

- If a teaching institution is found from the evaluation and review made according to clause (c) to have failed to meet the standards determined by the council, to make a recommendation for revoking the approval for operation of such institution.
- To determine the qualifications of the health professionals and to issue certification to the qualified health professional after registering his /her name in the registration book,
- To determine the work limit of health professionals,
- To formulate a professional code of conduct for health professionals and to take action against those health professionals who violate such code of conduct.

3. National occupational safety and health profile of Nepal

Occupational health is an area of work in public health to promote and maintain the highest degree of physical, mental and social well-being of workers in all occupations. The science and practice of occupational health involve several disciplines, such as occupational medicine, nursing, ergonomics, psychology, hygiene, safety and others. Occupational safety and health (OSH) are crucial for ensuring workplace efficiency and productivity. Emerging occupational health problems are to be tackled along with the existing public health problems like communicable and non-communicable diseases. However, the epidemiological profile and analysis of occupation exposure and disease are few and far between, which is limited to some major injuries and deaths. Often, these injuries and deaths are not reported to the national system due to weak monitoring and evaluation systems, especially in countries like Nepal.

3.1 Authority or Body, Responsible for Occupational Safety and Health

The Ministry of Labour, Employment, and Social Security is the apex body for national Occupational Safety & Health (OSH) supervision and administration in Nepal. There are four divisions in the Ministry of Labour, Employment, and Social Security. The joint secretary is the chief of each division. According to the job description of the Child Labour and Occupational Safety and Health section, functions related to OSH are given to this section. The Undersecretary technical (Mechanical Engineer) is the chief of this section. There is one factory inspector (Mechanical Engineer) and one section officer in this section. There are only three staff (including the undersecretary) posted in this section. According to the job description of this section, Child labour-related works are also assigned to this section. This section is responsible for OSH-related works in addition to a broader set of works related to labour management. The main enforcement body at the local levels and the specified areas are the Labour and Employment offices. The major activities carried out by these offices are monitoring the labour relations occupational safety and other health aspects in the establishment and enterprises as specified under the legislation. The Labour and Employment Offices at the local levels are headed either by the Labour Officer or the Factory inspector. The other staff members to support the activities of these offices are the non-gazetted officers and the assistants. OSH seems a less priority area for the Ministry of Labour, Employment, and Social Security. Due to lack of priority, the institutional structure for OSH Supervision and Administration seems weak with a severe lack of human resources and includes only 3 staff (joint secretary 1, undersecretary technical 1, and factory inspector 1) responsible for OSH Supervision and Administration.

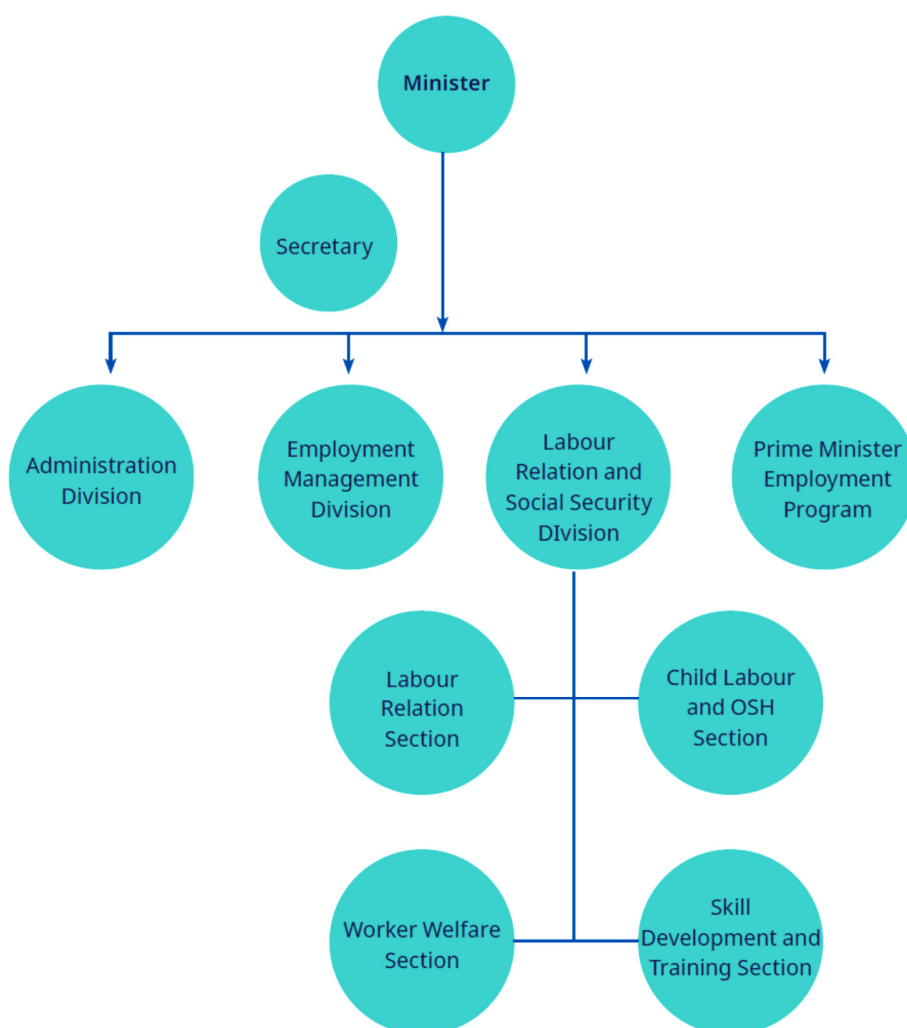


Figure: 1 Occupational Safety and Health Organization in Nepal

Table 3: List of universities and other academic institutions related to OSH

Institutions	Affiliations	Courses	Thesis on Occupational Health and Safety
1. Kathmandu University School of Medical Sciences	Kathmandu University	MD Community Medicine	Yes
		MSc in Public Health	
2. Manipal College of Medical Sciences	Kathmandu University	MD Community Medicine	Yes
3. College of Medical Sciences, Bharatpur	Kathmandu University	MD Community Medicine	Not done till now

4. Kathmandu Medical College, Kathmandu	Kathmandu University	MD Community Medicine	Yes
5. Nepal Medical College, Kathmandu	Kathmandu University	MD Community Medicine	Not done till now
6. Nepalgunj Medical College, Nepalgunj	Kathmandu University	MD Community Medicine	Not done till now
7. Nobel Medical College, Biratnagar	Kathmandu University	MD Community Medicine	Not done till now
8. Lumbini Medical College	Kathmandu University	MD Community Medicine	Not done till now
9. BP Koirala Institute of Health Sciences, Dharan	BPKIHS	MD Community Medicine	Yes
		Masters in Public Health	
10. Institute of Medicine, Kathmandu	Tribhuvan University	Masters in Public Health	Yes
11. KIST Medical College	Tribhuvan University	Masters in Public Health	Not done till now
12. Universal College of Medical Sciences, Bhairahawa	Tribhuvan University	Masters in Public Health	Not done till now
13. Chitwan Medical College, Bharatpur	Tribhuvan University	Masters in Public Health	Not done till now
14. Gandaki Medical College, Pokhara	Tribhuvan University	Masters in Public Health	Not done till now
15. Manmohan Medical Institute of Health Sciences, Kathmandu	Tribhuvan University	Masters in Public Health	Not done till now
16. Patan Academy of Health Sciences, Lalitpur	PAHS	Masters in Public Health	Not done till now
17. School of Health and Allied Sciences, Kaski	Pokhara University	MPH (Public Health and Services Management)	Not done till now
		MPH (Health Promotion and Education)	
		Promotion and Education)	
18. Nobel College, Kathmandu	Pokhara University	MPH (Public Health and Services Management)	Not done till now
		MPH (Health Promotion and Education)	
19. Himalayan Institute of Science and Technology, Kathmandu	Purbanchal University	M.Sc. (Engineering Management)	Done
20. Nepal Engineering College, Centre for Post Graduate Studies, Lalitpur	Pokhara University	M.Sc. (Construction Management)	Done
21. Central Department of Environmental Science	Tribhuvan University	PhD in Occupational and Environmental (Road Safety)	Done

		M.Sc. Environment Science (OHS management Course)	
		M.Sc. Environmental	
		Health in Disaster	

(13)

3.2 Mechanisms for ensuring compliance including the systems of inspection

The Labour Act 2017 in its section 12 relates to occupational safety and health provisions and the provisions are stated in clauses 68 to 83. The Act defines the roles responsibilities and procedures for the factory inspection. Structure and Activities of Labour and Employment Office (LEO) on OSH The first labour office in Nepal was established in 1970 at Biratnagar under the then Department of Industry. With the formation of the Department of Labour in 1981 under the ministry of labour and social welfare, there were very few labour offices and the number simultaneously increased to ten labour offices throughout the country by 1990. The current offices have been named as Labour and Employment Office (LEO) since 2017 with the revised organizational structure. The number of staff at the Labour office has been increasing as they also need to work along with the issuance of foreign employment permits. Labour and employment offices are working to protect employees' rights by settling individual complaints filed by the worker as per the Labour Act 2017 and participatory collective bargaining. Labour and Employment Offices aim to ensure justice, promote OSH and foster harmony between workers and employers for good industrial relations towards sustainable industrial growth in the country. LEOs are responsible for factory inspection to ensure that enterprises comply with the OSH provisions stated by the Labour Act 2017 and Labour regulations. LEOs are also responsible for labour inspection to ensure the types of employment and employment contracts, guaranties of stated minimum wages, and social security provisions such as provident funds, gratuity, and insurance to the workers. LEOs and their factory inspectors are also liable to ensure appropriate Occupational Safety and Health conditions for the workers to protect from work-related hazards and risks on their constraining resources provided. Also, LEOs are assigned to register enterprise-level trade unions and conduct their union election to ensure workers enjoy the right of freedom of association and the right for collective bargaining. The LEOs are also responsible for acting on the assignment and activities stated.

