OCCUPATIONAL HEALTH AND SAFETY IN ANDHRA PRADESH
with recommendations for priority actions

Report for Dr Mala Rao, Director, Indian Institute of Public Health, Hyderabad

By Dr Naomi Brecker MA MBBS BSc DOccMed FFPH
Occupational and Public Health Physician, Royal Free Hospital, London

24th February 2010

Introduction

Occupational Health and Safety issues in India, as is not uncommon, encompass a large scale. India has a working age population of approximately 500 million, the majority of whom work in the unorganised sector, with less than 10% of the working population covered by Health and Safety legislation. The media frequently reports on accidents at work resulting in numerous fatalities, for example 12 construction workers killed when the building they were working on collapsed], 2 workers dying from a leak of liquid ammonia, 2 nurses and a patient dying of smoke inhalation following a fire at a hospital and a dock worker drowning after falling into deep water. The above cases all took place within a one week period in Andhra Pradesh. [15] For the whole of India, the expected annual number of occupational fatalities is 36,700. This figure is based on estimates using the Malaysian average reported fatality rate (11.0 per 100,000) as there is serious under-reporting of workplace accidents and deaths and a paucity of reliable data from India. [8] Further estimates set the number of occupational injuries per year at 18,300,000 and the number of occupational diseases 1,850,000 per year for the whole of India. [14]

In addition to harm caused to workers by their work, there is a huge burden of chronic and infectious diseases, particularly amongst lower paid workers & unorganised sectors, and this will affect their fitness for work. However access to occupational health services is extremely limited. There is little provision of occupational health services outside larger national and international industries, a huge shortfall in trained occupational health professionals and limited provision of specialist training. [10] Medical services attached to companies and factories largely focus on diagnostic and treatment services and not occupational health interventions, although exemplars of excellent practice do exist. Globalisation and rapid industrial growth, including transfer of hazardous industries, adds to the complexity of occupational health related issues in India. And an added barrier to progress has been longstanding apathy, amongst local and national Government, employers and employees themselves. [9] This may change with a new national policy on safety, health and environment at workplace (Government of India February 2010). Whilst the document demonstrates laudable intentions ‘to ensure safe and healthy working conditions for every man and woman in the

nation', it currently lacks any practical plans for implementation or designated resources to achieve results. [3,6]

This paper briefly discusses the need for a focus on Occupational Health for people of working age in Andhra Pradesh. It describes the policy initiatives and the legislative cover and explores what data is available. It looks at the current barriers to increasing access to services for the working age population and makes recommendations for priority areas for action, namely the health and wellbeing at work of construction workers, the protection of healthcare and hospital support workers against blood borne virus infection.

What follows is based on my assessment of primary and secondary sources of information supported by observations made during several workplace visits and information presented at the 2010 Indian Association of Occupational Health conference in Hyderabad. The assumptions and conclusions are my own.

Fact finding

This paper is based on a visit I made to Hyderabad from 2-12 February 2010, together with information retrieved from relevant online searches. During the visit I was based at the Indian Institute of Public Health Hyderabad, affiliated to the Public Health Foundation of India. I attended the annual conference of the Indian Association of Public Health in Hyderabad, hearing a range of issues presented during plenary sessions and research paper discussions and having the opportunity to network with occupational professionals from across India.
I visited examples of workplaces to discuss occupational health issues and services provision for employees. These included the State-owned Gandhi Hospital where I was shown around by Dr Ashok Kumar, Medical Director; LV Prasad Eye Institute where I lead a seminar for staff on occupational health issues affecting healthcare workers; Matrix Laboratories Ltd (a leading pharmaceutical production company and part of Mylan USA Inc) where the occupational health provision was demonstrated by Dr Prem Raj Bhargava, I was shown around the site by the head of safety and I met Mr Sunil Kulkarni, Associate Vice President; and Hyderabad Industries Ltd (a leading producer of building materials and part of the Birla group of companies) where the Occupational Physician Dr Vivek Chandra Rao, a leading authority on health surveillance, monitoring and controls for asbestos workers, talked to me about the company's practices around protecting employees and showed me the facilities for health surveillance. I am grateful to everyone who generously gave their time to show me around and answer my questions.

