is considered key to solve the problems. There needs to be an awareness that work can have a negative effect on workers health and can make a disease worse.

Motivation

FPs have a huge workload. OPs are not independent. The system does not pay for registration and notification by hospitals. Prevention is not yet a topic, however awareness is rising.

Knowledge and skills

PHIT professionals both at the central offices and in the field are not research-oriented and lack of the time, the knowledge, and the access to evidence based science and good practices.

Infrastructure and management

Several plans have been made to improve the current situation. Bureaucratic obstacles prevent proper implementation. The systems of MOH and MoLLS are completely separated.

Preliminary ideas on training needs

These issues will be further elaborated in Deliverable D2.1 Report on learning objectives, training content and approaches.

Target groups that were proposed

PHIT staff working at the Community Health Centers in the provinces and at the PHIT center in Ankara are the target group. Family Physicians are not considered to be a target group because they are not at all focused on the workplace and have a huge workload.

Expected characteristics for all trainees
Motivated, basic knowledge of methodologies, reliable, mobilizing power, community leaders, self-efficacy, highly visible, power to motivate others, opinion leaders, energetic, enthusiastic.

Expected characteristics for the training on scientific research skills (training A)
Specific characteristics: Good English language skills and a significant number of participants (about two thirds) with a medical background.
Others can be:

- Statisticians
- Methodologists
- Occupational Safety experts with different background: such as machine safety engineers, mechanical engineers, biologists, chemists.
- Ergonomists
- Epidemiologists / public health experts
- Work and organizational psychologists

Expected characteristics for the training on diagnosis and surveillance (B)
Specific characteristics: Good English language skills (if possible), embedded field professionals

- OH Nurses
- Occupational physicians
- Community health Center workers (prevention/education)
- Work and organizational psychologists
- Health promotion, educational experts
- IT experts

Training content and objectives proposed

In general, the trainings should show different types of surveillance systems. The training should be interactive and high -level and material should be up-to-date. Courses and materials should be offered in understandable language and appropriate given the existing knowledge and skills. The focus should be on awareness of the need for monitoring, competences in collecting data, in raising awareness of occupational risks and in skills in the practical prevention of ODs and WRDs, all focused on aims and objectives that are relevant for Turkey. The training should not be based on a face-to-

face teacher-centered classical group training. Education should be interactive learning, using cases, including group work and should be focused on practical implementations. There is a strong need for online learning materials and/or for online education and training programs (that can also be used for blended learning) for occupational health physicians, occupational nurses, safety engineers, community health workers and volunteers. To date, Turkish OSH professionals are not yet used to access and use free online quality information systems such as systems provided for example by NIOSH and free available online courses and lessons from various sources in the world. The repository of ESPrIT should show to find reliable online sources. In the training there will be time reserved for a concise training in how to do a literature search effectively and efficiently. The option can be considered that PHIT will offer an online or telephonic helpdesk or an expert-based online Question and Answer (Q&A) system to answer both basic and more complex questions on occupational diseases, industrial hygiene, safety etc.

After the trainings participants should be able:

- To find relevant information online, to understand and apply occupational epidemiology relevant for OD and WRD surveillance design and implementation, to understand related biostatistics and to participate in the collection of data and report writing; all on basic level.
- To explore the awareness on OD and WRD as important health issues, on workplace hazards and on surveillance systems in the actors involved.
- To understand the ins and outs in diagnosing ODs and WRDs, and in the development and continuation of surveillance systems inclusive reporting to MoH, SSI and MoLSS.
- To communicate occupational health issues to the practice and culture in primary health care, in community health care and in hospitals.
- To collect data on risks factors and actual or past exposure of workers, and data of health assessments and/or assessment of cases of OD or WRD. To identify which workers are/were affected by OD in the workplace. To report data to a databank. To use the data bank for preventive purposes.
- In the basic occupational training program there could be about two days general OSH training and three days of training on epidemiology and workers' health surveillance options and issues in implementation.

Length of the training

The original length for the first basic scientific training is 10 days. 10 days basic scientific training might be too long for people to attend and be away from their actual workplace. As such, the amount of face to face training days in the first basic scientific training will have to be reduced to 5 days. Instead, asssignments will be prepared for 5 days homework prior to and in between the trainings.

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Preliminary ideas on research needs

This list of potential research questions is based on a first brainstorm session within the consortium. These issues will be further elaborated in Deliverable D4.1 Priority list of essential scientific questions.

- **Evaluation of the current Occupational Health and Safety surveillance systems in Turkey.**
  - What are existing data and datasources on OD?
  - What is the role of GP and OP in finding and reporting cases?
  - What is the awareness on OD in GPs and OPs?
  - How is the awareness between FPs and OPs on OD changed in time 2010 – 2015?
  - Difference betweenTurkish, BE and NL system of surveillance of OD?
  - Differences between urban and rural areas in surveillance of OD?
  - Differences between the formal and informal sector in surveillance of OD?
- **Questions relevant for the construction sector & MSE's**
  - What are valid and simple criteria for specificity and sensitivity to assess work-relatedness of noise-induced hearing loss and MSDs?
  - Can OP's work with a simple assessment tool to assess work-relatedness of noise-induced hearing loss and MSD?
    - What are barriers and facilitators in SME's?
  - What is the percentage of usages of PPE's in SME's in the construction sector?
  - Which protective measures are used to prevent noise-induced hearing loss and MSD in SME's in construction?
  - Is there a difference in ODs in SME's and large construction companies?
- **Questions relevant for the mining sector**
  - Risks of coal, gold, boron, chromium mines → toxicology?
  - What surveillance system would work in Turkey to detect occupational diseases due to Boron?
- **Questions relevant for the health care sector**
  - How many cases of dermatology (skin diseases) cases in the health care sector in the period of 2010 – 2015 exist in Turkey?
  - How many burnouts in health care sector exists in Turkey?
  - Sharp injuries, MSD, skin diseases, mental health problems,
  - Is there a standard protocol to follow when someone reports with a needle stick incident at the CHC or public hospitals?.
- **Questions relevant for the metal sector**
  - What do ex-FERROSH trainees think of a protocol on OD in large metal companies?
  - How can ex-FERROSH trainees design a protocol on OD in large metal companies?
  - What can we learn from good practices of surveillance in large metal companies to implement in small enterprises

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Appendix I: List of interviewees

