Global Occupational Medicine
Survey of IOMSC Members

Introduction

The International Occupational Medicine Society Collaborative (IOMSC) was established in 2013 to explore topics impacting workplace health globally, and identify issues of concern and common goals that unite practitioners of occupational and environmental medicine (OEM) worldwide. With the sphere of influence of OEM expanding and impacting millions of workers worldwide, one OEM physician is capable of impacting tens of thousands of employees and their families annually. As corporations become more global in nature, many OEM physicians impact not only workers, but also the communities in which these workers operate -- by participating in research and advice on international health issues, such as communicable diseases (e.g. Ebola and AIDS) and chronic diseases (e.g. diabetes and heart disease).

At the 2015 meeting of the IOMSC in Washington DC, participating societies requested a survey of IOMSC members to help quantify the reach of the IOSMC globally, common modes of practice, and key changes occurring in the workplace. The survey was implemented in July 2015.

As structured, the report is a descriptive study of IOMSC members regarding OM in their countries, as they have reported it to us. Comments and any information provided from the survey, are those of the delegates from the countries’ occupational medical organizations which may or may not be based on a survey of the members of the respective societies.

This report uses Occupational Medicine (OM) as a broad term to describe the professional sector for physicians and nurses who specialize in workplace health. In some counties, the sector is referred to as Occupational and Environmental Medicine and in others, Occupational Health or Occupational and Environmental Physician. OM, as used in this report, covers all these descriptions.
Survey Results

The Global Importance of Occupational and Environmental Medicine

In July 2015, the IOMSC had representatives from 30 of the 194 countries worldwide, or 15% of all countries. A survey to determine the reach of the IOSMC globally, common modes of practice, and key changes occurring in the workplace was sent out to the IOMSC delegates. Twenty-two of the IOMSC delegates completed the survey for a 73% response rate. The total population in the countries responding is 2,551,894,385 or 26% of the world’s population. The workforce population within these countries is 1,182,175,950.

Figure 1 – Percent of the World Population in IOMSC Member Countries

Of the IOMSC member countries responding, 90% (18) have national health/government-sponsored health care but only seven of these include occupational health services under the government system. When looking at the workers in the countries, 18% are self-employed; 54% work for small to medium size companies (1-300 employees); and 27% of the workers are employed by large companies; i.e., organizations with more than 300 workers.
When asked about the types of health care services offered by companies in their countries, respondents indicated that only 35% of companies facilitate primary medical care for their employees and of these only 10.5% facilitate primary medical care for families or dependents. At the same time, 75% of companies in the 22 IOMSC countries responding do provide health promotion/wellness activities for employees, but only 10% extend these activities to families or dependents.

**Figure 3 – Percent of Companies in IOMSC Member Countries Offering Health Promotions Services**
Questions were also asked regarding the physicians that work in occupational medicine within the countries. The majority of board-certified occupational physicians practice either in occupational medicine or public health. The most frequent activities of OM physicians worldwide in descending order are:

- Occupational health-risk/targeted screenings
- Traditional occupational injury/illness management
- Primary health care
- Return-to-work exams
- Pre-employment exams
- Administrative duties
- General health screenings
- Workers’ compensation
- Health promotion/disease prevention
- Evaluation of worksite environment
- Health education
- Disability management
- Training/teaching mentor
- Research
- Emergency medical care
- Safety assessment of workplace
- Health benefits management
- Evaluation of effects of worksite activities on external environment

The second part of the survey was a series of open-ended questions to assess the changes in OM over the last decade, opportunities for the future and how OM is responding to societal needs. Following is a summary of these responses.

**In your country, has the scope of the OM discipline changed over the past decade?**

Five countries indicated that OM practice changes were a result of legal or administrative provisions. Two countries (Brazil and Japan) mandate OM and in Japan and the Netherlands, legal changes have made sick-leave management a function of OM specialists. Estonia, has seen a restructuring of labor inspections, resulting in better and more thorough workplace inspections, as well as having access to regular statistics on occupational injuries. Hospital waste management is now more organized and controlled in Nigeria in large part due to the many multinational companies and a need to regulate practices among them. Many establishments follow through with their hazardous and non-hazardous waste disposal.