Employment sector in Andhra Pradesh

The following information has been taken from a report on Andhra Pradesh that was produced as part of the National Inventory on Occupational Safety and Health Information project coordinated by DGFASLI through its five Labour Institutes, joining up with State Factory Inspectorates. The Andhra Pradesh report was produced by the Regional Labour Institute, Chennai and the Directorate of Factories, Hyderabad between 2003-04. [5] The report sets out information on demographics, economic activities, manufacturing sector activities, occupational injuries and diseases, and the management of occupational safety and health, but acknowledges that the data is incomplete, being based on returns from only 30% of registered factories. There is minimal analysis of resources available and needed.

Andhra Pradesh State was formed in 1956 in South West India. It covers 8.4% of the total area of India but contains 7.4% of the population (75.7 million in the 2001 Census). The State capital city is Hyderabad. Literacy levels are presented as high for India, at 71.4% males and 51.5% females. According to the report, there are natural resources, fertile land, water and conducive agro-climatic conditions, being the largest rice producer in India and a leading producer of cash crops such as tobacco, chillies, oilseeds, sugar, cotton, jute. In addition Andhra Pradesh has experienced significant corporate growth, particularly in the pharmaceutical, IT and call centre sectors. Like the rest of India, although there has been significant economic growth in recent years, the infrastructure has struggled to keep pace with expansion and development.

In the report the principal economic sectors are shown as:

- Agriculture & fisheries 58%
- Services 22%
- Manufacturing, mining & construction 14%
- Others 6%

Of the workforce,

- <10% work in the organised sector
- 60% are self-employed
- 30% do not have regular jobs

According to the DGFASLI report, the size of the working population in Andhra Pradesh is 28,445,482 (based on the 2001 Census), working in the following sectors:

Agricultural workers	11,625,159 (40.9%)
Processing, servicing and repairs	955,507 (3.4%)
Mining and quarrying	247,191 (0.9%)

The report is vague about the remaining 54.8%, citing employment data from one third of the State's registered factories that submitted an annual return. These

employed around 385,000 workers (1.3% of the working population). This paucity of reliable data on employment was confirmed by the Director General of DGFASLI in his presentation to the IAOH conference.

Health and wellbeing of the working age population in India

The major causes of occupational morbidity in the country are believed to be:

- Silicosis
- Coal workers' pneumoconiosis
- Musculoskeletal injuries
- Chronic obstructive lung disease
- Asbestosis
- Byssinosis
- Pesticide poisoning
- Noise induced hearing loss

However there is no reliable source of mortality data by cause and no morbidity data to illustrate the scale of any problem, corroborated by bio-statisticians at the Indian Institute of Public Health, Hyderabad.

What is better elucidated is the huge burden to the Indian economy of chronic disease. For example, between 2005 & 2015 India is projected to lose $200 billion through loss of productivity as a result of morbidity and premature mortality from heart disease, cerebrovascular accidents and diabetes. Men and women are equally affected. In India, 50% of the chronic disease burden is in people aged <60 years and chronic diseases are concentrated amongst the poor, for whom sickness and hospitalisation in a family wage earner is a major perpetuator of poverty in Indian families. [1]

For occupational fatalities in the State, 99 fatal accidents were reported to DGFASLI in 2002. However, applying occupational fatality rates from a comparable economy, Malaysia, to the 385,000 workers employed by companies submitting a return, the expected number of fatalities would rise to 385 (using a rate of 11 fatalities per 100,000 workers). Applying the same rate to the Andhra Pradesh working age population would give a further ten-fold rise in incidence to 3134 expected fatalities. There is clearly a large hidden problem. Andecdotally, I was told that employers are reluctant to report occupational fatalities and injuries to avoid any repercussions.