Dr. Mustafa Kemal BAŞARALI, Associate Professor, Vice President, PHIT
Dr. Hınç YILMAZ, Associate Professor, ODH Ankara Dr. Engin TUTKUN, Associate Professor, ODH Ankara
Mustafa Necmi İLHAN, Associate Professor, Gazi University Cebrail SIMSEK, Training and research hospital of Ankara (Hospital for Pulmonary Diseases , IMUD (Occupational physicians Association) and ISS board member
Dr. Recep AKDUR, Professor, Ankara University Dr. Mine Esin OCAKTAN, Associate Professor, Ankara University
Dr. Alp ERGÖR, Professor, Dokuz Eylul University (Skype meeting)
Meftun SAKALLI, Head of Department Safety, Ministry of Labor and Social Security Ayhan ÖZDEMİR, President, Occupational Health and Safety Research and Development Institute
Dr. Ali Naci YILDIZ, Professor, Hacettepe University Dr. Levent AKIN, Professor, Hacettepe University
Dr. Sibel KIRAN, Associate Professor, Hacettepe University Dr. Tevfik PINAR, Professor, Hacettepe University Dr. Nazmi BİLİR, Professor, Hacettepe University
Dr. Ali Koray KENZİRMAN, PHIT-CHC of Mersin city Dr. Ilknur DERIN, PHIT, CHC of Bursa city Dr. Filiz Erginbaş, PHIT, Ankara (She did not come)
PHIT president Prof Dr. Irfan SENCAN

Appendix 2: List of Occupational Diseases used by ISS
(from Hüseyin Ceylan, 2015)

Classification of Occupation Diseases:
Occupational Diseases are classified under 5 main groups in SSI statistical yearbooks.
A Group: Occupational diseases caused by chemical substance,
B Group: Occupational skin disorders,
C Group: Pneumoconiosis and other occupational respiratory system diseases,
D Group: Occupational contagious diseases,
E Group: Occupational diseases caused by physical factors.

The total of 74 diseases is defined as occupational disease under this group of 5.

Code	Number	Occupational Diseases
Group A		
A-I A	1	Arsenic and its compounds
A-I B	2	Arsenic with hydrogen or arsine
A-2	3	Beryllium (glusinium) and its compounds
A-3 A	4	Carbon monoxide
A-3 B	5	Phosgene (carbonly chloride)
A-3 C	6	Hydrocyanic acid, Cyanides and compounds thereof
A-4	7	Cadmium and its compounds
A-5	8	Chrome and its compounds
A-6	9	Mercury and its compounds
A-7	10	Manganese and its compounds
A-8 A	11	Nitric acid
A-8 B	12	Nitrous gases
A-8 C	13	Ammonia
A-9	14	Nickel and its compounds
A-10 A	15	Phosporus and inorganic phosporus comp.
A-10 B	16	Organic phosporus and its compounds
A-11 A	17	Lead and lead dust
A-11 B	18	Organic lead and its compounds
A-12 A	19	Carbo sulfide
A-12 B	20	Sulfurous hydrogen
A-12 C	21	Sulfuric acid
A-12 D	22	Sulfur dioxide
A-13	23	Thallium and its compounds

A-14	24	Vanadium and its compounds
A-15 A	25	Chlorine
A-15 B	26	Bromine
A-15 C	27	Iodine
A-15 D	28	Fluorine
A-16	29	Aliphatic or alicyclic hydrocarbones
A-17	30	Halogenated derivatives of the aliphathic or alicyclic hydrocarbone
A-18 A	31	Alcohols
A-18 B	32	Glycoles
A-18 C	33	Ether and its derivatives
A-18 D	34	Ketone
A-18 E	35	Organic esters
A-19 A	36	Organic acid
A-19 B	37	Aldehyde
A-20 A	38	Aliphatic hydrocarbons nitro derivatives
A-20 B	38	Nitric acid esters
A-21 A	40	Benzol (Benzene) and its homologous
A-21 B	41	Naphtaline and its homologes
A-22	42	Halogenated derivatives of the aromatic hydrocarbones
A-23 A	43	Phenols, their homologues or their hologenated derivatives
A-23 B	44	Halogenated derivatives of the alkylaryl oxides, alky, aril and alkylarylsulfonates
A-23 C	45	Oxidation products of hydroquinen and benzoquinones
A-24	46	Aromatic amines or aromatic hydrazines or halogenated, phenolic, nitrified, nitrated
A-25	47	Nitro and phonel derivations of aromatic hydrocarbons
Group B		
B-1	48	Skin cancers and precancerous

		skin diseases
B-2	49	Non-cancer skin diseases (contact dermatidis, exema)
Group C		
C-1 A	50	Silicosis and silicotuberculosis
C-1 B	51	Asbestosis
C-1 C	**52**	Silicatosis
C-1 D	53	Siderosis
C-2	54	Aliminium and its compounds
C-3	55	Hard-metal dust
C-4	56	Thomas slug
C-5	57	Ocupational bronchial asthma
C-6	58	Byssinosis
Group D		
D-1	59	Helminthiasis
D-2	60	Tropical diseases
D-3	61	Infectious or parasitic diseases transmitted to man by animals or remains of animals
D-4	62	Pulmonary tuberculosis
Group E		
E-1	63	Diseases caused by ionizing radiations
E-2	64	Cataracts caused by heat radiation
E-3	65	Hearing impairment caused by noise (Acustic slot)
E-4	66	Diseases caused by atmospheric compression or decompression (polyneuropathy)
E-5	67	Osteoarticular diseases of the hands and wrists caused by mechanical vibration
E-6 A	68	Diseases of articulare bursitis resulting from continuous local pressure
E-6 B	69	Veter, veter case and periost diseases due to over looding
E-6 C	70	Meniskus diseases in mining sites and so
E-6 D	71	Tearing of vertebalprocessis due to over forcing
E-6 E	72	Neural paralyses due to continous local pressure
E-6 F	73	Muscular cramps
E-7	74	Miners' nystagmus

Appendix 3: Legal Framework OSH in Turkey

(Sources:

1. https://www.pwc.com/gx/en/hr-management-services/pdf/social-security-country-profiles-march-2014.pdf,

2. Gulay Toksoz. Decent work country report,Turkey – International Labour Office Regional Office for Europe and Central Asia, 2008)

OSH Law in General

The OSH Law applies to all types of public and private workplaces, save for those excluded under its Article 2 such as workplaces where no employees are employed. All employees that work at these workplaces, including apprentices and interns, fall within the scope of the OSH Law, regardless of their position or seniority. It brings various obligations to employers including taking health and safety precautions and all other precautions to decrease occupational risks, monitoring applicability of precautions and ensuring their proper application, training employees on possible occupational risks, health and safety rules, first-aid, firefighting and other natural disasters and risk assessments.

Currently, all provisions of the OSH Law are enforceable for all private entity workplaces with 50 or more employees. On the other hand, all provisions of the OSH Law except Articles 6, 7 and 8 are currently also enforceable ("Excluded Provisions") for hazardous, very hazardous and slightly hazardous private entity workplaces with less than 50 employees and public entities. The Excluded Provisions relate to Occupational Health and safety staff, Occupational Health and safety services and financial aid by the Ministry of Labor and Social Security ("the Ministry") for Occupational Health and security services and they became enforceable for hazardous and very hazardous private entity workplaces with less than 50 employees as of 30 June 2013 and for slightly hazardous private entity workplaces with less than 50 employees and public entities as of 30 June 2014.