3.3 Occupational health services including industrial hygiene

The Occupational Safety and Health Center used to provide industrial hygiene services such as measuring light, noise, sound, and dust in the factories based on their annual work plan. However, now due to the lack of adequate equipment and human resources, the service is currently outsourced. The basic Occupational Safety and Health Services include the following major criteria:

1. Surveillance of work environment and risk assessment.
2. Health surveillance and health examinations.
3. Advice on preventive and control measures.
4. Health education, health promotion, and promotion of workability.
5. Maintaining preparedness for first aid and participation in emergency preparedness.
6. Diagnosis of occupational diseases.
7. Record keeping

The Labour Act 2017 of Nepal ensures the provision of first aid in industrial enterprises with more than 50 employees and the requirements of an academically trained medical assistant in the case of industrial enterprises with more than 400 workers. If an industrial enterprise has more than 1,000 employees, a medical doctor and a medical assistant are required. Many registered health centres in Nepal provide health care services including Occupational Health Services to the employees of different workplaces under a memorandum of understanding between those institutions. However, their services are limited to the

diagnosis and treatment of the diseases of the workers. Some of the institutions like BPKIHS have established the Department of Environment and Occupational Health under the School of Community Medicine which provides health screening program in some of the industries in the Dharan, Biratnagar Industrial Corridor. Though Nepal is a signatory to the UN High-Level Meeting political declaration on Universal Health Coverage, there is no provision yet for the standard occupational health services in the industries and enterprises in Nepal.

3.4 List of occupational health service providers and their service contents

To date, there are no specialized health service providers in Nepal offering their targeted services related to Occupational Safety and Health. Although, the Occupational Safety and Health Center is the apex body for providing these basic occupational health services among other services, currently lacks trained human resources and advanced monitoring equipment. The Center has not been rendering these services currently, But a few private institutions are known to provide fragmented occupational health services such as health screening, diagnosis, workplace monitoring, etc

3.5 Certification for Occupational Health Practitioners

There are no medical schools that specialize in occupational health in the country. There is no certification system for occupational health practitioners. However, different universities, autonomous institutions and affiliated colleges provide courses such as MPH/ MD Community Medicine /MSc/ ME where student conducts thesis work on occupational health and safety-related topics

3.6 Provision of OSH training

Occupational Safety and Health Project (OSHP), Bhaishepati, since its inception in 1995 under the Ministry of Labour and Transport Management, has been conducting various types of capacity-building training programs in the field of occupational safety and health. OSHC by now, since its establishment, has provided training at the centre and provincial level and or factory site for more than 11 thousand workers, employees, and government officers. Each year, under the annual program and activities, this project conducts the following training program. The course contents and structure for the training are listed as under: a) Advanced training on OSH for 14 days. b) Boiler Safety and Operation Management for 14 days and 7 days modules. c) 4 days of training on OSH. d) 4 days of training on OSH for government employers. e) Hazard analysis and risk assessment training. f) Basic awareness training on OSH. g) Training material, poster, and leaflet development. h) OSH awareness program and seminar in each province or region. i) OSH awareness sector-specific programs.

3.7 Non-Governmental OSH Organization

There are few Non-Governmental OSH Organizations in Nepal. The Occupational Health and Safety Society of Nepal is a society of researchers and professionals in the field of OHS in Nepal. The society publishes the International Journal of Occupational Safety and Health (IJOSH) since 2011. IJOSH is an international peer-reviewed, indexed, open-access journal covering occupational health and safety-related disciplines. IJOSH is published half-yearly. It provides occupational health physicians, doctors, nurses, engineers, ergonomists, and a wide range of occupational hygiene, health and safety professionals with a dependable single source of proficiently written legal, practical and management occupational health information. Occupational Safety and Health Professionals Nepal is a national organization of OHS professionals in Nepal. Its core objectives are to promote occupational health and safety in workplaces in Nepal and to form a learning, sharing and networking platform for OSH Development in Nepal. It also promotes the sharing of ideas, opinions, knowledge, skills, various issues, experiences, and relevant information in the field of OSH.

3.8 Mechanism for the collection and analysis of data on occupational injuries and diseases and their causes

The Labour and Employment Offices (LEO) are entitled to collect and analyze data on occupational injuries, diseases, and their causes. The data gap majorly exists due to poor monitoring and supervision of the factory inspectors and lack of adequate accident recording and reporting systems. As per the Labour Act 2017, the employers are responsible for reporting the occurrence of any accident in their enterprises to the respective Labour and Employment Office and also informing employees at their enterprise. The Labour and Employment Office is obliged to make further investigations of the incident. However, the reporting of such incidents is very limited on the employer's part. It is known that most of the cases of an accident are negotiated and solved and negotiated within the industrial premises and never reported. The major causes for diseases and accidents at the workplace reported by earlier research identify violation of safety rules, congested workplaces, unsecured workplaces, carrying a heavy load, lack of awareness among workers, carelessness of both the workers and management, unsecured/old machines or equipment, poor layout, unavailability of the safety equipment/tools as necessary, low standard tools, unsuitable working conditions and use of low-quality raw materials. (14) Likewise, lack of training, lack of inspection, supervision, and monitoring, resource constraints (human and financial), and oversight of facilities are also important factors responsible for the high incidence of disease and accidents in Nepal. (15)

3.9 Number of occupational injuries and diseases covered by social security schemes

In 2017 a new Labor Act was enacted. The Act added some important provisions on occupational diseases. After the enactment of the Labour Act 2017, the Labor Regulations, 2018 and the Occupational Safety and Health Policy, 2019 were also enacted. The regulations made detailed arrangements for occupational diseases. It included in the regulations that the list of occupational diseases needs to be published in the Gazette. However, the government has not yet classified the occupational diseases and published the list in the Gazette, but instead published it in the “Social Security Scheme Operation Procedure, 2018”. While preparing the “Social Security Scheme Operation Procedure, 2018” the OSH expert who is responsible for this National OSH profile suggested to the Government of Nepal that in the absence of Nepal’s list of occupational diseases, it would be wise to implement the ILO list of the occupational diseases. The Government of Nepal agreed to this suggestion and endorsed the ILO list of occupational diseases as Nepal’s list of occupational diseases. The procedure states that in the event of an illness or accident, while working, the company or the organization should protect such a person.

3.10 List of Occupational Diseases

1. Occupational diseases are caused by exposure to agents arising from work activities.

1.1. Diseases caused by chemical agents.

1.1.1. Diseases caused by beryllium or its compounds.

1.1.2. Diseases caused by cadmium or its compounds.

1.1.3. Diseases caused by phosphorus or its compounds.

1.1.4. Diseases caused by chromium or its compounds.

1.1.5. Diseases caused by manganese or its compounds.

1.1.6. Diseases caused by arsenic or its compounds.

1.1.7. Diseases caused by mercury or its compounds.

- 1.1.8. Diseases caused by lead or its compounds.
- 1.1.9. Diseases caused by fluorine or its compounds.
- 1.1.10. Diseases caused by carbon disulfide.
- 1.1.11. Diseases caused by halogen derivatives of aliphatic or aromatic hydrocarbons.
- 1.1.12. Diseases caused by benzene or its homologues.
- 1.1.13. Diseases caused by nitro- and amino-derivatives of benzene or its homologues.
- 1.1.14. Diseases caused by nitroglycerine or other nitric acid esters.
- 1.1.15. Diseases caused by alcohols, glycols or ketones.
- 1.1.16. Diseases caused by asphyxiants like carbon monoxide, hydrogen sulfide, hydrogen cyanide or its derivatives.
- 1.1.17. Diseases caused by acrylonitrile.
- 1.1.18. Diseases caused by oxides of nitrogen.
- 1.1.19. Diseases caused by vanadium or its compounds.
- 1.1.20. Diseases caused by antimony or its compounds.
- 1.1.21. Diseases caused by hexane.
- 1.1.22. Diseases caused by mineral acids.
- 1.1.23. Diseases caused by pharmaceutical agents.
- 1.1.24. Diseases caused by nickel or its compounds.
- 1.1.25. Diseases caused by thallium or its compounds.
- 1.1.26. Diseases caused by osmium or its compounds.
- 1.1.27. Diseases caused by selenium or its compounds.
- 1.1.28. Diseases caused by copper or its compounds.
- 1.1.29. Diseases caused by platinum or its compounds.
- 1.1.30. Diseases caused by tin or its compounds.
- 1.1.31. Diseases caused by zinc or its compounds.
- 1.1.32. Diseases caused by phosgene.
- 1.1.33. Diseases caused by corneal irritants like benzoquinone.
- 1.1.34. Diseases caused by ammonia.

1.1.35. Diseases caused by isocyanates.

1.1.36. Diseases caused by pesticides.

1.1.37. Diseases caused by Sulphuroxides.

1.1.38. Diseases caused by organic solvents.

1.1.39. Diseases caused by latex or latex-containing products.

1.1.40. Diseases caused by chlorine.

1.1.41. Diseases caused by other chemical agents at work not mentioned in the preceding items where a direct link is established scientifically or determined by methods appropriate to national conditions and practice, between the exposure to these chemical agents arising from work activities and the disease(s) contracted by the worker. In the application of this list, the degree and type of exposure and the work or occupation involving a particular risk of exposures should be taken into account when appropriate.

1.2. Diseases caused by physical agents

1.2.1. Hearing impairment caused by noise.

1.2.2. Diseases caused by vibration (disorders of muscles, tendons, bones, joints, peripheral blood vessels or peripheral nerves).

1.2.3. Diseases caused by compressed or decompressed air.

1.2.4. Diseases caused by ionizing radiations.

1.2.5. Diseases caused by optical (ultraviolet, visible light, infrared) radiations including laser.

1.2.6. Diseases are caused by exposure to extreme temperatures.

1.2.7. Diseases caused by other physical agents at work not mentioned in the preceding items where a direct link is established scientifically or determined by methods appropriate to national conditions and practice, between the exposure to these physical agents arising from work activities and the disease(s) contracted by the worker.