A further 2,316 non-fatal occupational injuries were reported to DGFASLI in 2002. The causes of reported workplace accidents were as follows:

	% total accidents
Fall of person	11
Fall of object	13
Stepping, striking, struck against	26
Caught between objects	11
Over exertion or wrong movement	2
Exposure to or contact with extreme temperature	1
Exposure to or contact with harmful substances	2
Others	34

Statutory provision for Occupational Health in India

Under the Constitution of India there are detailed provisions for the rights of citizens and Directive Principles of State Policy are set down. These provide:

- For securing the health and strength of employees
- That the tender age of children is not abused
- That citizens are not forced by economic necessity to take on tasks not suited to their age or strength
- Just and humane conditions of work and maternity relief provided [2,6]

Occupational health and safety legislation covers four sectors only. These are:

factories (under the Factories Act 1948),
mining (under the Mines Act 1952),
ports (under the Dock Workers (Safety, Health & Welfare) Act 1986) and
construction (under the Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act 1996).

Taken together, this legislation provides statutory safeguards and cover for under 10% of the working age population. Of the remaining >90%, by far the largest group is agricultural workers who are primarily unorganised and for whom suicide with pesticides is a particular issue.

The Factories Act 1948 is umbrella legislation, including within its' scope the following defined premises:

10+ workers AND a manufacturing process using power
OR
20+ workers AND manufacturing process without power

The Act underwent major revision in 1987, triggered by the Bhopal tragedy in December 1984, with the addition of a chapter on occupational health and safety. This set out requirements as follows:

- Owners' responsibilities enhanced
- Health and Safety policy in place
- Risk assessment to define hazardous processes
- Information to workers, inspectorate and public

- On site occupational health facilities defined, all hazardous plants must have occupational health centre
- Qualification and attendance of doctors specified
- Pre-employment and periodic medical examinations and monitoring of work environment mandatory for industries defined as hazardous under the Act
- Maximum permissible limits set down for a number of chemicals

Enforcement of the Factories Act falls to State Factory Inspectorates, of whom there is an insufficient number. The DGFASLI report lists the following enforcement workforce to cover all States in India:

- 1,400 safety officers
- 1,154 factory inspectors
- 27 medical inspectors

Given the scale of industry and the size of the workforce this is clearly inadequate. [3,6] Enforcement is predominantly in the organised sector (referred to as the 'pampered sector' in the Director General's presentation at the IAOH conference) while the unorganised sector, where an overwhelming majority of India's working age population is engaged, gets neglected.

The Factories Act requires hazardous industries to provide medical facilities for its' workers and again the Director General of DGFASLI described 'gaping holes' in provision. In 2008, there were 719 full time medical officers in hazardous industries in India, against a requirement for 3403 posts, and 385 part time medical officers against a requirement for 1311 posts.

The following list sets out legislation touching on workplace issues and demonstrates the limitations in Government activity in providing statutory and regulatory safeguards for India's working age population:

Explosives Act 1884
Indian Electricity Act 1910
Indian Boilers Act 1923
Petroleum Act 1934
Plantation Labour Act 1951
Mines Act 1952
Indian Atomic Energy Act 1962
Beedi and Cigar Workers' (Conditions of Employment) Act 1966
Insecticide Act 1968
Dock workers (Safety, Health & Welfare) Act 1986
Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act 1996

The Building and Other Construction Workers Act is the most recent legislation, requiring States to take measure to regulate service conditions for construction workers and to implement social security and welfare measures funded by a 1% tax on the cost of construction to be paid by employers and a registration fee plus

annual subscription paid by the construction workers to State Welfare Boards set up under the Act. Andhra Pradesh instituted State Rules to set up a Welfare Board in 1999.

Responsibility for occupational health & safety falls under the Ministry of Labour and Employment and not the Ministry of Health. Occupational health services, where they exist, are not integrated with primary health care. The Ministry of Labour is responsible for the implementation of the:

- Factories Act 1948 via its' Directorate General Factory Advice Services & Labour Institute (DGFASLI)
- Mines Act 1952 via its' Directorate General of Mines Safety (DGMS)

DGFASLI provides technical advice and assistance to the Ministry of Labour in formulating national policies, support to State Factory Inspectorates in enforcement and offers short courses in Occupational Health and Safety via 5 regional centres. These courses are a requirement for health and safety personnel in factories but can only briefly cover what should be a large syllabus in the limited time available.