Major Regulations

a. Risk Assessment and Accident Prevention Policy

The OSH Law and the Risk Assessment Regulation underline the importance of taking security measures to eliminate or decrease possible risks at workplaces. A risk assessment has to be made and renewed at least every two years for very hazardous workplaces, every four years for hazardous workplaces and every six years for slightly hazardous workplaces. Risk assessments should be renewed or a new risk assessment should be made under certain circumstances such as, among others, change in production method or occurrence of occupational workplace accident or occupational disease.

As per the OSH Law, a major accident prevention policy certificate or a safety report should be prepared for workplaces at which major industrial accidents are likely to occur and approved by the Ministry before these workplaces can become operational.

b. Employment of Occupational Health and Safety Staff

Prior to the enactment of the OSH Law, depending on the number of employees and workplace's hazard category, the employment of at least one part-time or full time workplace doctor and at least

one part-time or full time Occupational Safety Expert was required at industrial workplaces whereby 50 or more employees were employed.

Likewise, the OSH Law requires the employment of sufficient number of Occupational Safety Expert(s), occupational physicians and other healthcare staff who meet the criteria set out in the OSH Law and in the secondary legislation. These services can be 'in house' or they can be obtained from a Joint Occupational Health and Safety Unit (JOSHU) or from a Community Health Center established to provide OSH services upon the Ministry's authorization.
This requirement is applicable to all workplaces (not only the industrial ones) depending on the number of their employees and their hazard categories as follows:

All workplaces with 50 or more employees are currently required to employ sufficient number of Occupational Safety Expert(s), occupational doctor(s) and other healthcare staff or to obtain these services from a JOSHU on part time or full time basis depending on the number of their employees and their hazard categories.
Private entity hazardous or very hazardous workplaces with less than 50 employees will have to employ sufficient number of Occupational Safety Expert(s), occupational doctor(s) and other healthcare staff on part time or full time basis or to obtain these services from a JOSHU depending on their hazard categories and the number of their employees starting from 30 June 2013. After this date, the Ministry will provide financial aid for Occupational Health and Security Services to hazardous or very hazardous workplaces with less than 10 employees.
Slightly hazardous private entity workplaces with less than 50 employees and public entities require to employ sufficient number of Occupational Safety Expert(s), workplace doctor(s) and other healthcare staff or to obtain these services from a JOSHU on part time or full time basis depending on the number of their employees starting from 30 June 2014. After this date, the Council of Ministers will be authorized to resolve on provision of financial aid for Occupational Health and security services to slightly hazardous workplaces with less than 10 employees.
The method and the terms of employment of Occupational Safety experts are set out under the RoESE. Occupational Safety experts are classified as Group (A), (B) and (C) and should hold a valid license issued by the Ministry to serve in fulfillment of the health and safety requirements brought by the OSH Law and the secondary legislation. Sufficient number of Group (A) and/or Group (B) and/or Group (C) Occupational Safety Expert(s) should be employed depending on the number of employees and the hazard category of the workplace in question.

The requirement to employ sufficient number of occupational doctor(s) is currently regulated under the OSH Law. The method and the terms of their employment are still unclear since the secondary legislation on this issue is enacted.

c. Occupational Health and Safety Board

The Regulation on Occupational Health and Safety Boards requires that employers with 50 or more employees establish an Occupational Health and safety board ("Board") for their workplaces where continuous operations lasting more than 6 months are carried out. The Board aims to perform health and safety related actions and develop related processes. It should consist of the employer or the employer representative, the Occupational Safety Expert, the workplace doctor, an HR, social affairs or administrative/financial affairs representative, civil defense expert (if applicable), foremen representative (if applicable) and the employee representative or the head employee representative if there are more than one employee representatives. Employers are obliged to abide by and to apply all resolutions adopted by the Board as long as they are in line with the legislation.

If a subcontractor with more than 50 employees work at a workplace, then it must form its own Board. Subcontractors with less than 50 employees must be represented at the Board formed by the principal employer. If both a principal employer and its subcontractor(s) each have less than 50 employees but they cumulative have more than 50 employees, then they must form a common Board jointly.

d. Reporting and Recording Accidents and Occupational Sicknesses

Prior to the OSH Law, employers were obliged to report occupational accidents and occupational sicknesses to both the Social Security Institution ("SSI") and the related regional/provincial directorate of the Turkish Labor Agency ("TLA"). The OSH Law eliminated the requirement to report to the TLA. Yet, occupational accidents and occupational sicknesses still have to be reported online to the SSI within 3 days from the occupational accident date and the date that the occupational sickness has been diagnosed and reported to the employer, respectively.

Additionally, employees have to keep records of all accidents that occur at their workplaces even those not resulting in injury or death of an employee and should revise their risk assessments accordingly. It is sufficient for an accident to have caused certain damage at a workplace or over workplace equipment or to have the potential to cause damage to employees, a workplace or workplace equipment.

If certain life-threatening circumstances exist at a certain part or the whole of a workplace, then activities at the related part or the whole of such workplace should be ceased until the life-threatening circumstances are cured.

Sanctions and Penalties

Failure to abide by the requirements of the OSH Law may lead to various administrative fines. For instance failure to appoint sufficient number of workplace doctor(s) or Occupational Safety Expert(s) may lead to an administrative fine of TL 5,000 for each doctor or expert not employed for each month of non-employment; failure to make risk assessment may lead to an administrative fine of TL 3,000 for the first month and TL 4,500 for each consecutive month of failure; failure to abide by the decision to cease operations may lead to an administrative fine of TL 10,000 and failure to prepare a major accident prevention policy certificate and initiate operations without having a safety report approved by the Ministry may lead to an administrative fine of TL 50,000 and TL 80,000, respectively.

Considering the importance of health and safety at workplaces and the excessive administrative fines applicable to failure to abide by the OSH Law and the secondary legislation, it is vital to adopt the necessary resolutions and make necessary arrangements to fulfill the newly adopted health and safety requirements. Let's hope that all secondary legislation will be enacted soon so that employers can organize themselves accordingly and take necessary precautions to minimize their risks at their workplaces(Source:http://www.mondaq.com/turkey/x/249234/Health+Safety/General+Aspects+Of+Occupational+Health+And+Safety+In+Turkey).