In the United Kingdom, the government introduced the *Fit for Work* service, which provides advice on occupational health and assessment for those with four weeks' sickness absence, at no cost to employers. While still in the early stage of implementation, *Fit for Work* is seen as supporting general practitioners (GPs) by providing a mechanism for them to obtain an opinion from an occupational health nurse (usually by telephone). It is unlikely to replace occupational health provision to employers, although from later in 2015 it will be possible for employers to refer employees with four weeks' absence for a *Fit for Work* assessment (usually by telephone).
Five of the delegates responding noted changes in the educational and post-graduate training of OM. For example, in Estonia the training program of OM physicians is adapted from European quality standards. After a six-year pre-graduate training, a four-year residential training period occurs, with continuous refresher courses on new risks in the workplace available for OM physicians, nurses and other occupational health specialists. Canada has seen an expansion in the breadth of the scope of occupational medicine, including enhanced prevention efforts, with a Specialty Committee supporting the Public Health and Preventive Medicine route for entry into occupational medicine. In Portugal, OM training evolved from a private training program into a medical internship training program in 2013, similar to other medical specialties. While the internship training program has been more formalized, a search continues for future training models outside the hospital context in order to broaden the internship experience into other sectors. About 50% of Norway’s occupational physicians have acquired specialty status in OM, so competence in the specialty has improved during the last 20 years. However, the overall number of occupational physicians has decreased (which is a tendency in Europe due to aging). South Korea has updated its definition of occupational medicine to “occupational and environmental medicine” to stress the importance of the environment on workplace well-being.

Another major change over the last decade has been in the types of illnesses and injuries that OM specialists are treating. Denmark has seen the numbers of traditional occupational diseases, such as lung, skin, intoxications, and muscle-skeletal decline, while the numbers of workers with work-related psychosocial stress and burn out has risen dramatically. About 30-50% of the patients in OM clinics in Denmark are patients with depression and adjustment disorders. In the United Kingdom, the prevalence of musculoskeletal disorders and mental health conditions is increasing and the aging workforce is becoming increasingly important. Wellbeing and prevention measures have a greater prominence as governments see the costs of treatment versus prevention. In Norway, there has been less of a focus on chemicals and ergonomics and more of a focus on health promotion. In general, due to the shift of production work to lower-income countries, the traditional occupational diseases have migrated out of the country, leaving only primarily older workers needing treatment for these diseases. This trend underscores the importance of adequate OM in the lower-income countries as an important point in political discussions regarding the role of prevention.

Health promotion and work ability improvement have also become important because of the rapid aging of population in the Netherlands. Japan has recently implemented risk assessment and autonomous risk management of chemicals due to the lack of sufficient industrial hygienists in that country. Over the last 20 years in Norway, occupational physicians spend more time on individual work-related health care (illnesses). Individual health care not related to work has been reduced. There has also been an increased focus on rehabilitation and return-to-work in Norway. Occupational physicians there spend very little time evaluating new work sites and buildings (ergonomics).

In Estonia, thematic health promotion campaigns are carried out each year depending on the EU’s annual program or campaign and moto. Different web-pages on OM topics are developed, including a work place risk-assessment e-tool, work stress assessment e-tool for companies, and other on-line tools www.tooelu.ee. In recent years, an annual prize for successful activities on occupational health and prevention has been awarded.

Australia and New Zealand report that the number of occupational physicians who were previously employed directly by large organizations has greatly decreased. Their roles have been outsourced to private consultants or corporate providers of occupational health services. This has occurred as a result of restructuring and cost-saving initiatives by large employers. Corporate health organizations provide OEM services to a wide range of different employers. They have subsequently tended to increase in size but reduce in total numbers -- due to the combined effects of growth, mergers and acquisitions. A high proportion of occupational physicians now perform Independent Medical Examinations (IME’s) or
medico-legal reports for workers’ compensation insurers, employers or lawyers. There is a significant focus on assessing the causation and effects of workplace accidents and injuries. Much of this is influenced by the nature of the workers’ compensation system in Australia. The role of the occupational and environmental physician (OEP) in the workplace is also changing as the country moves away from industrial/manufacturing industry to office based work. Australia in recent years has been working towards developing and implementing legislation that will be the same or similar across all states. The goal is to provide a uniform legislative system for work health and safety.