1.3. Biological agents and infectious or parasitic diseases

1.3.1. Brucellosis.

1.3.2. Hepatitis viruses.

1.3.3. Human immune deficiency virus (HIV).

1.3.4. Tetanus.

1.3.5. Tuberculosis.

1.3.6. Toxic or inflammatory syndromes associated with bacterial or fungal contaminants.

1.3.7. Anthrax.

1.3.8. Leptospirosis.

1.3.9. Diseases caused by other biological agents at work not mentioned in the preceding items where a direct link is established scientifically or determined by methods appropriate to national conditions and practice, between the exposure to these biological agents arising from work activities and the disease(s) contracted by the worker.

2. Occupational diseases by target organ systems

2.1. Respiratory diseases

2.1.1. Pneumoconioses caused by fibrogenic mineral dust (silicosis, anthraco-silicosis, asbestosis).

2.1.2. Silicotuberculosis.

2.1.3. Pneumoconioses caused by non-fibrogenic mineral dust.

2.1.4. Siderosis.

2.1.5. Bronchopulmonary diseases caused by hard-metal dust.

2.1.6. Bronchopulmonary diseases caused by the dust of cotton (byssinosis), flax, hemp, sisal or sugar cane (bagassosis).

2.1.7. Asthma caused by recognized sensitizing agents or irritants inherent to the work process

2.1.8. Extrinsic allergic alveolitis caused by the inhalation of organic dust or microbially contaminated aerosols, arising from work activities.

2.1.9. Chronic obstructive pulmonary diseases caused by inhalation of coal dust, dust from stone quarries, wood dust, dust from cereals and agricultural work, dust in animal stables, dust from textiles, and paper dust, arising from work activities.

2.1.10. Diseases of the lung caused by aluminum.

2.1.11. Upper airways disorders caused by recognized sensitizing agents or irritants inherent to the work process.

2.1.12. Other respiratory diseases not mentioned in the preceding items where a direct link is established scientifically or determined by methods appropriate to national conditions and practice, between the exposure to risk factors arising from work activities and the disease(s) contracted by the worker.

2.2. Skin diseases

2.2.1. Allergic contact dermatoses and contact urticaria caused by other recognized allergy provoking agents arising from work activities not included in other items.

2.2.2. Irritant contact dermatoses caused by other recognized irritant agents arising from work activities not included in other items.

2.2.3. Vitiligo caused by other recognized agents arising from work activities not included in other items.

2.2.4. Other skin diseases caused by physical, chemical or biological agents at work not included under other items where a direct link is established scientifically or determined by methods appropriate to national conditions and practice, between the exposure to risk factors arising from work activities and the skin disease(s) contracted by the worker.

2.3. Musculoskeletal disorders

2.3.1. Radial styloid tenosynovitis due to repetitive movements, forceful exertions and extreme postures of the wrist.

2.3.2. Chronic tenosynovitis of hand and wrist due to repetitive movements, forceful exertions and extreme postures of the wrist.

2.3.3. Olecranon bursitis due to prolonged pressure of the elbow region.

2.3.4. Prepatellar bursitis due to prolonged stay in kneeling position.

2.3.5. Epicondylitis due to repetitive forceful work.

2.3.6. Meniscus lesions following extended periods of work in a kneeling or squatting position.

2.3.7. Carpal tunnel syndrome due to extended periods of repetitive forceful work, work involving vibration, extreme postures of the wrist, or a combination of the three.

2.3.8. Other musculoskeletal disorders not mentioned in the preceding items where a direct link is established scientifically or determined by methods appropriate to national conditions and practice, between the exposure to risk factors arising from work activities and the musculoskeletal disorder(s) contracted by the worker.

2.4. Mental and behavioral disorders

2.4.1. Post-traumatic stress disorder

2.4.2. Other mental or behavioural disorders not mentioned in the preceding item where a direct link is established scientifically or determined by methods appropriate to national conditions and practice, between the exposure to risk factors arising from work activities and the mental and behavioural disorder(s) contracted by the worker.

3. Occupational cancer

3.1. Cancer caused by the following agents

3.1.1. Asbestos

3.1.2. Benzidine and its salts

3.1.3. Bis-chloromethyl ether (BCME)

3.1.4. Chromium VI compounds

- 3.1.5. Coal tars, coal tar pitches or soot
- 3.1.6. Beta-naphthylamine
- 3.1.7. Vinyl chloride
- 3.1.8. Benzene
- 3.1.9. Toxic nitro- and amino-derivatives of benzene or its homologues
- 3.1.10. Ionizing radiations
- 3.1.11. Tar, pitch, bitumen, mineral oil, anthracite, or the compounds, products or residues of these substances
- 3.1.12. Coke oven emissions
- 3.1.13. Nickel compounds
- 3.1.14. Wood dust
- 3.1.15. Arsenic and its compounds
- 3.1.16. Beryllium and its compounds
- 3.1.17. Cadmium and its compounds
- 3.1.18. Erionite
- 3.1.19. Ethylene oxide
- 3.1.20. Hepatitis B virus (HBV) and hepatitis C virus (HCV)
- 3.1.21. Cancers caused by other agents at work not mentioned in the preceding items where a direct link is established scientifically or determined by methods appropriate to national conditions and practice, between the exposure to these agents arising from work activities and cancer(s) contracted by the worker.

4. Other diseases

4.1. Miners' nystagmus

4.2. Other specific diseases caused by occupations or processes not mentioned in this list where a direct link is established scientifically or determined by methods appropriate to national conditions and practice, between the exposure arising from work activities and the disease(s) contracted by the worker.

3.11 Current status of Occupational diseases/injuries and deaths

The information related to occupational injuries is based on the statistics provided by the Department of Labour and Occupational Safety. The segregated data such as clustered data on the Provincial level, sector data segregating the enterprise such as manufacturing, construction, etc.), and sex-segregated data of the accidents are not available in the Department of Labour and Occupational Safety. Most of the accidents recorded in the Labour and Employment officers' origins are from the manufacturing industries. It seems as if occupational accidents are scarce in Nepal. This is largely due to the underreporting of the events

although reporting of any type of accident is mandatory, its implementation is perceived to be lacking. The law prescribes mandatory notification on any fatal accidents and/or accidents causing -man-day losses. It is perceived that the majority of these accidents are unreported. Further, the data on the construction sector with a higher prevalence of accident rate is largely not covered. The magnitude of the problems and the number of accidents are much higher than the information provided by the available statistical indicators. The under-reporting of occupational accidents is primarily attributed to the lower level of awareness of OSH and the lack of sensitivity among management and workers in general. The causes of accidents are varied but the common causes of accidents in Nepal are due to lack of safety policy, lack of or poor implementation of manual and guidelines at the enterprises, the improper layout of workplace / unsafe workplace design, unsafe handling/use of chemicals, unguarded or inadequately guarded machinery, use of an unsafe machine (unsafe design and construction of machines), lack of adequate maintenance of machinery, inadequate ventilation at the workplace, unsafe electrical connection, inadequate/improper lighting system, lack of training of the workers, lack of supervision, use of an old or outdated machine or equipment, poor housekeeping and material handling, negligent or no use of safety gears and personal protective equipment, stretched working hour compounded with overload, lack of awareness on personal health and hygiene, lack of inspection and violation of safety rules. The accidents are categorized as major and minor ones. Any accident that does not make an injured person a disabled one and where the injured person gets first aid and returns to work is called a 75-minor accident. An accident causing permanent or prolonged disability and death of the employees is called a major accident.

3.12 Implementation of Occupational Safety and Health Standards

The government of Nepal has promulgated OSH standards in the workplace on Noise and Light during 2016 and this standard has been published in Nepal Gazette dated July 9, 2017. Besides these, the Government has also formulated the directives/guidelines for Brick industries in 2017. The guideline speaks about the Occupational Health and Safety of the workers. The permissible exposure limit (PEL) of noise for the workplace is 90dBA for 8 hours, 95 dBA for four hours, 100 dBA for two hours, 105 dBA for one hour, 110 dBA for 30 minutes, and 115 dBA for 15 minutes a day in the workplace. The government has also recommended the minimum light illumination level for the workplace depending on the type of work and place. The lux (unit of illumination) should not be less than between 10 and 100. For the light, the standard stipulates, emergency exit and emergency pathways shall have 10 lux, inactive storage 20 lux, rough active storage, and warehouse 50 lux, machine work 100 lux, checking and sorting 300 lux, weaving dark-coloured woollen goods 500 lux and jewellery and watch manufacturing 1000 lux. Any local light, that is to say, an artificial light designed to illuminate, particularly the area or part of the area of work of a single operative or small group of operatives working near each other, shall be provided with a suitable shade of opaque material to prevent glare with other effective means by which the light source is completely screened from the eyes of every person employed at a normal working place, or shall be so placed that no such person is exposed to glare therefrom.

3.13 Integration of health services with occupational health services

In Nepal, occupational health is not integrated with the healthcare system of Nepal. Occupational safety and health to date remain under the mandate of the Ministry of labour, employment and Social Security and have no functional relationship with the structure within the Ministry of Health and Population.