Capacity and potential for capacity building of occupational health expertise in India

There is a significant shortage of occupational health professionals in India. From information presented at the IAOH conference:

- Number of qualified occupational physicians <1,000
- Number of qualified hygienists <100
- Occupational health nurses do not seem to exist but some occupational health centres in industry employ technicians to support the physician.

Using WHO recommendations, India requires 100,000 occupational health professionals to cover the whole working population, presenting a major challenge should any initiatives aimed at building capacity be undertaken.

From talking to a number of occupational physicians, their training and experience prior to taking up a post in occupational health is general or respiratory medicine. Some take one of the short courses available in India (see below). There is not standard setting body for occupational medicine in India and hence no competence-based syllabus or guidance in expected standards of practice. There is no specialist registration for occupational physicians in India. The Indian Association of Occupational Physicians, an active professional society with regional branches and a national executive, holds an annual conference and is the only focus of professional organisation. It does not currently have any contact with standard setting bodies in other countries, for example the UK's Faculty of Occupational Medicine.

There are limited resources for Occupational Health research and training in India. Due to shortage of time I was not able to visit any of the academic centres for Occupational Health. The following covers the majority of the available research and training resources:

- National Institute of Occupational Health (Ahmedabad), funded by Indian Council of Medical Research, offers training, undertakes research and advises Government
- Central Labour Institute (Mumbai) – statutory training for medical officers employed in hazardous industries (with regional centres in Kolkata, Chennai and Kanpur)
- Industrial Toxicology Research Centre, Lucknow
- Mahatma Gandhi Labour Institute, Gujurat
- Institute of Industrial Engineering, Nagpur
- Central Mining Research Station, Dhanbad
- A few medical colleges and research institutes offer postgraduate courses e.g. Sri Ramachandra Medical College Chennai, All India Institute of Hygiene and Public Health, and others in Bangalore and Kolkata
- Public Health Foundation of India accepts that Occupational Health is part of its remit and is due to include occupational and environmental health as a second year option in an MPH course starting next year.

Case studies from Industry

There are some examples of good occupational health practice in industry in India.

I visited Matrix Laboratories Ltd, part of Mylan (USA) Inc, which runs a number of pharmaceutical production plants in India and China. It is a growing company which has a strong safety ethos. It employs 4,500 people in India (1,500 in Hyderabad) and has a lead occupational physician who oversees a general physician working out of an occupational health centre in each of its plants. The company produces around 140 pharmaceutical products (including many popular compounds for common clinical conditions) and manufactures around 30% of the world market in antiretroviral drugs. Hazards for workers include exposure to solvents and to potent pharmaceutical chemicals and there is an emphasis on health and safety in all the plants. The company has generous sick pay arrangements for employees (although I was told sickness absence was not an issue) and provides medical insurance for workers and their families. Rehabilitation and redeployment are available as options within the company if needed. The occupational physician has a programme of pre-employment health screening and annual monitoring for staff. Accidents at work, apart from very minor injuries, have not been a problem and no adverse effects associated with exposure have been picked up to date.

Another visit was to Hyderabad Industries Ltd, the flagship company of the Birla group of industries. It is a leading producer of cement and building materials and uses chrysotile (white) asbestos in its products. The company has employed an occupational physician for many years and has provided a custom-built occupational health centre at its headquarters site (with two physicians supported by technicians) and health centres at all other sites. The occupational health centre has the necessary x-ray machine and surveillance equipment and can also analyse blood tests and undertake microscopy to assess asbestos exposure from personal sampling. The occupational physician, an experienced respiratory physician, is recognised as a leading authority on occupational health issues associated with asbestos exposure and had contributed to the International Labour Organsation's code of practice on safety in the use of asbestos. The company employs 500 blue collar and 500 white collar workers. All workers undergo a pre-employment health check (including a baseline chest x-ray, spirometry, ecg and routine blood tests) and annual follow-up screening (with 3 yearly chest x-rays). I was told retention was high and that workers could be followed up for the whole of their working careers. The company kept medical records for 40 years, but admitted that around 50% of workers were lost to follow up once they had left the company. In previous years blue asbestos had been in use and two cases of mesothelioma had been diagnosed in workers to date. The company provides hospital care or medical insurance for its' workers and their families (depending on site) and a smoking ban has been in place since 1982 (important because of the synergistic effects on cancer of smoking with asbestos exposure). Personal sampling and regular environmental air sampling is undertaken (the company employs industrial hygienists) and processes in place (such as wet milling, enclosure and regular vacuum cleaning) to minimise exposure to dust. I asked about company responsibility to construction site employees who would be using asbestos products in unmonitored conditions and was told that the company printed precautionary advice on the back of its' invoices to builders and had included 'inhalation of asbestos is injurious to health' on the company logo that is put onto products.