Malaysian authorities have come to the realization that allowing employers to voluntarily provide the full range of protection of workers' health (i.e. self-regulation) is not working effectively. The authorities have come to accept that there is a need for a great deal more enforcement to ensure employers fulfill their obligations to keep their employees safe and healthy in the workplace. However, small enterprises have fallen behind in terms of protection of their workers – a trend that is even more serious when one looks at the large number of documented and undocumented foreign workers in the plantation and construction sectors, who have minimal training on safety and health.

**How is the specialty of OM responding to your country’s current societal needs?**

All of the respondents (22) indicated that their country is responding to societal needs and addressing its national health and work agenda through active participation in the governmental process. Some of the countries cited national goals, such as:

- Seeking to build a safe, secure, equitable and stable society, based on effective institutions that provide the population with their basic needs.
- Defining employment and working conditions as determinants of health
- Including in the continuum of care illness prevention and health promotion, public health, screening, diagnosis, primary, secondary, and tertiary prevention, chronic disease management, and rehabilitation.

The specialty of OM has helped the economy and society at large by:

- Lowering sick leave and thus delivering a calculable benefit for companies
- Determining work-relatedness in assessing workers’ diseases
- Focusing on the aging work-population
- Addressing the public health challenges related to obesity and lack of exercise in the working population
- Concentrating on health-related activities in a wider spectrum, such as health promotion and return-to-work
- Supporting those at risk of falling out of work through sickness-related absence, and helping those with disabilities get back to work
- Increasing the role of occupational physicians in managing workers’ mental health
- Addressing Illicit drug use, particularly the increasing use of drugs such as methamphetamine and its impact on the workforce
- Increasing occupational risk evaluation, with a subsequent decrease in occupational accidents and injuries

At the same time, one of the IOMSC participants surveyed indicated that their country faces many unmet occupational health needs as a result of poor economic conditions. Greece has been struck by an economic crisis. Firstly, measures are needed to reduce the high unemployment rate and to develop a primary health care system. Following that, OM laws, training and practice might improve. The Hellenic Society of Occupational and Environmental Medicine (HSOEM) through sending and publishing letters
related to the improvement of occupational health to the appropriate State Authorities and the Hellenic Institute of Occupational Health and Safety (ELINYAE) through continuing education training courses for physicians and other professionals on occupational health and safety are doing their best to respond to Greece's current occupational health need. Until the economic crisis is addressed, focus on workplace health and safety issues is minimal.

What do you perceive to be the future of OM in your country?

Most (20) respondents were optimistic about the future of OM and believe there is an opportunity to rebrand and embrace the environmental component of OEM. Respondents articulated the perception that OM will evolve over the next 10 years, due to the characteristics of workplace changes, including new technologies. The recognition of mental health issues in the workplace is increasing and adjustments and services to address work/life issues and promulgating return-to-work policies in recognition of work as an important component in achieving health is was also considered important. Additionally, attention will need to focus on the aging workforce who will continue to have impairments that require attention.

Respondents also noted that OM should shift its main activities from secondary prevention -- such as periodic medical examination activities -- to primary prevention, and that OM should continue to participate in the risk-assessment of complex hazards, such as chronic low-level chemical/physical hazards, or psychosocial factors. OM should actively participate in health promotion for workers in order to increase the health of the aging workforce and its ability to keep working.

Eight of the respondents noted that the demand for specialists in occupational medicine will grow, for the reasons outlined above; i.e., the aging workforce, work/life balance, and psychosocial issues. It is unlikely that current capacity can meet the growing demand. The role of the OM specialist will increasingly be to provide guidance and assessment of complex cases, on referral, perhaps from better trained and supported general practitioners. Funding for OM specialists will be an important issue in the coming years, as will the need for better collaboration with other medical sectors. Many respondents indicated that the key to success will be to increase the provision of occupational medicine training to undergraduates and postgraduates across medicine, and for better referral channels to be developed.