The industrial history of Nepalese is rather short. To keep pace with the contemporary world, Nepal has been turning wheels at full speed and overlooking issues of occupational health and safety. The major obstacle to instilling the concept of OHS in Nepalese is the inability of stakeholders to grasp the utility and importance of OHS. Occupational health and safety procedures require adequate surveillance of the work environment and risk assessment, both of which are missing completely from most industries in Nepal. Neither have most industries health status. Control measures for preventive and emergency preparedness are so absent in most industries. Likewise, diagnostic procedures for occupational disease and recordkeeping of such events are inadequate. It will therefore take some time to develop the concept of

OHS with preventive, curative and rehabilitative measures under a single umbrella of OHS among entrepreneurs in Nepal. The barriers to OHS identified in Nepal can be generalized as follows:

- Lack of awareness concerning OHS at all levels
- Faulty legal systems and lack of periodic updates
- Inability to establish OHS as an integral component of working life
- Lack of professional expertise
- Resource constraints

3.14 Occupational disease and their diagnosis in the country

No health programs in Nepal address the prevention and control of occupational-related diseases and conditions. The major facade to installing the concept of OSH in Nepal lies in the inability of concerned stakeholders to grasp the utility and importance of occupational health services. Major obstacles in enforcing effective OSH practices in Nepal from the nation's perspective are the least priority of the government, lack of national strategy for OSH management, legal backup mechanism and focal point at government ministries. Few industries have taken prudent measures by establishing OSH setups thereby decreasing the vulnerability of hazards.

3.15 Budget

It is important that occupational health practitioners critically evaluate their practice and, through the application of the iterative audit cycle, improve the quality, effectiveness, and efficiency of their service. Audit is conventionally divided into structure (resources), process (procedures), and outcome (results). The use of audits should not be confined to clinical matters, and the inclusion of occupational health practitioners from other disciplines—for example, occupational hygiene or safety, will contribute to better services for all. For a service to report on its activities in a meaningful way, there needs to be in place a basic dataset that allows comparison between periods, different employee groups, or operational divisions. Data that may be appropriate include new appointments, review appointments, health surveillance activity, immunisations, referral reason, type of clinician (doctor or nurse), and diagnosis. This information is invaluable for presentation to management to show changes in activity or areas for which increased funding is needed when making a business case. It will also be useful when discussing issues from the perspective of occupational health in organizational meetings such as health and safety meetings, risk management, and when compiling an annual report or business plan. These data are ideally compiled in a computerized database, either bespoke or a commercially available occupational health software package.

The main enforcement body at the local levels and the specified areas are the Labour and Employment offices. The major activities carried out by these offices are monitoring the labour relations occupational safety and other health aspects in the establishment and enterprises as specified under the legislation. The Labour and Employment Offices at the local levels are headed either by the Labour Officer or the Factory inspector. The other staff members to support the activities of these offices are the non-gazette officers and the assistants.

4. Social protection and health assessment of Nepalese labour migrants

Nepal's National Health Policy 2019 seeks to minimize public health risks due to migration, particularly by ensuring accessibility of health services for Nepalese migrants abroad. (16) Health assessment of Nepalese Labour Migrants (NLMs) is a mandatory procedure before departure, which is done through government-

approved pre-departure private medical assessment centres. The health records from these assessment centres are first recorded in paper-based form and then entered into an online electronic form to be stored by the DoFE. The filled-up paper forms are sent to District Health Offices, which further report the data to the Department of Health Services (DoHS), Ministry of Health and Population (MoHP) and associated governmental infectious diseases centres. However, there is no formal health assessment of NLMs upon arrival to Nepal. (17)

In 2021/22, 1395 Nepali migrant workers (including 39 women) were reported to have died, with most deaths certified as having occurred due to ‘natural causes’ in and by Country of Department (CoDs). More than 150 cases of deaths of Nepali migrant workers have each been reported annually in Malaysia, Saudi Arabia, Qatar and the UAE in 2019/20–2021/22. In addition, a significant number of Nepali migrant workers return home with mild to severe injuries and illnesses. The health risks migrant workers face are linked to their exposure to occupational safety and health hazards, poor working and living conditions, lack of access to social protection, including medical/health services, language and cultural barriers, and forced overtime labour, among others. The FEB disbursed a total of NPR 769.95 million (USD 5.9 million) as financial assistance to 1395 families of deceased migrant workers in 2020/21 through the Foreign Employment Welfare Fund (FEWF). Nepali migrant workers have been subjected to an exploitative recruitment process, employment contract fraud and abuse by employers. Women migrant workers are especially vulnerable to violence and face risks of abusive treatment in many countries of destination. More than 1300 new cases related to such fraud, abuse and exploitation were filed at the FET between 2019/20 and 2021/22. MoLESS has adopted and implemented a range of policies and legal instruments to address these issues. These include a ban on the use of agents, conferring rights to the Chief District Officer (CDO) to investigate and punish individual agents involved in fraud and cheating, and an ‘employer pays’ model for recruitment. The government has also prioritized the reintegration of migrant workers through skill development and certification, and also programmes dealing with financial literacy, vocational training, recognition of prior learning, psychological support, and shelter. Through the Reintegration Programme (Operation and Management) Directive for Returnee Migrant Workers, 2022, the government has stressed three diverse yet inter-related dimensions of the reintegration efforts: social integration, employment, and entrepreneurial development.

Health and safety of migrant workers: MoLESS recognizes the need to carry out regular and effective inspection of the workplace and living conditions of migrant workers. In line with this report’s findings that a large number of Nepali migrant workers are employed in unsafe employment practices, MoLESS notes the need to organise occupational safety and health training for migrant workers prior to and after their arrival in the Country of Department (CoD)s in coordination with Nepali diplomatic missions. MoLESS also realises the importance of informed migration, sensitization, greater awareness, and the need for implementing country-specific PDOT curriculums as well as post-arrival orientation. MoLESS will continue engaging with CoDs to ensure that employers implement standard occupational safety and health protocols at the workplace.

4.1 Social protection

It has been recognized that the establishment of a bilateral social security mechanism could enhance the protection of migrant workers. MoLESS will continue to explore ways by engaging with employers’ and workers’ organisations on how this can be designed and implemented in a way that is gender responsive and also sensitive to the condition of workers in the informal sector. Priority will be given to the inclusion of migrant workers in the social security scheme in Nepal, namely the Social Security Fund (SSF). The study conducted by the International Labour Organization found an average death rate of 0.16% (4322 deaths out of a total of 2,723,587 labour permits) in the 7 years from 2008/09 to 2014/15.[14] The major causes of death, as reported, were cardiac arrest (941 cases or 21.8%), natural causes (847 cases or 19.6%), and other or unidentified causes (795 cases or 18.4%). Suicide was the major cause of death among female NLMs (33% of all female migrant worker deaths). Almost 97% of these deaths occurred in GCC countries

and Malaysia with the highest being in Malaysia followed by Saudi Arabia, Qatar, and United Arab Emirates

4.2 Health assessment of labour migrants

The government of Nepal has made legal arrangements in case of migrant worker's health check-ups. (18) A Nepalese migrant worker has to obtain a certificate of fitness from a government-approved medical centre in Nepal with a government-approved HOLOGRAM issued by NHPF affixed on the Report Card. A Migrant Worker who has got a medical checkup done from a government-approved medical centre and has a hologram affixed medical report, if departed due to medical reasons within 2 months from a medical test, is liable for compensation. Medical Center or Health Institute is not liable to pay compensation to a migrant worker returning due to sexually transmitted diseases, HIV/AIDS, gonorrhoea, syphilis, hepatitis B or C, Jaundice, High BP, or Contagious Diseases. There are numerous health institutions in Nepal. However, all of them are not authorized to conduct medical tests for foreign employment purposes. Migrant workers must make sure that the medical centre is listed by the Government of Nepal to conduct medical checkups for foreign employment. The list of investigations suggested for foreign manpower employment is recognized by the Ministry of Health and Population, Nepal. (19)

Table 4: List of investigations suggested for foreign labour migrants

S.N.	TEST	RATE
1	X-RAY	300
2	HB	55
3	TC	60
4	DC	60
5	ESR	65
6	Urine	60
7	Stool	70
8	Sugar	60
9	Urea	110
10	Creatinine	125
11	MP	90
12	MF	95
13	Blood Grouping	80
14	LFT(Bilirubin Total/Direct, SOPT and SGOT)	460
15	Syringe (5 ml)	5

16	Syringe (Vaccumotor)	25
17	HIV	420
18	HBSAG	350
19	Anti HCV	540
20	VDRL/RPR	130
21	IPHA	385
22	Physical Consultation	As per GoN Standard
23	Pregnancy Test	160
24	Platelet Count	75
25	Gama GT	450
26	Lipid Profile	600
27	Total Protein	120
28	PFT	300
29	Mantoux test	120
30	Cannabis	350
31	Opaite	350
32	ECGs	205
33	USG	600
34	Audiogram	300
35	MMR Vaccine	500
36	EEG	1100
37	Alkaline Phosphate	190

Source: <https://nepalhp.org.np/>

The below listed medical centers have been approved by the Ministry of Health and Population of the Government of Nepal to Provide medical checkup services to Nepalese people going abroad on foreign employment. Thus, they are authorized to conduct medical tests.