Other large, and predominantly multinational, companies are adopting a wellness at work agenda, having been convinced by the growing body of evidence of the business case for investment in employee wellbeing which encourages better attendance, engagement and productivity at work. Examples presented at the IAOH conference include:

- Unilever
  - Business case for healthy employment compelling
  - Healthier workers have better engagement & performance
  - Occupational health can add value via health promotion activities
- Cisco
  - Blend workplace health and safety with personal health enhancement via 'health connections' programme aimed at attracting and retaining valued staff

- Reliance
  - Engineering solutions to minimise hazards
  - Engaging poorly literate workers to improve H&S compliance
  - Shift traditional Indian OH focus from identification & treatment to informed monitoring within context of preventive strategy
- Cairns
  - Occupational health management systems including health impact assessment and health promotion/harm prevention initiatives (including medical fitness, wellness, hygiene & sanitation, training & awareness)

An event focussed on 'Workplace Wellness as a Strategic Imperative' was held in New Delhi in November 2008. Supported by both the World Economic Forum and the World Health Organisation it was attended by the Chief Medical Officer from the Ministry of Health, the President of the Public Health Foundation of India and leaders from Indian and international industry, including Reliance and British Telecom. It is part of an ongoing initiative.

An example of a health promotion at work initiative being undertaken in Hyderabad is 'Prevent India '10' lead by the Medwin Heart Foundation and aimed at improving lifestyle factors and reducing the prevalence of preventable causes of cardiovascular disease, diabetes and stroke.

All these initiatives are laudable but the coverage is extremely limited and they are not currently backed up by systematic action to include larger sections of the working population.

Healthcare workers – protection from blood borne viruses

Andhra Pradesh, like the rest of India, has a large healthcare workforce engaged in the Government-funded and the private and charitable sectors. In common with workers in other health economies, needle stick injuries (including blood and body fluid contamination incidents), musculoskeletal symptoms and stress are issues impacting on the health and wellbeing of healthcare workers. Again, there are no nationally collected statistics to indicate the scale of any problems.

I visited one Government-funded hospital which had 1512 beds and had cared for over 51,500 inpatients and 543,600 outpatients in the preceding year. The staffing levels were:

Doctors	604
Nurses	431
Admin	50
Class IV workers (e.g. sweepers, cleaners, guards)	265

I was told by the Medical Superintendant that the sickness absence rate was about 20%, particularly amongst the Class IV workers and that problem alcohol drinking was an issue. There was no occupational health service for staff. One