Social Security System in Turkey

The social security system in Turkey is predominantly similar to Bismarck model, one of four basic insurance systems which are Continental Model (Bismarck), Liberalistic Model (Beveridge), Northern

European Model and Mediterranean Model. Bismarck Model refers to a system where the premiums paid over the wages of employees according to their insurance status are collected in a joint pool and the benefits are provided based on the paid premiums only when old-age pension is entitled. The amount of the benefits to be granted to the insurance holders in cases of retirement, accident and sickness varies by the income they previously had. The main actors in this system are employees, employers and representatives in public sector. This system has more regulatory measures in labor market than liberalistic system, which hinders labor market flexibility. Concordantly, strict rules and collective bargaining mechanisms have come to the fore.

Turkish Social Security System has also some elements of the Mediterranean Model as well as Bismarck Model. The Mediterranean Model is derived from the Continental Model and bears a resemblance to this model in the sense that the paid social insurance premiums provide a basis for future social security benefits. Another aspect of the Mediterranean Model similar to Turkish Model is the wideness of informal economy. For this reason, the system does not cover many people; however social risks are tried to be eliminated through family ties. This model has brought into prominence the concepts of traditional family and agricultural society; thus people are supported by their families without considering whether the state provides benefits or not in case of revenue loss or social risks.

By Social Security Reform, a number of structural changes have been made on Turkish social security system. A transition has been realized from the system which entitles various rights to different professional groups to the system which ensures the unity of standards and norms in terms of retirement insurance.

Having the aim to ensure the sustainability of the system, these structural changes have not led to deviation from the Mediterranean Model-Continental Model.

Social Security Reform

Since 1990s, a number of financial problems have been experienced in Turkish social security system due to various reasons such as early retirement implementations, high rates of unregistered employment and income replacement and low rates of premium collection and earning subject to contribution. This system does not include the entire population and not have adequate safeguards against poverty. The provision of services by different social security institutions in nonsystematic way hinders the unity of norms regarding rights and obligations of employees. It became compulsory to make reforms in social security system as a result of all these problems and ageing tendency of the population which is one of the major factors affecting the financial sustainability of the system.

For the purpose of restructuring the social security system, a reform was realized in 2008 when the Law No. 5510 entered into force for seeking solutions to the prominent problems such as the existence of increasing deficit of the system and different implementations that the institutions had in the provision of health and insurance services.

The primary aim of the social security reform is to create an equitable, easily-accessible and financially sustainable social security system that provides more effective protection from poverty.

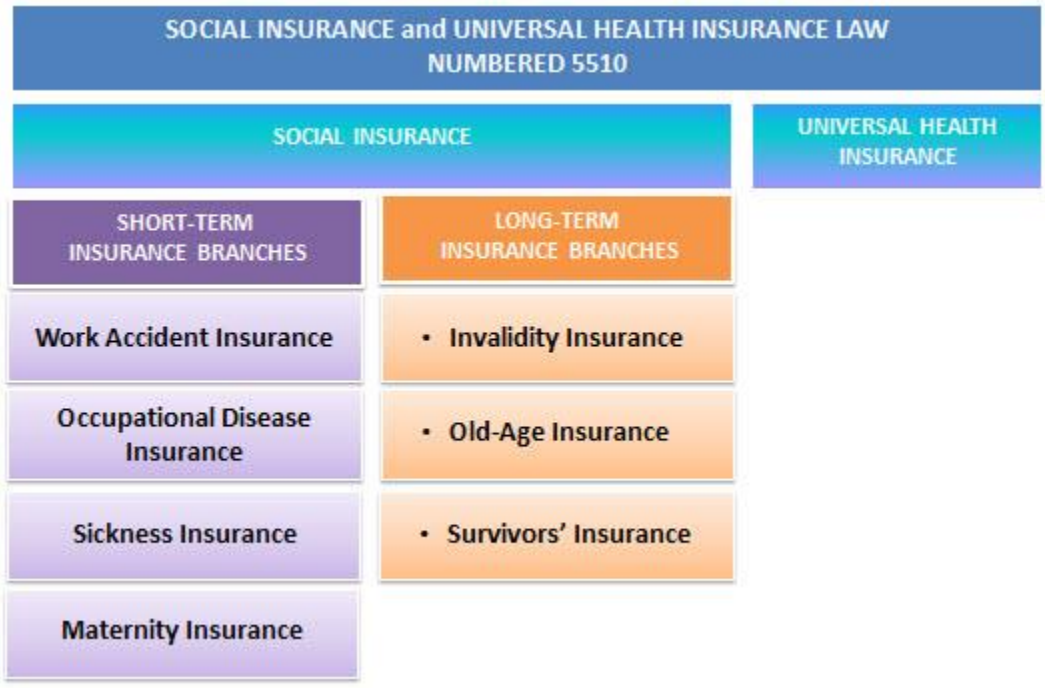
The social security reform consists of 4 complementary components:
1. Universal Health Insurance providing an equitable, protective and quality healthcare services for the entire population,

2. An aid system which enables all needers to access the services with the combination of non-contributory payments and social benefits provided
3. A single retirement regime including short and long term insurance branches apart from health insurance,
4. A new institutional structure facilitating daily life of our citizens through modern and efficient services.

The social security reform particularly includes the regulations regarding the enhancement of the retirement system and expenses. From this point of view, a set of changes have been made on pension replacement rate, updating coefficient, number of paid premium days and age parameters and a transition period has been envisaged. As the previous rules continue to be followed until the completion of transition period, the effect of these parametric changes on social security deficit cannot be seen exactly in the short term until the 2040s.

The reforms made up to now aim at increasing the services for insurance holders as well as removing defects in the social security system. In this context, various regulations have been made in the field of both health and retirement so that insurance holders can receive services at the shortest time. A number of implementations have been put into practice to facilitate insurance holders' access to hospital services and the relevant procedure requiring a long wait has started to be made on internet.

The primary objective in a people-oriented system is to provide services at local levels. For this reason, the system where services are provided from center has been left and Social Security Centers have been built in many districts with a view to enable insurance holders at local levels to receive services easily.



Turkey has an extensive statutory social security system based on solidarity.
The Turkish social security scheme is triggered upon the occurrence of three events:
• wage loss (e.g. unemployment, retirement, incapacity for work):

replacement income;
• social charges (e.g. sickness): income supplements;
• no earned income (outside the claimant's control): assistance allowances

The Turkish statutory social security system is divided into three schemes: • scheme for salaried persons (individuals who are linked to their employer by an employment agreement); • scheme for self-employed persons (individuals who perform their professional activities outside the scope of an employment agreement or appointed office); • scheme for civil servants (individuals who are subject to public service status) – not gone into in this country profile.

Contributions

Social security contributions are payable as a percentage of gross salary by individual employees and employers.