Table 5: List of government approved health institutions for health screening to labour migrants

SN	Regd. No.	Name of the Health Institution	Address
1	1	Dhorpatan Polyclinic Pvt. Ltd.	Gongabu - 4, Kathmandu
2	2	Singapurgorkha Polyclinic pvt. Ltd.	koteshwor 35, Kathmandu
3	3	Helping Health Medical Centre Pvt. Ltd.	Gongabu - 5, Naya Bus Park, Kathmandu
4	4	Abida International Medical Center	Itahari-1, Sunsari
5	5	N.M.C. Diagnostic Medical Center	Linkroad, Birjung,Parsantaj miya
6	6	Helping Health Diagnostic Centre	Basundhara - 3, Kathmandu
7	7	Bishwas Medical And Polyclinic pvt.Ltd.	Tribhuwanpark-10 ,Ghorahi, Dang
8	9	Munal Diagnostic Center Pvt.Ltd	Itahari-1, Sunsari
9	10	Chhabdi Barahi Tanahu Polyclinic	Gongabu-4, Kathmandu
10	11	Prime Health Care Centre Pvt. Ltd.	Chabahil - 7, Kathmandu
11	13	Janamaitri Hospital Pvt. Ltd.	Balaju Chowk, Kathmandu
12	14	Prudential Medical Center Pvt.Ltd	Baneshwor
13	16	Rakshya polyclinic And Diagnostic center pvt.Ltd.	Gongabu, Nayabaspark, Kathmandu
14	17	Anugraha Polyclinic Pvt. Ltd.	Nayabaspark-29 , Kathmandu
15	18	Family Health Care International & Research Centre Pvt. Ltd.	Dhumbarahi Chowk, Kathmandu
16	19	Alisa Polyclinic Pvt. Ltd.	Sitamangal Kalimati tol, Kathmandu
17	20	Khajana Medical & Polyclinic Centre Pvt. Ltd.	K.M.C. - 9, Pingalasthan, Kathmandu
18	21	Alkhaleej Medical Center Pvt. Ltd.	Kathmandu - 7, Chucheeapati
19	22	Sulav Health Polyclinic And Pathology Pvt. Ltd.	Maitidevi-32, sastrimargh, Kathmandu
20	23	Medidia Diagnostic Center Pvt Ltd	Bansbari. Kathmandu
21	24	Ma Janaki International Polyclinic & Diagnostic Center Pvt.Ltd	Old Baneshwor, Kathmandu
22	25	Fishtail Imaging & Diagnostic Centre Pvt. Ltd.	Ghairapatan - 4, Pokhara

23	26	LifeCare Prince Diagnostic Center Pvt Ltd	Tripureshwor, Kathmandu
24	27	Kantipur Diagnostic Centre Pvt. Ltd.	Kantipath, Jyatha, Kathmadu
25	28	Jaljala Polyclinic And Diagnostic Center Pvt. Ltd.	Nayabaspark-4, Kathmandu
26	29	Sumeru Diagnostic Centre Pvt. Ltd.	Pulchowk - 3, Lalitpur
27	30	Sikhar Medical And Diagnostic Center Pvt.Ltd.	Gongabu, Nayabapark, Kathmandu
28	31	Anurag Polyclinic And Medical Center Pvt.Ltd	Gaushala , Kathmandu
29	32	Samajkalyan Polyclinic And Diagnostic Center Pvt.Ltd.	Gongabu-3, Kathmandu
30	33	Sai Kripa Polyclinic And Medical Center Pvt.Ltd	Gongabu-5, Kathmandu
31	34	Srijanshi Polyclinic Pvt.Ltd.	Gothatar-8, Kathmandu
32	35	Madina Medical Center Pvt Ltd.	Kalimati Tole-9, Kathmandu
33	36	Saiba Medical Center Pvt Ltd.	Jwagel-10, Lalitpur
34	37	Saudi Medical Centre Pvt. Ltd.	Kupondole, Lalitpur
35	39	Health Care Clinic	Tripureshwor, Kathmandu
36	40	Life Trust Medi Diagnostic Pvt. Ltd.	Anandanagar Marg, Dhubarahi , Kathmandu
37	41	Siddhi Polyclinic Health Services Pvt Ltd.	Dillibazar, Kathmandu
38	47	Helping Health Polyclinic Pvt. Ltd.	Maitidevi, Kathmandu
39	48	Pooja Diagnostic Center Pvt.Ltd	Birtamod, Jhapa
40	49	Pradhan Diagnostic Center Pvt.Ltd	Birtamod, Jhapa
41	52	Nishant Medical Diagnostic Center Pvt.Ltd.	Damak-11, Jhapa
42	53	Aarambha medical And Diagnostic Center Pvt.Ltd.	Itahari-1, Sunsari
43	54	Kankai Diagnostic Center Pvt.Ltd.	Anarmani-3, Jhapa
44	55	Sudha Medical & Diagnostic Centre Pvt. Ltd.	Sinamangal, Kathmandu
45	56	Buddha Diagnostic And Medical Services Pvt.Ltd.	Damak-11, Jhapa
46	57	L & R Polyclinic & Diagnostic Center Pvt Ltd	Tilganga, Kathmandu
47	57	Omkar Polyclinic, Medical Diagnostic And Therapeutic Center Pvt.Ltd.	Bagdol-4, Lalitpur
48	58	Samrat Polyclinic And Medical Center Pvt.Ltd.	Chhabahil-7, Kathmandu

49	59	Diamond Polyclinic And Diagnostic Center	Samakhushi-29, Kathmandu
50	60	Birtamod Diagnostic Center Pvt.Ltd.	Anarmani-2, Jhapa
51	61	Eon Medical Center Pvt.Ltd.	Lazimpat-2 , Kathmandu
52	62	Ekata Medical Centre Pvt. Ltd.	Anamnagar 32, Kathmandu
53	63	Al Masur Diagnostic Center Pvt Ltd	New Baneshwor, Kathmandu
54	64	Aqua Diagnostic Services Pvt Ltd.	Pinglasthan-9, Kathmandu
55	65	Rajam Medical Centre Pvt. Ltd.	Kathmandu 7, Chabahil, Kathmandu
56	66	Sudha Polyclinic Pvt Ltd	Koteshwor-35, Kathmandu
57	67	South Asian Health Care Centre Pvt. Ltd.	Gaushala - 9, Kathmandu
58	68	Dynasty Medical Centre Pvt. Ltd.	Gaushala, Pingalasthan, Kathmandu
59	69	Green City Hospital Pvt Ltd	Dhapasi-8, Kathmandu
60	72	Chhimeki Polyclinic Pvt.Ltd.	Santinagar, Kathmandu
61	73	Himal International Medical Center Pvt Ltd.	Shantinagar Gate, Kathmandu
62	74	Trishuli Medical & Clinic Pvt. Ltd.	Sinamangal - 9, Kathmandu
63	75	Namaste Nepal Medical Center & Polyclinic Pvt Ltd	Gongabu, Kathmandu
64	76	Kasthamandap Health Care Pvt. Ltd.	Battisputali, Kathmandu
65	77	Kaniska Health Care Centre Pvt. Ltd.	Tinkune, Kathmandu
66	78	Friendship Health care center Pvt.Ltd.	Maharajgunj , Kathmandu
67	79	Remind Polyclinic Diagnostic Center Pvt.Ltd.	ka.ma.na.pa.-9, Kathmandu
68	80	Buddha International Medical Center Pvt Ltd	New Baneshwor Kathmandu
69	84	Kantipur Medica Center	Itahari-1, Sunsari
70	85	Saksham Medical Centre Pvt. Ltd.	Gongabu - 29, Kathmandu
71	85	Sahara Health Care Pvt Ltd	New Baneshwor, Kathmandu
72	86	Panasiya Medical Center Pvt.Ltd	Newbaneshwor, Santinagar, Kathmandu
73	87	World Wide Medical Center Pvt Ltd	Battisputali-9, Kathmandu
74	87	Moulakali Polyclinic Diagnostic Center Pvt.Ltd.	Samakhushi-9, Kathmandu
75	88	Peace Medical Center Pvt Ltd	Bashundhara-3, Kathmandu

76	88	Kohalpur Health Care Pvt.Ltd.	Kohalpur-3 , Banke
77	89	Upatyaka Pathology & Clinic Pvt. Ltd.	Pulchowk - 3, Lalitpur
78	90	Apple International Polyclinic Pvt. Ltd.	Tripureshwor, Kathmandu
79	91	Nepal Janata Diagnostic And Polyclinic pvt.Ltd.	Koteshwor-35, Kathmandu
80	92	Sunshine Medical Centre Pvt. Ltd.	Naya Baneshwor, Kathmandu
81	92	Sunapati Polyclinic & Health Center Pvt Ltd	Gwarko, Lalitpur
82	92	Cosmos Medical Center Pvt Ltd	Gaushala, Kathmandu
83	93	Sunshine Health care Center Pvt.Ltd	Prithivi chowk, Pokhara
84	94	Lalupate Medical Center Pvt Ltd.	Pinglasthan-9, Kathmandu
85	95	Shree Janasewa Polyclinic And Medical Center Pvt.Ltd	Koteshwor-35, Kathmandu
86	96	Himalay Diagnostic Clinic	Koteshwor-35, Kathmandu
87	97	Merapick Medical Center Pvt.Ltd.	Mitrapark, Chabahil, Kathmandu
88	98	Glory Medical Centre Pvt. Ltd.	Basundhara - 3, Kathmandu
89	99	Ghumanu Lifecare Medical And Diagnostic Center Pvt.Ltd	Damak-11, Jhapa
90	100	Royal Medical Center Pvt.Ltd.	Bhagawanbahal, Thamel, Kathmandu
91	101	Titan Health Care Centre Pvt. Ltd.	Basundhara - 3, Kathmandu
92	102	Sudha Medical Center Pvt.Ltd.	Butwal-8, Rupandehi
93	103	Everest International Polyclinic Diagnostic center Pvt.Ltd	Nepalgunj-13 , Banke
94	104	Alka Hospital Pvt.Ltd.	Jawalakhel, Lalitpur
95	105	Madhyapaschim Polyclinic Pvt. Ltd.	Nepalgunj - 13, Banke
96	106	Subba Pathology And Clinic Pvt.Ltd.	Kupandol, Lalitpur
97	107	Sunsari Diagnostic Center Pvt.Ltd.	Itahari-1 , Sunsari
98	108	All Nepal Hospital Pvt Ltd	Samakhusi-29, Ranibari Marg
99	109	P.K. Diagnostic Center Pvt.Ltd.	Sinamangal-9, Kathmandu
100	110	Community Health Care Cooperative Ltd.	Itahari - 1, Sunsari
101	111	Budha Subba Medical Centre Pvt. Ltd.	Damak 11, Jhapa