At the same time due to the economic crisis in some countries, the advancement of OM principles will take time. The focus in the near future will be on raising the awareness of the need for OM and developing country-wide standards for health and safety in the workplace, particularly in light of some of the recent major workplace disasters such as:

- 2011 – Fukushima, Japan – Triggered by an earthquake, this is the largest nuclear disaster since Chernobyl. Plant workers were severely injured or died as a result of the conditions from the tsunami that resulted from the earthquake. The impact of the resulting nuclear fallout is not yet known.
- 2012 – Dhaka, Bangladesh – A fire in a factory killed 112 workers, including 12 jumping from windows to escape.
- 2013 – West Fertilizer Company Explosion – West, Texas, USA – A fertilizer company exploded due to the unsafe storage of ammonium nitrate. Fourteen workers died and another 160 were injured.
How will emerging technology impact the practice of OM?

Technology will play an essential role in the future of OM, according to survey participants, who noted that emerging technology will impact the discipline in several ways:

1. It will improve the reach of training in a country via telehealth, and the increasing use of webinars and other forms of e-learning for employers, as well as OM professionals.
2. Telemedicine has the potential to significantly add to the reach and scope of OM practice, and the use of telephone assessments will likely increase. There are potential benefits from the future development of effective applications (‘Apps’) for smart phones.
3. Technologies can assist in reducing risk factors and occupational hazards at the workplace (e.g. as a result of the introduction of new safer and “healthier” materials and production processes), with a consequent reduction in occupational accidents and diseases and their severity.
4. Electronic records will continue to improve record keeping but will also enable exploitation of data to better identify health and work needs (e.g. causes of sickness-related absence). Technology can assist in collecting and analyzing data both for improving safety in the workplace and in identifying and addressing health risks of employees.
5. Electronic (portal) referral systems for Web-based advice will emerge (e.g. risk advice for those who travel overseas).
6. Technology will increase the use of self-administration of risk assessments (e.g. ergonomic assessments) in office environments.
7. New occupational health hazards and risks will emerge, requiring updating and modification of OM practice as new technologies introduce potential novel exposures into the workplace. This will require hazard-assessment, diagnostic skill development and surveillance systems (e.g. attention to nanoparticles or new hazards in cutting-edge industries, such as the semiconductor industry). There may be short-term confusion and difficulty in implementing new protection measures – particularly if OM does not have adequate evidence-based information to back up the implementation of new technologies.
8. Technology will enhance epidemiological, exposure assessment, and gene analysis methods. Addressing ethical issues in pre-placement with new technologies (e.g. gene and environment interaction analysis) will require leadership from occupational medicine in the appropriateness of such testing.

What are the current and future human resources needs of OM in your country?

The number of OM specialists worldwide is small and fifteen of the respondents indicated that those in OM are older than 55 years of age and many foresee a lack of specialists over the next 10 years, and the current pipeline of trainees is not sufficient to replace retirees. Almost all (21) IOMSC participants surveyed indicated that there is a need to train greater number of OM physicians, but that marketing the specialty has been difficult. In some countries, internal medicine specialists have been those seeking further training in OM, but many have expanded the requirements allowing physicians in public health, preventive or aerospace medicine to train in occupational medicine. For example, the Japan Medical Association has developed a certification program for general practitioners in OM, in order to provide them the training and expertise to address routine workplace health and safety issues. However, the resource gap is large, is projected to continue, and will take considerable efforts to close worldwide.

What are the most important challenges facing OM in your country?
The challenges identified by respondents can be categorized into three major areas:

- Addressing the future complexities of illnesses/diseases
- Predicting and responding to future workforce needs and the need for OM manpower
- Increasing legislation/government’s support for OM and expansion to all types of businesses

**Future Complexities of Occupational Injury, Disease and Chronic Health Conditions**

The aging population is increasing the demand for OM services as more people are staying at work longer. Many older workers have one or more chronic medical conditions and/or risk factors, thus increasing the complexity of cases. This increasing complexity of cases and the need for appropriate assessment to determine if an individual is able to return to work and/or work at modified capacity will only continue as the workforce ages.