1. Salaried persons Social security contributions are due by both the employee and the employer. Employees' contributions are deducted from their gross salary, whilst employer contributions are paid on top of the gross remuneration. Currently, salaried persons pay 15% and employers pay 22.5% (regardless of the hazard class in the workplace) up to a maximum earnings level of TRY 6,961.50 a month for salaried persons between 1 January 2014 and 30 June 2014. Salaried persons' contributions are deductible when determining taxable income.
2. Self-employed persons The social security contributions for selfemployed persons are calculated between the applicable social security base and ceiling. Self-employed persons pay 34.5% (regardless of the hazard class in the workplace) up to a maximum earnings level of TRY 6,961.50 a month between 1 January 2014 and 30 June 2014. No unemployment contribution is paid for self-employed persons.

Benefits

1. **Health care (general health insurance)** Health care covers both preventive and curative care required for maintaining and restoring a person's health (e.g. ordinary medical care, dental care, hospital care). All medical treatment that is dispensed and that can be (partly or completely) reimbursed is listed in a 'nomenclature of medical treatment'. A number of conditions and criteria have to be met in order to have access to health care (e.g. a minimum 30-day contribution period applies to the scheme for both salaried and selfemployed persons, but the self-employed must also have had no outstanding contribution liability to a social security institution for more than 60 days). There are exemptions from these conditions (e.g. children under 18, work accidents and occupational diseases).
2. **Sickness benefits** When a person falls ill, in addition to health care, he or she will be entitled to benefits covering income loss. Salaried persons entitled to sickness benefits must meet certain conditions (e.g. a minimum coverage period of 90 days and payment of sufficient social security contributions). Patients are entitled to two-thirds of their normal daily gross salary when treated as outpatients, capped at TRY 154.70 (in the period between 1 January 2014 and 30 June 2014), and half of their daily earnings for inpatient treatment, capped at TRY 116,03 (for the period between 1 January 2014 and 30 June 2014) a day from the 3rd day onwards, which is paid by the Turkish Social

Security Institution without any deduction. The Institution does not pay any benefits for the first two days.

3. **Accidents at work** All salaried and self-employed persons are covered against accidents at work and accidents on the way to and from work.
   A victim of an accident at work is entitled to reimbursement for the costs of hospital care, physiotherapy, medical, surgical, dental and pharmaceutical care as well as orthopedic equipment. Care costs are reimbursed according to the applicable sickness social security tariffs and the social security institution has to pay the patient fee. Victims are entitled to two-thirds of their normal daily gross salary for outpatient treatment, capped at TRY 154.70 (in the period between 1 January 2014 and 30 June 2014), and half of their daily earnings for inpatient treatment, capped at TRY 116.03 (in the period between 1 January 2014 and 30 June 2014) a day for, which are paid by the Turkish Social Security Institution without any deduction. Victims are also entitled to permanent incapacity income if their occupational earning power is deemed by the authorities to have been reduced by 10% according to reports on the illness or disability caused by a work accident or occupational disease.
4. **Occupational disease** There is a list of diseases acknowledged as occupational diseases. If a person falls victim to an occupational disease included in the list occurs and works in a sector in which he or she is exposed to a risk that can cause that disease, it will be acknowledged as an occupational disease if the victim submits a hospital report proving the existence of the occupational disease. For unlisted occupational diseases, the victim has to prove that he/she was exposed to a risk and the causal link between the disease and the exposure. Victims are entitled to two-thirds of their normal daily gross salary for outpatient treatment, capped at TRY 154.70 (in the period between 1 January 2014 and 30 June 2014) and half of their daily earnings for inpatient treatment, capped at TRY 116.03 (in the period between 1 January 2014 and 30 June 2014) a day, which are paid by the Turkish Social Security Institution without any deduction. Victims are also entitled to permanent incapacity income if their occupational earning power is deemed by the authorities to have been reduced by 10% according to reports on the illness or disability caused by a work accident or occupational disease.
5. **Maternity benefits**
   Pregnant women are entitled to maternity leave of 16 weeks and an allowance during that leave.
6. **Unemployment**
   Replacement income may be claimed in the case of involuntary loss of salaried employment. To be eligible for unemployment benefit, certain conditions have to be met (e.g. the claimant may not receive any salary or perform work in any workplace, unemployment must be out of the claimant's control, the claimant must be available for the labour market, fit for work). However, there are exceptions to these conditions. Furthermore, the claimant must comply with certain formalities (e.g. applying to the İŞ-KUR agency, declaring that he/she is ready to work, must have worked as a social security holder for at least 600 days in the last three years, worked continuously and paid premiums for the last 120 days prior to leaving his/her job). The daily unemployment benefit is 40% of the claimant's previous daily gross wage, calculated taking his/her earnings over the last four months as a basis. Unemployment benefits are paid to unemployed workers on a monthly basis at the end of each month. Unemployment benefits may also not exceed 80% of the gross minimum wage.
7. **Disability** benefit is awarded to victims of a work accident or occupational disease resulting in a minimum of 60% disability. Certain conditions must be met (e.g. number of days of paid premiums, length of period, disability status/rate). Disability benefit is calculated according to the number of premium-paid days that eligible workers have

worked. For workers for which this number is less than 9,000, the benefit is calculated as 9,000 days, while for those who have tallied up 9,000 days or more, the benefit is calculated according to the actual number of premium-paid days. For current workers, however, the 9,000 figure is reduced to 7,200.

8. **Survivors' benefits** Persons who have lost their partner are entitled to survivors' benefits. Children who have lost one or both of their parents are also entitled to survivors' benefits. A number of conditions and criteria have to be met in order to claim survivors' benefits (e.g. a minimum of 1,800 days of disability, retirement (old-age) and survivors' premiums should have been paid; salaried persons must have had social security status for at least five years (this does not apply to other, selfemployed workers); and a total of 900 days of disability, retirement and survivors' premiums should be paid). The total benefit payable is capped at the amount of pension of the deceased. If necessary, proportional reductions will be made to the pensions of claimants in application of this limit.
9. **Retirement** Retirement pension is a benefit that eligible workers are entitled to base on their social security coverage period, the number of premium-paid days, their age, and the date when they started paying into the scheme. The normal retirement age in Turkey is 58 for women and 60 for men (although it will gradually increase to 65 for both women and men in 2036). A civil servant or self-employed person currently has to work 9,000 days and a salaried person 7,200 days in order to be entitled to a full pension. The current amount of retirement pension varies since the calculation is very complex and should be done according to an individual's social security status and history (e.g. social security period, age and number of premiumpaid days, social security start date, earnings subject to contribution).

   Contributions paid by employers and employees are collected by the Turkish Social Security Institution for both salaried persons and self-employed persons.