102	112	Dikshya Swastya Sewa Kendra Pvt.Ltd.	Janakpur-8, Dhanusha
103	113	Nepolian Health Care Center Pvt.Ltd.	Balaju-16, Kathmandu
104	114	U.V. Swasthya clinic Pvt.Ltd.	Basundhara-3, Kathmandu
105	115	Asian Polyclinic Diagnostic Center Pvt.Ltd	Bagbajar, Kathmandu
106	116	Asian Plus Medical Center Pvt.Ltd.	Gongabu-5, Kathmandu
107	117	Siddhartha Polyclinic Pvt.Ltd.	Bagbajar, Kathmandu
108	118	Nepal Siddharth Sadan Polyclinic Pvt.Ltd	Gongabu-4, Kathmandu
109	121	Nippon Polyclinic And Diagnostic Center Pvt.Ltd.	Sherchan Plaza, Balaju-16, Kathmandu
110	122	Medicare National Polyclinic Pvt.Ltd.	Bashundhara-3 , Kathmandu
111	123	Kuleshwor Polyclinic Pvt. Ltd.	Kuleshwor - 14, Kathmandu
112	124	Paradise International Medical Centre Pvt. Ltd.	Kupondole - 10, Lalitpur
113	125	Everest Health Home Services Pvt Ltd	Mid Baneshwor, Kathmandu
114	126	Satyasai Diagnostic Center Pvt.Ltd.	Gouridhara, Tukucha, Kathmandu
115	127	Siddhakali Medical And Polyclinic Center Pvt. Ltd.	Gongabu-4, Kathmandu
116	128	Asia Pacific Polyclinic Pvt.Ltd	ka.ma.pa.-11,Thapathali, Kathmandu
117	129	Kist Polyclinic And Medical Center Pvt.Ltd.	Balkumari,Kharibot-8, Lalitpur
118	130	Golfspring Medical Center Pvt.Ltd	Basundhara-3, Kathmandu
119	131	Well Care Hospital & Research Centre Pvt. Ltd.	Maitidevi, Ratopool, Kathmandu
120	132	Universal Diagnostic Center Pvt.Ltd.	Putalisadak-32, Kathmandu
121	134	Goldengate Polyclinic And diabetes Center Pvt.Ltd	Nakkhuchowk-13, Lalitpur
122	135	Siddharth Pathology	Pokhara, Kaski
123	136	Purnima Medical Centre Pvt. Ltd.	Lalitpur - 10, Jwagal
124	137	Purnima Plus Medical Center Pvt.Ltd.	Gongabu-29, Kathmandu
125	138	Purnachandra Diagnostic Center Pvt.Ltd	Gausala, Kathmandu
126	140	Baba Medical Center Pvt.Ltd.	Chappal karkhana-4, Kathmandu
127	141	Aruna Medical Center Pvt.Ltd	Samakhusi-29, Kathmandu
128	142	Pooja Medical Diagnostic Center Pvt.Ltd	Batisputali-9, Kathmandu

129	143	Fusion Swasthya Polyclinic Pvt.Ltd	Maharajgunj, Kathmandu
130	145	United Diagnostic Center Pvt.Ltd	Sinamangal-9, Kathmandu
131	146	Maata mahalaxmi Medicare Pvt.Ltd.	Batisputali-9, Kathmandu
132	147	Sinamangal Healthcare And Diagnostic Center Pvt.Ltd.	Sinamangal-9, Kathmandu
133	149	Sagarmatha Polyclinic And Diagnostic Center Pvt.Ltd.	Kalimati chowk-13, Kathmandu
134	150	Aashirbad Swasthya sewa clinic	Balkhu-14, Kathmandu
135	152	South Asian Polyclinic And Diagnostic Center Pvt.Ltd.	Goushala-9, Kathmandu
136	153	Praptee Polyclinic Pvt.Ltd	Tripureshwor, Kathmandu
137	154	Bhanu Memorial Polyclinic And Diagnostic Center Pvt.Ltd.	Gongabu Chowk-4, Kathmandu
138	155	Bright Polyclinic & Diagnostic Centre Pvt. Ltd.	Samakhushi - 29, Kathmandu
139	156	Bindhyabasini Medical And Research Center Pvt. Ltd.	Tinkune, Kathmandu
140	157	Lumbini Diagnostic And Research Center Pvt.Ltd	Butwal
141	158	B.B. Health Care Center Pvt.Ltd	Balaju-16 , Kathmandu
142	159	Aishwarya Polyclinic And Diagnostic Center Pvt.Ltd	Balaju-16, Kathmandu
143	160	Janaki International Medical Center Pvt.Ltd.	Nayabuspark, Kathmandu
144	162	Shailung Polyclinic And Diagnostic Center Pvt.Ltd.	Itahari-1, Sunsari
145	163	Saibaba polyclinic And Medical Center Pvt.Ltd.	Gongabu-29, Kathmandu
146	164	Safal Medical Center Pvt.Ltd.	Sinamangal-9, Kathmandu
147	166	Tribeni Devi Polyclinic And Health Care Center Pvt.Ltd	Samakhushi-29, Kathmandu
148	167	Sewa Polyclinic Pvt.Ltd.	Basundhara-3 , Kathmandu
149	168	Trimurti Medical Center Pvt Ltd	Dhapasi-8,Bashundhara, Kathmandu
150	169	Namuna Medical Center Pvt.Ltd	Oldbaneshwor, Kathmandu
151	170	Sunrise Polyclinic & Diagnostic Center Pvt Ltd	Maharajung, Kathmandu
152	171	Asian Raze Medical Centre Pvt. Ltd.	Chappal Karkhana - 4, Kathmandu

153	173	M.V. Polyclinic And Diagnostic Center	Sinamangal-9, Kathmandu
154	174	Perfect Diagnostic Center Pvt.Ltd.	Battisputali-9, Kathmandu
155	175	Frontline Polyclinic Centre Pvt. Ltd.	Himshikhar Marga - 34, Kathmandu
156	176	H.R. Diagnostic Center Pvt.Ltd.	Battisputali-9, Kathmandu
157	177	Life Medical Center	Kalimatidol-9, Kathmandu
158	178	Syrup Health Care Center Pvt Ltd	Dhapasi-8, Kathmandu
159	179	Syrup Medical Center Pvt.Ltd.	Gongabu-29, Kathmandu
160	181	Nagarjun Health Care Center Pvt.Ltd	Balaju-16, Kathmandu
161	182	Ombuddha Medical Center Pvt.Ltd	Sankhamul-10, Kathmandu
162	183	Fusion Polyclinic & Diagnostic Centre Pvt. Ltd.	Shankhamul Road, Naya Baneshwor, Kathmandu
163	184	Suryodaya Medical Center Pvt.Ltd.	Kuleshwor-14, Kathmandu
164	185	Santipur Polyclinic Pvt.Ltd.	Thulobharyang, Kathmandu
165	186	Shikhar Public Polyclinic Center Pvt Ltd	Gongabu - 29, Kathmandu
166	187	City Top Polyclinic & Medical Center Pvt Ltd	Sinamangal-9, Kathmandu
167	188	Relief Health Care Pvt.Ltd.	Lazimpat-2, Kathmandu
168	189	N.S. Medical Center Pvt.Ltd.	Gongabu-4, Kathmandu
169	190	Valley Polyclinic International Health Center Pvt Ltd	Samakhushi-29, Kathmandu
170	191	International Health care And Diagnostic Center pvt.Ltd.	Newbaneshwor, Kathmandu
171	193	Sudha Health Care Pvt. Ltd.	Maharajgunj, Kathmandu
172	194	Texas Polyclinic & Diagnostic Centre Pvt. Ltd.	Bimansthal - 9, Kathmandu
173	195	Social Medical Health Care Center Pvt.Ltd	Gongabu chowk, Kathmandu
174	196	Markopolo Medical Center Pvt.Ltd	Samakhushi-29 , Kathmandu
175	197	AQuality Health Care & Diagnostic Centre Pvt. Ltd.	Sinamangal - 9, Kathmandu
176	198	Trust Medical Centre Pvt. Ltd.	Dhumbarahi, Kathmandu
177	199	K. R. Medical Centre Pvt. Ltd.	Samakhushi - 29, Kathmandu
178	200	Alfresco Polyclinic Pvt.Ltd.	Balaju-16, Kathmandu

179	201	Shavya Medical Center Pvt.Ltd	Maharajgunj Kathmanu
180	202	A Clinic For Health Nepal Pvt. Ltd.	Narayan Gopal Chowk, Kathmandu
181	205	Paradise Polyclinic & Diagnostic Centre Pvt. Ltd.	Basundhara - 3, Kathmandu
182	206	Unicorn Polyclinic Pvt.Ltd.	Pingalasthan, Kathmandu
183	207	Gurudev Diagnostic & Polyclinic Centre Pvt. Ltd.	Balaju - 16, Kathmandu
184	208	Samrat Medical Hall Pvt.Ltd.	Kalimatidol-9, Kathmandu
185	209	Sarbottam Polyclinic Pvt. Ltd.	Basundhara - 9, Kathmandu
186	210	Sungava Polyclinic Pvt.Ltd.	Newbaneshwor, Ekata marga, Kathmandu
187	211	Revive Polyclinic Pvt.Ltd	Pingalasthan, Kathmandu
188	213	Chetana Swastaha Sewa Kendra Pvt. Ltd.	Minbhawan, Shantinagar, Kathmandu
189	214	Nawadurga Polyclinic Pvt.Ltd.	Anamnagar, Kathmandu
190	215	Top Need Medical Centre Pvt. Ltd.	Gongabu - 04, Samakhusi, Ring Road
191	216	Oscar Medical Center Pvt.Ltd.	Dhapasi-9, Bashundhara, Kathmandu
192	217	Pathivare Medical Center Pvt.Ltd.	Hanumansthan -11, Itahari
193	218	Royal Nepal Polycline And Diagnostic Center Pvt.Ltd.	Gongabu-29, Kathmandu
194	219	Medicine Buddha Polyclinic Pvt.Ltd.	Gongabu-4, Newbuspark, Kathmandu
195	220	Tribeni Medical Center Pvt.Ltd	gaushala, Pingalasthan, Kathmandu
196	221	Sampripty Medical Center Pvt.Ltd.	Mitranagar, Newbuspark, Kathmandu
197	222	Maa Laxmi Polyclinic Pvt.Ltd.	Saamakhusi -29, Kathmandu
198	223	Super Healthcare And Diagnostic Center	Gongabu, New buspark, Kathmandu
199	224	Lotus Polyclinic And Diagnostic Center Pvt.Ltd	Gongabu, Newbuspark, Kathmandu
200	225	Super Diagnostic Center Pvt.Ltd.	Saamakhusi-29, Kathmandu
201	226	OM Siddhi Polyclinic And Medical Center pvt.Ltd.	Sundhara-11, Kathmandu
202	227	Bright Medical Center Pvt.Ltd.	Gongabu, Kathmandu
203	228	Nepal Janaswathya Kendra Pvt.Ltd	Balaju-16, Kathmandu
204	229	Dhaulagiri Health Care Center Pvt.Ltd	Newbuspark, Kathmandu