of the RMOs might be asked to request a report from a staff member's doctor and staff members could consult doctors who worked at the hospital. I was told (by a Consultant Psychiatrist) that work-related stress could be an issue and he recognised that unhappy staff did not give the best care to patients. However he described stagnation in the workforce with little motivation for change and accepted no personal responsibility for doing anything about it. Informal support could be made available for staff experiencing mental health problems but he believed that family networks absorbed any problems. Musculoskeletal problems were not raised as an issue, but with no focus on occupational health the anticipation, prevention and treatment of any such conditions in staff did not seem to be covered. The hospital was aware of the need to dispose of biomedical waste safely and the responsibility for overseeing this rested with one of the RMOs. A staff member conducted training for staff and carried out regular inspections, but not systematic audits of practice. Colour-coded rubbish bins covered with loose lids, including the sharps bins, were available at fixed points in clinical areas. A wheelbarrow full of different coloured waste bags was left unattended in the main hospital corridor. Disposable needles and syringes were provided but the needles did not have safety guards. I was shown needle cutters and told staff were expected to use these prior to disposal. Staff had gloves and disposable face masks to use, but 2 phlebotomists were observed during our walk round the hospital not using gloves, including in the phlebotomy room of the HIV clinic. In another room in the HIV clinic 3 unsheathed needles were in an open bowl of fluid left on a counter. Staff who experienced a needlestick injury could report to the HIV service where source patient testing and follow up blood tests for blood borne viruses would be organised and post exposure prophylaxis was available. Starter packs of PEP were also available for self-administration in the Emergency Department, maternity department and theatres. A manual register of staff seen in the HIV clinic for PEP was kept, with 56 cases logged over a period of about 2 years. The breakdown between different staff groups was not clear, but I was told that it was predominantly doctors and some nurses. I was told that Hepatitis B immunisation was available for staff but I could not ascertain coverage and whether all staff in contact with blood and body fluids (including class IV workers) were immunised.

My findings have been corroborated in a number of largely descriptive studies of needle stick injuries amongst healthcare workers which suggest varying levels of reporting amongst different healthcare workers and often absence of class IV workers within the staff groups studied. Of 38 self-reported injuries in one hospital in one year, 80% were in doctors, 10% in nurses and 10% in other staff groups including domestics. [11] However another study looked at the health status of class IV workers in a charitable rural hospital and found that more than 60% of them had experienced needlestick injuries, but less than 20% had been immunised against Hepatitis B. One third had little or no information about contamination incidents and what to do. Of other health issues, 73% were found to be anaemic, many were underweight and alcohol and tobacco (smoked and chewed) use was prevalent. [7] Surveys suggest a high prevalence of needle

stick injuries in staff that seem to be missed when self reporting is relied on. One study found that 53% of healthcare workers had experienced a needle stick injury at least once during their employment at the hospital. [4] Another survey (with a response rate of almost 90%) found that 33% of staff had been exposed to blood and body fluids in the previous 12 months, with 92% of the exposures being needle stick injuries. Nurses were the occupational group with the highest number of exposures and only 50% of all staff reported the exposure. [13]

A brief reading of the literature confirms a high prevalence of blood and body fluid contamination incidents amongst health care staff and a tendency not to report incidents, possibly because of reduced awareness of the possibilities for preventive care. I am not able to comment on the level of coverage with Hepatitis B immunisation of all workers in contact with blood and body fluids but would be concerned that class IV workers seem to be a forgotten group. Given the high prevalence of blood borne virus infections, particularly Hepatitis B and HIV, in India, and the ready availability of Hepatitis B immunisation and drugs for post exposure prophylaxis, this could be a possible focus for Public Health intervention.

Construction workers – observations around unmet need for health and safety improvements and protection

There are daily examples of unmet need for improvements in the occupational Health and Safety experience of construction workers. These include:

- Report of accidents in newspapers (for example, 12 construction workers killed on site when a building collapsed in Hyderabad in February 2010 [15]
- Observed state of building sites
    - wooden scaffolding poles roped together
    - no safety notices
    - no signs of safety equipment (hard hats, harnesses, appropriate footwear and clothing)
    - women and children on site

At a conference on Urban Health organized by the Indian Institute of Public Health Hyderabad, a senior police official commented on the state of construction sites, the high level of accidents and concerns for migrant workers, particularly women, who were often exploited by their employers.

Construction sites are hazardous and a brief analysis for India might cover the following:

- Physical hazards – heat, noise, light, vibration
- Mechanical hazards – working at height with no safety equipment, lack of lifting equipment, manual handling heavy loads, using power tools, work in confined spaces

- Chemical hazards – cement (potentially containing asbestos and/or silica)
- Biological hazards – dogs (rabies), mosquitoes (malaria, dengue)
- Psychosocial – subsistence living, hard physical work, security of employment, exploitation, displaced families

According to one study, construction workers make up about 5% of the total working population in India (around 17 million people). Injuries at work included falls from heights, foreign bodies in the eye, being struck by falling objects, traffic accidents and electrical injuries. [12] The high prevalence of serious eye injuries at work was confirmed during a visit to the LV Prasad Eye Institute in Hyderabad which sees chemical injuries in its emergency department and has a large corneal grafting and stem cell programme.