APPENDIX 4: Report on "Occupational Diseases Awareness Training Workshop" (26-27 January)

Provided by Occupational Health and Safety Department of PHIT

AIM of the Workshop :

It was aimed to evaluate the existing trainings and Durng the "Occupational Diseases Awareness Training Workshop" . After the evaluation. it was dicussed how to plan the future trainings, methods, content etc. in order to give quick and effective trainings to different target groups.

GROUP 1

Topics for Occupational physicians training

1. Work environment and their effects on human health.
2. Risk assessment of workplace and Importance and management.
3. The meaning of health surveillance in the workplace. (Importance of the recruitment examination of the profession history, after the accident, after the disease incipience examination)
4. patients with suspected occupational disease (MANAGEMENT) (referred to the medical board operations and training)
5. legislative and legal aspects of the diagnosis of occupational diseases.

Topics for Family Physicians Training

1. Working environment and effects on human health.
2. Approach to occupational disease. (occupational history)
3. Management of patients with suspicion of occupational disease. (referral process)
4. Regulatory and legal context of the diagnosis of occupational diseases.

Topics for Specialialist MD Training

1. Occupational health problems specific to their area of expertise and occupation related risks.
2. Management of patients with suspicion of occupational disease. (Writing a report, notification and referral Process)

TRAINING METHODS

1. Face-to-face training.
2. Using E-learning System for some requested training subjects.
3. To provide collaboration with key people related to their field of expertise in order to ensure awareness.

EVALUATION of the TRAINING

1. Doing Pre-test post-test
2. Evaluation of the results.
3. Comparison of the rate of referral of cases of occupational disease before and after training

GROUP 2:

I. DEVELOPMENT OF STANDARD TRAINING MODULES

a - Content: through the needs:
(Recommendation 11 module)
i - Common issues (3 hours) (1, 2, 3)
- In the field of OSH rights and obligations, relevant legislation
- definition and importance of Occupational Disease (OD)
- detection and notification phases of OD
ii - Special topics of Branches (+ common issues)

Training For Clinician (2 Hours)((special course will be given by the relevant branches specialist)
-- preparation specific case examples and disgussion together specialist and clinician

iii-Topics for Occupational Doctor of PHIT and others (2 hours) (6, 7) (+ common issues)

- Approach to endemic occupational diseases
- RD and ambient measurements

iv- Topic for Family physicians (2 hours) (8, 9) (+ common issues)

- The importance of vocational history
- Employee and their family (wife kids relatives) health or disease monitoring. And keep record their data.
- Approach to frequent occupational diseases

v- Topic for Health Managers (1 hour) (10)

Ministry of Health powers and responsibilities of OSH

Vİ-Topic for Employers (1 hour) (11)

- The employer's rights and obligations of OSH and its related legislation

II- THE TRAİNİNG OF THE TRAİNEE TEAM

Cooperation with specialist associations (Association of Business and Professional Disease Specialists, Turkey Respiratory Society, Turkish Thoracic Society, the Association of Public Health Professionals, Association of Commercial Physicians, the Association of Family Physicians)

a: Content: 2 day introductory of modules, 1 day training skills training will be given .

b: Method: The trainers will be doctors. Trainers are required to have received training of trainers. Trainers must be voluntary .Trainer fee must be paid. Enough trainer numbers is determined for 5 region where the necesseties have. On each region, training trainee will be given. After the course "**Certificate of OD Awerenes trainer"** will be provided by the organisation. Through the feedback modüle content would be periodically update.

c: Rating: pretest, posttest and satisfaction will be asked and evaluated.

III-TARGET GROUP TRAİNİNG

Target group: Clinicians, occupational Doctors, Occupational physicians and other physicians of Community Health Center of PHIT and assistants, health care administrators, employers, family physicians,

a- Content:

Common title (3h) (1, 2, 3)
Special topics sectors (4, 5)
OD of PHIT (2 hours) (6, 7)
Family physicians (2 hours) (8, 9)
Leaders (1 hour) (10)
Employers (1 hour) (11)

b Method:

Provincial Public Health Directorate of each province will chose the participant of training. The method is chosen by the each province trainers. Appropriate İnteractiv adult education technics will be used at the training. Each Province Public Health Directorate and Public Hospital Directorates are responsible Ensuring the participation and contunuing the training. Visual and written material especialy guides should be presented to the participants. Each session will be maximum 40 person and 50 minute.

c .Evaluation: pretest, posttest, satisfaction survey.

GROUP 3

1. The definition of the target group of Averenes Training

- Family physicians and family medicine specialists
- 2nd and 3rd steps Medical Doktors

EDUCATION PROGRAM (for occupational physicians)		
TIME	TOPIC	TRAINER
09:00-09:45	-OD current situation in TURKEY -study on case examples	
09:45-10:30	- general approach of occupational Patient - Patient file content of Occupational patient Social Security Institution mission and responsibility. - Social Security Institution structure and operation - OD Application? Occupational Disease Committee tasks	
10:30-10:45	Coffe Break	
10:45-11:30	- importance of Patient history -Anamnese Making techniques -Exposures Sectoral approaching -The relationship between chronic diseases and Occupational disease	
11:30-12:15	Risk assesment, environmental monitoring, occupational hygiene related OD.	
12:15-13:00	Occupational diseases in the laboratory (Public Health Laboratory, the Occupational Health and Safety Research and Development Institute Department, Service Procurement)	
13:00- 13:30	Discussion	
13:30-14:30	LUNCH	

- Occupational physicians.

TRAİNİNG PROGRAM (for clinicians)		
TIME	TOPIC	TRAINER
09:00-09:45	-OD current situation in TURKEY -Study case example	
09:45-09:30	- General approach of occupational patient - Patient file content of Occupational patient Social Security Institution mission and responsibility. - Social Security Institution structure and operation -OD Application? -Occupational Disease Committee tasks	
10:30-10:45	Coffe Break	

10:45-11:30	- importance of Patient history -Anamnez Making techniques -Exposures Sectoral approaching -The relationship between chronic diseases and Occupational disease	
11:30-12:15	- Occupational diseases in the laboratory (Public Health Laboratory, the Occupational Health and Safety Research and Development Institute Department, Service Procurement)	
12:15-13:00	Discussion	
13.30-14.30	Luch	

EVALUATION METHODS

1- Surveillance study can be done in the way of access to the size of a representative sample of the target audience in order to assess the outlook for Turkey in occupational diseases
2- Before and after a short training, conducting test applications involving understandable questions..
3- The number of people given training
4- Monitoring the number of occupational disease declaration made by the Social Security Administration
5- The number of the diagnosis of occupational diseases from the relevant institutions of the Ministry of Health and the State University Hospital
6- Increasing the number of notifications of total preliminary diagnosis of occupational diseases

RESULT

Working Group 1

Occupational diseases would be appropriate to separately planning to target groups of awareness training, these groups emphasized the necessity of giving priority to occupational physicians.
Target group of occupational diseases awareness training (occupational physicians, family physicians, physicians branches) would be appropriate to separate the planning, giving priority to occupational physicians in these groups are identified.
For educational content especially and primarily for occupational physicians implementation of questionnaire and focused on planning requirements based on these results for content.
Legislative and legal aspects of occupational diseases diagnosed as a partner for the educational content, occupational disease diagnosis process management (referral and health board operations education) also health problems for the profession of history and expertise for the target group and is thought to be appropriate to the occupational risks related narratives.
Be carried out by the central government of planning and organization for occupational physicians and family physicians, for the training of specialist doctors the activities of specialist associations, educational institutions responsible for or benefiting from other local trainers have been suggested to be determined.