205	230	Namo Buddha Medical Centre Pvt. Ltd.	Gaushala, Kathmandu
206	231	Akbar Medical Center Pvt.Ltd.	Tilganga, Kathmandu
207	232	Healthy Life International Medical Center	Anamnagar , Kathmandu
208	233	Nozomy Polyclinic Pvt.Ltd.	Sinamangal-9 , Kathmandu
209	234	Janata Medical Center Pvt.Ltd.	Tinkune, Kathmandu
210	235	Megha Medical Center Pvt.Ltd.	Saamakhushi-29, Kathmandu
211	236	Sai Polyclinic And Diagnostic Center	Sankhamul-10, Newbuspark
212	237	Swarnim Polyclinic Pvt.Ltd.	Sundhara-3, Kathmandu
213	238	Capital Medical Center Pvt.Ltd.	Kathmandu-29, Mitranagar
214	240	Space Medical Center Pvt.Ltd.	Chabil-7, Kathmandu
215	241	Public Health Polyclinic & Diagnostic Centre Pvt. Ltd.	Samakhushi - 29, Kathmandu
216	242	Shan Health Care & Polyclinic Pvt. Ltd.	Battisputali - 29, Kathmandu
217	243	Reliable Polyclinic And Pyathology Lab Pvt.Ltd.	Kupandol, Lalitpur
218	244	Nita Polyclinic And Diagnostic Center Pvt.Ltd.	Maharajgunj-3, Kathmandu
219	245	Reliance Medicare And Research Center Pvt.Ltd	Gaushala, Ratopul, Kathmandu
220	250	Subba Medical Center Pvt.Ltd	Bashundhara-3, Kathmandu
221	251	Prashanti Health Care Center Pvt.Ltd.	Jawalakhel-3, Pulchowk,Lalitpur
222	252	New World View Medical Centre	Basundhara - 3, Kathmandu
223	254	Clink Medical Centre Pvt. Ltd.	Kalimati Dol, Kathmandu
224	255	Reliance Health Care Center Pvt.Ltd.	Dhapasi-9, Kathmandu
225	256	Amitav Buddha Medical Centre	Narayan Gopal Chowk, Kathmandu
226	256	Universal Medical health Care Center Pvt.Ltd	Mitranagar, Gongabu, Kathmandu
227	259	Srijana Medical Centre & Polyclinic Pvt. Ltd.	Chabahil - 7, Kathmandu
228	260	Om Medical Diagnostic Centre Pvt. Ltd.	Birtamode - 1, Jhapa
229	261	Seasons Polyclinic Pvt.Ltd.	Gongabu-5, Kathmandu
230	262	Merit Multicare Medical Center	Madhyamarga, Santinagar, Kathmandu

231	263	Riza Polyclinic And Diagnostic Center Pvt.Ltd.	Chabahil-7, Kathmandu
232	264	Jalbinayak Polyclinic And Medical Center	Gongabu-4, Newbuspark, Kathmandu
233	265	Meridian Health Care Pvt. Ltd.	Maharajgunj, Kathmandu
234	267	Manjushree Medical Center Pvt.Ltd.	Gouridhara, Tukucha, Kathmandu
235	268	Kshemadevi Polyclinic Pvt Ltd	Baneshwor
236	269	Asian Medical Diagnostic Center Pvt.Ltd.	Samakhushi-29, Kathmandu
237	270	Dhorpatan Medical Centre Pvt. Ltd.	Samakhushi - 29, Kathmandu
238	271	D.N.A. Polyclinic And Medical Center Pvt.Ltd	Gongabu, Kathmandu
239	273	Curex Diagnostic Center Pvt.Ltd	Basundhara-3, Kathmandu
240	274	International Polyclinic And Diagnostic Center Pvt.Ltd.	Birtamod, Jhapa
241	275	Kohinoor Medical Center Pvt.Ltd.	Narayangopal chowk, Kathmandu
242	276	J.M. Medical Center Pvt.Ltd.	Tripureshwor, Kathmandu
243	277	Dynamic Medical Center And Polyclinic Pvt.Ltd	Sukedhara-4, Tamuplaza, Kathmandu
244	278	Kankai Hospital Pvt.Ltd	Birtamod, Jhapa
245	279	Janakpur International Polyclinic And Diagnostic Center Pvt.Ltd.	Janakpur-7, Dhanusha
246	280	D. And P. Polyclinic And Diagnostic Center Pvt.Ltd	Balaju-16, Kathmandu
247	281	Bharatpur Diagnostic Center Pvt.Ltd	Bharatpur-10, Chitawan
248	282	Biratnagar Hospital Pvt. Ltd.	Biratnagar
249	283	Om Polyclinic & Medical Centre Pvt. Ltd.	Itahari - 1, Sunsari
250	284	Sagarmatha Clinic And Medical Center	Samakhushi-29, Kathmandu
251	286	Subarna Medical & Research Pvt. Ltd.	Ghorahi Municipality, Dang
252	289	Manmohan Memorial Purwanchal Chhetriya Samudayik Hospital	Anarmani-3, Jhapa
253	290	Nepal Diagnostic Center Pvt.Ltd.	Sundhara-11, Kathmandu
254	291	Samanantar Polyclinic Medical Center Pvt Ltd.	Bashundhara-3, Kathmandu
255	292	Akhanda Polyclinic Pvt.Ltd.	Battispatali-9, Kathmandu
256	293	Diamond Polyclinic Pvt.Ltd.	Mitranagar-29, Kathmandu

257	294	Shanti Buddha Medical Center Pvt.Ltd	Laxmipur-4, Jhapa
258	296	Cambridge Medical Institute Pvt.Ltd	Biratnagar, Morang
259	297	Global Medical Center Pvt.Ltd.	Saamakhushi Chowk, Kathmandu
260	298	Green Medical Center Pvt.Ltd	Gousala , Pingalasthan, Kathmandu
261	299	Buddha Sai Diagnostic Center Pvt.Ltd.	Itahari-1, Sunsari
262	301	U. and P. Polyclinci Pvt.Ltd	Suizatar-1, Kalanki , Kathmandu
263	302	Alliance Medical And Research Center Pvt.Ltd	Banasthali chwok, Kathmandu
264	303	S. S. Polyclinic Pvt. Ltd.	Narayan Gopal Chowk, Kathmandu
265	305	Dibyajyoti Polyclinic Pvt.Ltd	Newbaneshwor-34, Kathmandu
266	326	Bindhyawasini Medical Center Pvt Ltd	Dhapasi
267	306s(01)	Shubhalaxmi Diagnostic Center Pvt.Ltd	Anarmani-3 Jhapa
268	307(02)	Godawari Diagnostic Pvt.Ltd.	Anarmani-3, Jhapa
269	308(03)	Rose International Medical Center Pvt.Ltd	Gongabu-29, Kathmandu
270	309(04)	Diyas Polyclinic And Medical Center Pvt.Ltd	Sundhara-11, Kathmandu
271	310(05)	Metro Clinic Pvt.Ltd	Thapathali-11, Kathmandu
272	311(06)	Meditech Hospital Anusandhan Kendra	Butwal, Rupandehi
273	312(07)	United Medical Center Pvt.Ltd	Lazimpat-2 , Kathmandu
274	313(08)	Madhu Health Service And Counseling Center	Bashundhara-3, Kathmandu
275	314(09)	Nawajiban Hospital Pvt.Ltd.	Dhangadhi, Kailali
276	315(10)	Health Care Diagnostic Pvt.Ltd	Sinamangal, Kathmandu
277	316(11)	Kunta Polyclinc Pvt.Ltd	Tilganga, Kathmandu
278	318(13)	Ojaswi Polyclinic Pvt.Ltd.	Narayangopal chowk, Kathmandu
279	319(14)	Shubham polyclinic And Diagnostic Center Pvt.Ltd	Newbaneshwor chowk, Kathmandu
280	320(15)	Star Health Care Diagnostic Center	Kupandol-1, Lalitpur
281	322(17)	Anmol Medical Center Pvt.Ltd	Sinamangal-9, Kathmandu
282	323(18)	Manjushree Polyclinic And Diagnostic Center Pvt.Ltd	Dharan-9, Sunsari
283	324(21)	peoples Health Care center	Kathmandu-2

284	325(20)	Himal Medical Center	Swayambhu, Kathmandu
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Source: [https://nepalhp.org.np/\(20\)](https://nepalhp.org.np/(20))

Table 6: The general characteristic of medical centers.

	N = 284
Province	
Koshi	28 (10%)
Madhesh	3 (1%)
Bagmati	241 (85%)
Gandaki	3 (1%)
Lumbini	8 (3%)
Karnali	0 (0%)
Sudurpashchim	1 (1%)

The above listed medical centers have been approved by the Ministry of Health and Population of the Government of Nepal to provide medical checkup services to Nepalese people going abroad on foreign employment. Majority of the medical centre is located in the Bagmati province, which includes the Capital city of Nepal, i.e., Kathmandu. Around 10% of medical centres in Koshi Province and Karnali province with no any medical centres. The majority of medical centers are standalone laboratory and provides only outpatients services with no Inpatient services

Table 7: The general characteristic of hospitals.