Further, increased stress on the job is a major factor across all nations and the need to address mental health and other stress-related issues is on the rise. More people with disabilities are entering the workforce and there is a growing need for expert OM advice on whether individuals have an impairment that meets the disability provisions in a given nation.

Several of the IOMSC participants surveyed indicated that there is a large burden of occupational injury and disease from migrant or seasonal workers that is not being met. How to integrate the health and safety of migrant workers will continue to be a challenge for OM. In addition, increasing the provision of OM services to small employers and remote and/or rural workforces is a challenge as the rise of these and other new factors in the workplace will add to the complexities of OM practice.

**OM Manpower**

As noted previously, survey participants strongly agree that the number of OM physicians is not sufficient to meet current demand and that with the changing complexity of workforce health and safety issues, demand will grow. In most nations, occupational medicine training is lacking in undergraduate medical curricula and it is difficult to attract residents into the specialty. An additional concern is the aging of the OM specialist: many survey participants indicated that 40% or more of the OM specialists in their countries were over 50 years of age and that with decreasing OM trainees, the shortage of OM specialists will only accelerate.

Promotion of the specialty to medical students and residents is paramount in order to meet the growing needs for OM. Determining how to meet the OM needs of employers and workers is a major challenge facing all countries.

**Legislation/Government Support of OM**

In a number of countries, OM is a component of the national health insurance program and/or is mandated by national legislation. However, most countries do not have a national mandate and it is a challenge to educate employers, businesses and the government on the need for OM. Survey participants believe a better understanding is needed by governments, labor and health sector managers, and politicians of the common scope and core functions of OM. Convincing society, blue and white collar workers, employers' and workers' organizations, government and academia that expansion of OM services will result in multiple benefits will lead to healthier and happier working lives, which will in turn boost productivity and the economic vitality of nations.
What are the main difficulties that OM practitioners in your country encounter in their positions?

Survey participants overwhelmingly indicated that the major difficulties in their countries are centered in the lack of understanding of the scope of practice and the value of OM specialists by businesses and the government. In many countries, there is a reluctance of employers to recognize OM as a legitimate endeavor for all persons at work, and they do not understand the value OM can bring to the business. In many countries, untrained general practitioners are providing OM services to industries but do not understand the unique challenges of OM.

Even in countries that mandate OM, private OM practitioners operate outside the government system, resulting in issues with cost and overall care. In some of the countries with a national health service, OM is not incorporated into the system and thus patients must pay a premium for these services. Some survey participants expressed the opinion that the nature of socialized medicine is that accountability for the costs of health care and health risks are not transparent, creating challenges in incentivizing employers to invest in occupational health. A number of survey participants also noted that there is an absence of guidelines and standards and supporting legislation for health and safety in the workplace.

CONCLUSION

The July 2015 survey was sent to IOMSC representatives in 30 countries who are representatives of the country’s occupational medical society. Twenty-two IOSMC members completed the survey for a 73% response rate. The 22 countries responding represent 26% of the world’s population and include developing countries. The challenges and opportunities among the countries are similar and reflect the ongoing concerns of the ability to protect workers and assuring they return home at the end of the day the same as they came to the workplace.

Key challenges include the ability to:
- Address the future complexities of illnesses/diseases
- Predict and respond to future workforce needs and the need for OM manpower
- Increase legislation/government's support for OM and the expansion to all types of businesses

At the same time, there are opportunities for OM specialists to have an impact. Almost all IOMSC participants indicated that their country is responding to societal needs and addressing its national health and work agenda through active participation in the governmental process. Some countries have national goals that seek to build a safe, secure and equitable society and are defining employment and working conditions as determinants of health.

The IOMSC must look at the area where they can be most useful in assisting member countries in moving occupational and environmental medicine to the forefront. Such endeavors may include:
- Communications on the role, scope and importance of OM for workers
- Including in the continuum of care illness/injury prevention and health promotion
- Promotion public health screenings at the workplace
- Enhancing primary, secondary and tertiary prevention programs in the workplace, and
- Providing OM training to non-board certified OM physicians to broaden the understanding of all physicians the role work and workplace issues has on an individual’s health.
The IOMSC will consider developing one to three projects which address the concerns of their members and will develop global information for use by all OM specialists.