Working Group 2

The expectations and content needs to be taken of demand by implementation of questionnaire on the internet to determine the content.(The Ministry of Health administrators, provincial directors, hospital administrators, specialist associations and related associations have a priority) As well as physicians health managers and employers are proposed to be included in this training.
The preparation of training modules by two people, testing a sample of the necessity of the creation of the educational team made module emphasizing cooperation with specialist associations in the

process, (Work and Professionals Association of Occupational Diseases, Respiratory Society of Turkey, the Turkish Thoracic Society, the Association of Public Health Professionals, Occupational physician Association, the Association of Family Physicians, specialist associations) the remuneration of trainers, for evaluation pre-test and post-test and satisfaction questionnaires have been proposed.
To increase the prevalence and effectiveness of the ongoing work learning goals in line (Community Health Center and family physicians have a priority) performance applications is proposed.

Working Group 3
Each region is organise half day awarenes training. And participant is choosen volunter health manager, physician, medical doctor etc from near province in Turkey. Providing Avarenes of OD, Training Team should be supported Public Health Directorate of each province, Publich Hospital İnstitution. Also its very important that spreading awareness,and sensitivity, Training trainee team is consisted of Chamber of some job and specialist associations.
Because of Large scoop or area Distance Education Model (e-learning)" has been recomended.

Frequent OD is requirred special brances additional training (EarNoseTroath, infectious diseases, psychiatry, pediatrics, has stated it would be appropriate to include the branch.
for all branches;
Occupational diseases in Turkey
general approach of Occupation patients
The diagnosis of occupational disease areas What are the patient's file content?
What is the structure of the Social security and functioning?
How Occupational disease application
Occupational diseases committee and its tasks.
The importance of Occupation Patient history.
Occupational Diseases in the laboratory (Public Health Laboratory, the Occupational Health and Safety Research and Development Institute Department, Service Procurement) training have been proposed

Appendix 5: ICD 10 matching system

Source: Ankara Occupational Diseases Hospital

ICD-10 KOD	ICD-10 OCCUPATIONAL DISEASE
A00	Kolera
A00.0	Kolera, Vibrio Cholorea 01, Biovar Kolera'ya Bağlı
A00.1	Kolera, Vibrio Cholerae 01, Biovar Eltor'a Bağlı
A00.9	Kolera, Tanımlanmamış
A01	Tifo Ve Paratifo
A01.0	Tifo
A01.1	Paratifo A
A01.2	Paratifo B
A01.3	Paratifo C
A01.4	Paratifo, Tanımlanmamış
A02	Salmonella Enfeksiyonları, Diğer
A02.0	Salmonella Enteriti
A02.1	Salmonella Septisemisi
A02.2	Salmonella Enfeksiyonları, Lokalize
A02.8	Salmonella Enfeksiyonları, Diğer Tanımlanmış
A02.9	Salmonella Enfeksiyonu, Tanımlanmamış
A03	Şigelloz
A03.0	Şigelloz, Shigella Dysenteriae'ye Bağlı
A03.1	Şigelloz, Shigella Flexneri'ye Bağlı
A03.2	Şigelloz, Shigella Boydii'ye Bağlı
A03.3	Şigelloz, Shigella Sonnei'ye Bağlı
A03.8	Şigellozlar, Diğer
A03.9	Şigelloz, Tanımlanmamış

A04	**Bakteriyel Barsak Enfeksiyonları, Diğer**
A04.0	**Enteropatojenik Escherichia Coli Enfeksiyonu**
A04.1	**Enterotoksijenik Escherichia Coli Enfeksiyonu**
A04.2	**Enteroinvaziv Escherichia Coli Enfeksiyonu**
A04.3	**Enterohemorajik Escherichia Coli Enfeksiyonu**
A04.4	**Barsak Escherichia Coli Enfeksiyonları, Diğer**
A04.5	**Kampilobakter Enteriti**
A04.6	**Yersinia Enterocolitica'ya Bağlı Enterit**
A04.7	**Clostridium Difficile'ye Bağlı Enterokolit**
A04.8	**Bakteriyel Barsak Enfeksiyonları, Diğer Tanımlanmış**
A04.9	**Bakteriyel Barsak Enfeksiyonu, Tanımlanmamış**
A05	**Bakteriyel Gıda Zehirlenmeleri, Diğer, Başka Yerde Sınıflanmamış**
A05.0	**Gıda Kökenli Stafilokok Zehirlenmesi**
A05.1	**Botulizm**
A05.2	**Gıda Kökenli Clostridium Perfringens [Clostridium Welchii] Zehirlenmesi**
A05.3	**Gıda Kökenli Vibrio Parahaemolyticus Zehirlenmesi**
A05.4	**Gıda Kökenli Bacillus Cereus Zehirlenmesi**
A05.8	**Gıda Zehirlenmeleri, Diğer Tanımlanmış**
A05.9	**Bakteriyel Gıda Zehirlenmesi, Tanımlanmamış**
A06	**Amebiyaz**
A06.0	**Akut Amipli Dizanteri**
A06.1	**Kronik Barsak Amebiyazı**
A06.2	**Dizanterik Olmayan Amipli Kolit**
A06.3	**Ameboma, Bağırsakta**
A06.4	**Amipli Karaciğer Apsesi**
A06.7	**Kutanöz Amebiyaz**
A06.8	**Amip Enfeksiyonu, Başka Bölgelerin**