S.N	Name of Hospital	Province	Category of Hospital	# beds
1	Norvic International Hospital	Bagmati	Tertiary Hospital	200
2	Grande International Hospital	Bagmati	Tertiary Hospital	200
3	Ciwec Hospital Pokhara	Gandaki	Tertiary Hospital	25
4	Mediciti Hospital	Bagmati	Tertiary Hospital	700
5	Neuro Hospital (National Institute of Neurology)	Bagmati	Tertiary Hospital	100
6	Manipal College of Medical Science	Bagmati	Tertiary Hospital	700
7	CIWEC Clinic	Bagmati	Tertiary Hospital	25
	IOM Nepal Migration Health Assessment Center	Bagmati	Tertiary Hospital	0

The above listed hospitals are tertiary hospitals best known for health screening for foreign migration and travelers in Nepal. These all the multi-specialty hospitals.

Conclusion

A large proportion of the youth population is migrating to overseas work every day in Nepal. The existing national health system does not have any functional link to occupational health services delivery. The management of occupational illness and disease is treated as general health services. There is no specific

health structure to manage occupational illnesses. The Ministry of Labor, Employment, and Social Security is the apex body for national Occupational Safety & Health in Nepal. OSH seems a less priority area for the Ministry of Labor, Employment, and Social Security. Due to a lack of priority, the institutional structure for OSH supervision and administration seems weak with a severe lack of human resources. There is no functional linkage between MOHP. There are no specific measures in place to ensure the standardization of health examination for occupational diseases. There are no specific medical examination schemes for workers exposed to hazardous substances, including asbestos. There is no standard for diagnostic tools such as radiographs, used in the occupational disease investigation. The regulatory bodies that contribute to quality assurance in occupational health services are limited to workplace measurement and worker health examination. A migrant worker must get a pre-screening medical checkup for the visa application. In the case of migrant workers, they must get pre-screening medical checkups from the government-approved health institution recognized by the Ministry of Health and Population, Nepal. The occupational health service delivery system in Nepal is limited to pre-screening for labour migrants and workplace measurement and screening activities

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健康管理手帳制度の国際展開に向けた米国の健康診断実施状況調査

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研究要旨

【目的】

多くの移民を受け入れている先進諸国において、外国人労働者の帰国後のフォローアップをどのように行なっているのかについて、米国を対象に調査を行った。

【方法】

米国大学 2 校を訪問し、産業保健の専門家に対して、米国における退職後の健康診断の現状について情報収集を行った。

【結果】

訪問先 1 では、米国の労災補償制度や特定の健康リスクに焦点を当てた報告が行われた。労災補償は州ごとに異なり、特に外国人労働者の補償情報は多様性がある。特定の疾患に関する情報の集約が不足しており、退職後の補償が不十分であることが指摘された。訪問先 2 では、国際的な健康管理手帳制度の実施に関する課題やベリリウム曝露などの補償問題についての新たな情報が提供された。異なる国での調査の複雑さや個人情報保護に関するアドバイスも共有された。

【考察】

先進国である米国は世界各地からの移民を受け入れており、その規模は日本の外国人労働者の 10 倍以上に及ぶ。しかし、帰国後のフォローアップ体制が整備されておらず、退職後のフォローアップも不十分である現状が浮かび上がった。したがって、本事業は前例のない画期的な取組であり、AI 技術の進歩により言語の壁を超えやすくなった今後の国際社会においても意義があるものと言える。

A. 研究目的

本事業では、現在多くの技能実習生が来日しているベトナム、中国、フィリピン、インドネシアを中心に健康管理手帳制度に基づく健康診断を行う適切な医療機関等の把握、健康診断の実施方法・課題等についての文献調査を進めている。一方で、多くの移民を受け入れている先進諸国において、外国人労働者の帰国後のフォローアップをどのように行なっているのかについて、事例を収集することも本事業を推進する上で意義深いことである。本研究では、米国を対象として調査を行った。

B. 研究方法

米国大学2校（UCSF, University of Arizona）を訪問し、産業保健の専門家を対象に、米国における退職後の健康診断の現状について情報収集を行った。

【訪問先1】

日時：2024年3月26日

場所：

Division of Occupational Environment and Climate Medicine (OECM) University of California, San Francisco

会議出席者：

Gina Solomon MD, MPH

Division Chief

John Balmes MD Professor

Emeritus

Paul Blanc MD, MSPH

Professor Emeritus

Bob Kosnik MD, DIH

Bob Harrison MD, MPH

Matt Gribble PhD. DABT

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【訪問先2】

日時：2024年3月27日

場所：

Mel & Enid Zukerman College of Public Health, University of Arizona

会議出席者：

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C. 研究結果

訪問先 1 :

菅沼より「健康管理手帳制度による健康診断の諸外国での実施のための研究」に関する概略を説明し、米国の労災（主に職業性呼吸器疾患）補償の現状についてヒアリングを実施した。

労働災害に対する補償については、米国は日本より遅れており、退職後長期にわたる補償はほとんどなく、また、労働者への補償に関する法律は州ごとであるため、数例を除いては、全国統一のサーベイランスプログラムは存在せず、労災の情報が散在している状態である。基本的に、連邦政府の法律の下に州ごとの法律があり、カリフォルニアは連邦政府よりさらに厳しい（＝労災に関しては進んでいる）州であるが、外国人労働者については、H1B ビザを持つ高スキルの労働者から不法滞在労働者まで幅広く、その労災補償の情報は多様である。また、退職者が週を跨いで移動した場合にはさらにフォローアップが難しくなる。

アスベスト曝露については、複数の集団訴訟によって補償されることとなり、特に軍艦の修理に伴う曝露において補償体制が整備されているが、全国レベルでのデータは無い。炭鉱労働者の補償体制もあるが全米の体制ではなく、地域レベルでの補償となっている。シリカ曝露については、キッチンカウンター資材としての需要の増大にも関わらず、小規模の

非公式な企業や違法労働者が多く携わっていることから補償体制が未整備で、UCSF でもシリカ曝露に関する助成金を得て調査が開始されたところである。そのほか、カリフォルニア州セントラル・バレーの収監所の囚人や刑務官の間で、シリカおよび *Coccidioides* 真菌曝露の問題が増加している。

米国では、粉塵曝露による塵肺が発現して初めて、患者は公的な医療記録を所持し、補償を受けることとなる。塵肺についてのスクリーニングは、胸部 X 線のみで CT は基本的には使用されていない。核施設（電力・兵器）でのベリリウム曝露については、政府が検査を実施し、感作があった場合には、医療サーベイランスを受ける権利が生じる。

退役軍人については、退役軍人のための病院（UCSF にも存在）は、スクリーニングを提供する義務を要するが、退役軍人にスクリーニングを受ける義務はない（＝退役軍人から声を上げない限りスクリーニングは実施していない）。

最後に、トヨタのような多国籍企業における労災に対する退職後の補償について、参考になる情報がある可能性が指摘された。

訪問先 2 :

菅沼より「健康管理手帳制度による健康診断の諸外国での実施のための研究」に関する概略を説明。全米の現状について

も前会議同様の内容について説明があった。新たな情報としては、UCSF で説明があった通り、核兵器産業でのベリリウム曝露については国レベルでの補償がある炭鉱労働者については補償制度はあるものの参加率が低い。その主な理由としては、補償を受けることでその後の収入が下がる可能性があること、死後に肺の検体を提出する必要があることなどが考えられる。退役軍人への補償については、イラク戦争後にコホート調査が始まった（例：Millennium cohort, Depleted uranium cohort）ウランとシリカの職業曝露は、ネイティブアメリカンが多い。近年、新しいシステムの導入により、各州において死亡情報を個人情報と繋げる試みが始まっている。Harber 教授のヨーロッパでの国を跨いだ調査の経験をもとに、本調査実施にあたり以下の助言があった。

- ・ 異なる言語・文化などのため、一見単純に思える質問票調査ですらも困難になる可能性
- ・ 情報収集にあたり、個人情報を別の国に移すことも困難
- ・ ガイドラインの必要性（例：ベトナムなど他国の医師向けの診断に関するガイドライン）
- ・ 読影者が異なる場合の目合わせの必要性
- ・ 胸部 X 線と呼吸機能テストを組み合わせて実施

- ・ Email アドレスは比較的追跡が容易ではあるが、最も良いのは指紋など生体認証
- ・ 個人情報保護の一つの方法として Honest broker の活用
- ・ 診断に関わる医師も放射線医師・内科医・産業医など多岐にわたる場合も想定する必要有

D. 考察

先進国の一つである米国は、英国、アイルランド、ドイツ、イタリア等の欧州を初め、アフリカ、中南米、アジアなど、世界各地からの移民を受け入れてきた歴史を持つ。移民はそのまま米国社会に定住・不法滞在するか、母国に帰るが、1990 年には既に 2000 万人と日本の外国人労働者の規模の 10 倍に及んでいることから推察されるように、帰国後のフォローアップ体制は整備されていないどころか、国内での退職後のフォローアップもままならないのが現状であるという事実が浮かび上がってきた。このことから、本事業が検討する取組は前例のない画期的な取組であり、AI 技術等の進歩により言語の違いを超えやすくなった今後の国際社会においても意義のある取組であることが窺える。

E. 結論

訪問先 1 と 2 の報告では、米国の労災補償制度や健康リスクに焦点を当て、補償

の不足や国際的な課題が浮き彫りになった。異なる国での調査の複雑さも指摘され、個人情報の保護についてのアドバイスも共有された。これらの洞察は、労働者の健康と補償制度の改善に向けた重要な一歩となる。

F. 健康危険情報

該当なし

G. 研究発表

該当なし

H. 知的財産権の出願・登録状況(予定を含む)

1. 特許取得

該当なし

2. 実用新案登録

該当なし

