



Preventing work-related disease

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Dr. Kamalesh Sarkar, director and senior scientist at the Indian Council of Medical Research-National Institute of Occupational Health (ICMR-NIOH) Ahmedabad, explains the work the ICMR-NIOH is undertaking to help prevent and reduce cases of occupational disease in India.

How effectively do you think India is managing the risks to the health, safety and wellbeing of all workers

India has been continuously trying to improve the national occupational health scenario, including lowering the risks to workers' health and improving workers' safety and wellbeing.

So far, the issue of tackling occupational health, safety and wellness risks remains largely ignored in the unorganised sector (the informal economy sector). However, most of the organised sectors have their general structure in place for addressing risks to workers' health, safety and wellbeing.

For example, a number of employers in the organised sector have a healthcare service or a medical division that seeks to eliminate, reduce or manage the occupational health risks faced by their workers. This includes providing periodic screening for employees to check for the early signs of work-related ill health and disease and taking the required intervention measures to prevent the health condition getting worse.

There is also a large network of ESI (Employees' State Insurance) hospitals and treatment centres all over the country that offer medical services for employees working in various industry sectors, such as in certain factories.

The ESI hospitals provide a variety of health services to the employees covered by the ESI scheme and their family members, or dependents. As well as medical treatment and care for general health conditions unrelated to the individual's work, the ESI scheme generally covers the detection and treatment of all sorts of locally prevalent occupational diseases.

The ESI scheme is funded by financial contributions from both the employer and the employee, so it is essentially a form of health insurance for certain workers in India.

If an employee who is covered by the ESI scheme develops one of the compensable work-related diseases covered by ESI, a board of medical experts at ESI certifies this. If the disease is considered to be caused by the individual's work, they are granted financial compensation.

What are the main activities and goals of the ICMR-NIOH

The Indian Council of Medical Research-National Institute of Occupational Health (ICMR-NIOH) has been working for many years towards improving the management of occupational health risks in India.

ICMR-NIOH is an occupational

health research institute funded by the Government of India that is responsible for helping the national policy makers to develop the most suitable and effective policies for eliminating and reducing cases of serious work-related ill health and disease. The ultimate goal of ICMR-NIOH's work is to reduce the burden of the occupational diseases that have the greatest negative impact on both public health and the productivity of the economy in India.

To achieve this goal, ICMR-NIOH undertakes and oversees multi-disciplinary research aimed at developing the most effective technologies and programmes for controlling workers' exposure to health hazards.

Our research enables us to provide the national policy makers, such as the Ministry of Health and Family Welfare and the Ministry of Labour and Employment, with expert advice on the most effective ways of controlling occupational diseases in India. The aim is to help the Government of India to make the most appropriate decisions when developing the national policies for improving occupational health in the country.

Currently, the main priorities for our research and our work in developing control technologies are focused on preventing respiratory diseases caused by exposure to harmful dust at work.

We also aim to conduct research and develop ways of preventing and controlling other occupational diseases. These include heavy metal poisoning, pesticide poisoning, noise-induced hearing loss (NIHL) and musculoskeletal disorders in various industries.

Another important aspect of our work is developing education programmes for training the country's doctors and other medical professionals on occupational healthcare.

The idea is to boost the doctors' knowledge of the causes of common work-related diseases in India. This will help to ensure that doctors in

hospitals understand how to spot the symptoms of serious work-related diseases and know to provide suitable medical treatment for workers who are developing work-related diseases.

What kind of projects is the ICMR-NIOH currently undertaking to help prevent and reduce cases of work-related ill health and disease in India

ICMR-NIOH is currently carrying out an important project aimed at identifying a possible way of detecting the early signs and symptoms of the occupational lung disease silicosis in Indian workers.

Silicosis is a serious and irreversible lung disease caused by inhaling dust containing respirable crystalline silica. The risk arises during work activities such as cutting, crushing, chiselling and sanding substances such as stone, rocks, sand and clay.

Silicosis is one of the most prevalent occupational diseases in India. It is estimated that between three to eight million workers are exposed to silica dust daily while working in environments such as mines, factories, quarries and foundries, and while undertaking certain types of work in their homes, such as stone polishing.

Silicosis causes severe shortness of breath and sufferers often die prematurely due to cardio-respiratory (heart and lung) failure.

Workers who develop silicosis are also at increased risk of developing

tuberculosis, due to their reduced lung immunity.

Tuberculosis remains a significant cause of death in India. Therefore, if we can prevent and reduce the number of cases of silicosis among workers, it will help to eradicate tuberculosis in India.