A06.9	**Amebiyaz, Tanımlanmamış**
A07	**Protozoal Diğer Barsak Hastalıkları**
A07.0	**Balantidiyaz**
A07.1	**Giardiaz [Lambliaz]**
A07.2	**Kriptosporidiyoz**
A07.3	**İzosporiyaz**
A07.8	**Barsağın Protozoal Diğer Tanımlanmış Hastalıkları**
A07.9	**Barsağın Protozoal Hastalığı, Tanımlanmamış**
A08	**Viral Ve Diğer Tanımlanmış Barsak Enfeksiyonları**
A08.0	**Rota Virüs Enteriti**
A08.1	**Norwalk Ajanına Bağlı Akut Gastroenteropati**
A08.2	**Adenovirüs Enteriti**
A08.3	**Viral Enteritler, Diğer**
A08.4	**Viral Barsak Enfeksiyonu, Tanımlanmamış**
A08.5	**Barsak Enfeksiyonları Diğer, Tanımlanmış**
A09	**Diyare Ve Gastroenterit, Enfeksiyöz Kaynaklı Olduğu Tahmin Edilen**
A15	**Solunum yolları tüberkülozu, bakteriyolojik ve histolojik olarak kanıtlanmış**
A16	**Solunum yolları tüberkülozu, bakteriyolojik ve histolojik olarak kanıtlanmamış**
A17	**Sinir sistemi tüberkülozu**
A18	**Organların tüberkülozu, diğer**
A19	**Miliyer tüberküloz**
A21	**Tularemi tümü**
A22	**Şarbon tümü**
A23	**Bruselloz tümü**
A26	**Erizipeloid**
A26.0	**Kutanöz Erizipeloid**
A27	**Leptospiroz tümü**

A35	**Tetanoz, diğer**
A69.2	**Lyme hastalığı**
A70	**Klamidya psittaci enfeksiyonu**
A71	**Trahom**
A71.0	**Trahom başlangıç dönemi**
A71.1	**Trahom aktif dönemi**
A71.9	**Trahom, tanımlanmamış**
A74	**Klamidyal diğer hastalıklar**
A77	**Benekli humma [kene ile taşınan riketsiyozlar]**
A78	**Q ateşi**
A82	**Kuduz**
A84	**Viral ensefalitler, kene ile taşınan**
A98	**Viral hemorajik ateşler, diğer, başka yerde sınıflanmamış**
A98.0	**Kırım-Kongo hemorajik ateşi**
A98.5	**Hemorajik ateş, renal sendromla beraber**
B01	**Varisella [su çiçeği]**
B05	**Kızamık**
B16	**Akut hepatit B**
B17	**Akut viral hepatitler, diğer**
B17.0	**Akut hepatit C**
B17.1	**Akut hepatit E**
B24	**İnsan immünyetmezlik virüsü [HIV] hastalığı, tanımlanmamış, başka yerde sınıflanmamış**
B35.1	**Tinea Unguium**
B35.3	**Tinea Pedis**
B38	**Koksidioidomikoz**
B39	**Histoplazmoz**

B42	**Sporotrikoz**
B58	**Toksoplazmoz**
B65	**Siştozomiyaz**
B67	**Ekinokokoz**
B76	**Kancalı kurt hastalıkları**
B76.0	**Ankilostomiyaz**
C22	**Karaciğer ve intrahepatik safra yolları malign neoplazmı**
C22.3	**Karaciğerin anjiosarkomu**
C30	**Burun boşluğu ve ortakulak malign neoplazmı**
C30.0	**Burun boşluğunda malign neoplazm**
C32	**Larinks malign neoplazmı**
C32.0	**Glottis Malign Neoplazmı**
C32.1	**Supraglottis Malign Neoplazmı**
C32.2	**Subglottis Malign Neoplazmı**
C32.3	**Larinks Kıkırdağı Malign Neoplazmı**
C32.8	**Larinksin Overlapping Lezyonu**
C32.9	**Larinks Malign Neoplazmı, Tanımlanmamış**
C34	**Bronş Ve Akciğer Malign Neoplazmı**
C34.8	**Bronş Ve Akciğer Overlapping Lezyonu**
C34.9	**Bronş Veya Akciğer Malign Neoplazmı, Tanımlanmamış**
C40	**Ekstremite Kemik Ve Eklem Kıkırdağının Malign Neoplazmı**
C41	**Kemik Ve Eklem Kıkırdağının Malign Neoplazmı, Diğer Ve Tanımlanmamış Bölgelerin**
C44	**Derinin Diğer Malign Neoplazmları**
C45	**Mezotelyoma**
C45.0	**Plevra Mezotelyoması**
C45.1	**Periton Mezotelyoması**

C45.2	**Perikard Mezotelyoması**
C45.7	**Mezotelyoma, Diğer Yerlerin**
C45.9	**Mezotelyoma, Tanımlanmamış**
C67	**Mesane Malign Neoplazmı**
C67.0	**Mesane Trigonu Malign Neoplazmı**
C67.1	**Mesane Kubbesi Malign Neoplazmı**
C67.2	**Mesane Yan Duvarı Malign Neoplazmı**
C67.3	**Mesane Ön Duvarı Malign Neoplazmı**
C67.4	**Mesane Arka Duvarı Malign Neoplazmı**
C67.5	**Mesane Boynu Malign Neoplazmı**
C67.9	**Mesane Malign Neoplazmı, Tanımlanmamış**
C91	**Lenfoid Lösemi**
C91.0	**Akut Lenfoblastik Lösemi**
C91.1	**Kronik Lenfositik Lösemi**
C91.2	**Subakut Lenfositik Lösemi**
C91.3	**Prolenfositik Lösemi**
C91.4	**Saçlı Hücreli Lösemi**
C91.5	**Yetişkin T-Hücreli Lösemi**
C91.7	**Lenfoid Lösemiler, Diğer**
C91.9	**Lenfoid Lösemi, Tanımlanmamış**
C92	**Myeloid Lösemi**
C92.0	**Akut Myeloid Lösemi**
C92.1	**Kronik Myeloid Lösemi**
C92.2	**Subakut Myeloid Lösemi**
C92.3	**Myeloid Sarkoma**
C92.4	**Akut Promyelositik Lösemi**
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T51.2 **2-Propanolün toksik etkisi**

T51.3 **Yağ karışımlarının toksik etkisi (amil, butil, propil alkol)**

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T52.4 **Ketonların toksik etkisi**

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T52.9 **Organik çözücünün toksik etkisi, tanımlanmamış**

T53 **Alifatik ve aromatik hidrokarbonların halojen türevlerinin toksik etkisi**

T53.0 **Karbon tetrakloridin toksik etkisi**

T53.1 **Kloroformun toksik etkisi**

T53.2 **Triklor etilenin toksik etkisi**

T53.3 **Tetrakloretilenin toksik etkisi**

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T53.7 **Aromatik hidrokarbonların diğer halojen türevlerinin toksik etkisi**

T53.9 **Alifatik ve aromatik hidrokarbonların halojen türevlerinin toksik etkisi, tanımlanmamış**

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T54.9 **Aşındırıcı maddenin toksik etkisi, tanımlanmamış**

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T56.8 **Metallerin toksik etkisi, diğer**

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T57.1 **Fosfor ve bileşenlerinin toksik etkisi**

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T57.3 **Hidrojen siyanidin toksik etkisi**

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