We are conducting research to try to identify a possible biological marker (biomarker) that could be used to detect the possible early signs of silicosis among workers exposed to silica dust. A diagnostic test that highlights the presence of a biomarker in an individual may indicate that the person is at risk of developing a specific disease. So, if we are able to develop a biomarker for silicosis we may be able to detect the symptoms at an early stage. This would therefore help to prevent workers from developing the disease.

Our ultimate goal is to develop a 'point of care' diagnostic device that could identify the status of a potential biomarker that might signify the early signs of silicosis in a patient who is tested.

We then hope to carry out a wider study to test the effectiveness and reliability of the potential biomarker and the diagnostic device and test.

If this proves successful, we would then hope to recommend to the government that the diagnostic test for signs of silicosis should be made available to all workers who are at risk of developing the disease.

For workers in the organised sector, this could be provided by their

employer through the medical services they provide to their workers.

For workers in the unorganised sector, the diagnostic test could be made available through primary health care centres.

The early detection of diseases such as silicosis is vital because, if the warning signs are spotted at an early stage through periodic screening, a doctor or nurse can advise the worker on the action to take to prevent the condition getting worse. For silicosis, this might involve stopping work that involves exposure to silica dust or using protective equipment that helps to prevent exposure to silica dust.

Also, if an occupational disease is not detected until the later stages, the risks of permanent disability and early death are much greater.

We are also working on a separate project with the Public Health Foundation of India (PHFI) to develop a training course so that doctors and physicians working in local hospitals, and private medical practitioners, can receive appropriate training on occupational healthcare.

The idea is that primary healthcare physicians will be given appropriate training on issues such as the causes of common work-related diseases, ways of preventing them and how to diagnose and treat these conditions.

The aim is to ensure that workers in the unorganised sector have access to physicians in local hospitals (known as primary healthcare centres) who have the necessary knowledge to prevent, identify and treat common work-related diseases, such as silicosis.

Currently, physicians working in primary healthcare settings – such as hospitals in rural areas – are not provided with training on how to prevent and treat work-related diseases. This means that workers in the unorganised sector – who can seek medical treatment at the primary healthcare centres – do not have access to physicians who understand how to spot and treat work-related diseases.

Therefore, we are working with the Public Health Foundation of India to draw up a standard training programme that could be used to train primary healthcare physicians on preventing, diagnosing and treating work-related diseases.

We intend to propose to the Ministry



Silicosis from inhaling stone dust is a common disease in India. Photograph: iStock/JosuOzkaritz

of Health and Family Welfare and the Ministry of Labour and Employment that the training programme becomes a national policy. If it is adopted as a national policy, we hope that all State and Union Territory governments will then provide funding for the primary healthcare physicians to undergo the necessary occupational health training.

This would mean that workers in the unorganised sectors, many of whom are migrant workers, would for the first time have access to doctors with the expertise to prevent, diagnose and treat occupational diseases.

We propose that the occupational health training would be provided to the primary healthcare physicians at our three institutes in Ahmedabad, Bengaluru and Kolkata.

What kind of measures could be taken to help improve the health, safety and wellbeing of India's workers

India has a workforce of around 465 million people. However, more than 90

per cent of the workforce works in the unorganised sector, and they do not have access to any medical expertise for preventing, diagnosing and treating cases of work-related disease.

Therefore, I would like the government to adopt a policy to ensure that all primary health care physicians are provided with formal training on how to prevent, diagnose and treat occupational diseases. This would enable the primary healthcare physicians to provide workers in the unorganised sector with basic healthcare aimed at preventing, detecting and treating common work-related diseases. This could be provided through primary healthcare centres and wellness centres across India.

I would also like to see a national awareness campaign carried out to educate workers, managers and the general population about the health risks of exposure to hazardous substances, such as silica dust.

In India, public awareness of the health risks posed by exposure to

substances such as silica is generally low. For example, many workers are unaware that inhaling silica dust during activities such as cutting up stones can cause serious and fatal respiratory diseases.

A public awareness campaign – for example, using social media – could help to encourage workers to protect themselves from inhaling silica dust. It could also encourage workers to seek medical advice and check-ups if they think they might be at risk of developing respiratory diseases from their work.

Also, greater public awareness about the causes of work-related respiratory diseases could encourage employers in India to do more to protect workers from inhaling harmful airborne substances.

This would lead to an overall improvement in public health in India.

For a profile of Dr. Kamalesh Sarkar see:

nioh.org/scientists/nioh/director.html



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