Legislation already exists, being the 1996 Construction Workers Act, with a responsibility for enforcement resting with National and Local Government. All States required to set up Welfare Boards, and one is in existence in Andhra Pradesh to administer welfare payments funded by employer contributions, employee contributions and State contributions. Anecdote suggests that enforcement of the Construction Workers Act is woefully inadequate.

A driver for making improvements to health and safety on construction sites is India's economic growth. Developing industries and businesses, increasing urbanization and the infrastructure needed to underpin growth, all requires substantial construction with the need for an adequate workforce. High quality construction projects should care for the health and safety of the workforce as part of guaranteeing a quality product and demonstrating corporate social responsibility. This does not currently appear to accepted as a responsibility in the construction industry.

International drivers for a focus on Occupational Health

India is a founder member of the International Labour Organisation (ILO). The ILO sets up International Labour Standards by way of Conventions (binding international treaties) and Recommendations (non-binding guidelines). India to date has ratified 41 ILO Conventions (out of a possible 182),

The World Health Organisation has published a 'Workers' health: global plan of action 2008-2017 (16th World Health Assembly, May 2007). It covers requirements for member States in the following areas:

- National policy frameworks for workers' health
- Protect and promote health at the workplace
- Improve performance of and access to occupational health services
- Provide and communicate evidence for action and practice
- Incorporate workers' health into other policies

India's recently published National Policy on safety, health, environment at workplace (February 2010) meets some of these requirements on paper but requires yet to be developed action plans to be implemented.

There are two WHO collaborating centres in India

- National Institute of Occupational Health, Ahmedabad
- Department of Environmental Health Engineering, Sri Ramachandra Medical College and Research Institute, Chennai

Next steps

This paper is a position paper for the Indian Institute of Public Health on the issues relevant to occupational health and safety in Andhra Pradesh, which are likely to be common to the whole of India.

In brief summary, these are:

- Health & Safety legislation covering <10% of working population
- Huge burden of chronic and infectious diseases, particularly amongst lower paid workers & unorganised sectors
- Little provision of occupational health services outside larger national and international industries
- Huge shortfall in trained occupational health professionals
- Focus on treatment services & not occupational health interventions
- Data woefully inadequate
- Apathy in workers, employers and Government

The need for action is enormous. As areas to prioritise where action could make a big difference, two possibilities could be:

- The health and safety experience of construction workers and
- Access to occupational health for healthcare workers (particularly prevention of harm through blood and body fluid contamination incident for all potentially exposed staff which includes Class IV workers)

The first area would fit well with the Indian Institute of Public Health's focus on urban health and the interests of its' associate the George Institute which has an accident prevention programme.

Acknowledgements

My visit to Hyderabad is supported by the Faculty of Occupational Medicine, London, through the award of a Mobbs Travelling Fellowship. I thank the staff of the Indian Institute of Public Health for their warm welcome and assistance and in particular Dr Mala Rao, IIPH Director, for her enthusiastic support and her tireless pursuit of opportunities to improve the health, well-being and life chances of the population of Andhra Pradesh. I also thank Dr Lalitha Burra, Nayati International, for providing advice, involving me in her workshop on protecting workers from potent chemicals and introducing me to the IAOH. I am grateful to Dr Ashok Kumar, Dr Prem Raj Bhargava and Dr Vivek Chandra Rao for welcoming me to their workplaces and generously giving their time to talk to me. The views expressed in this report are my own.

References

1. Babu R. Prevention of cardiovascular diseases in Indian industries. Indian Association of Occupational Health conference, Hyderabad. February 2010.

2. Business.Gov.India. Laws relating to specific industries and Occupational health and safety.

3. Chakrabarti AK. National policy on safety, health and environment at workplace. Director General of DGFASLI's presentation, Indian Association of Occupational Health conference, Hyderabad. February 2010.

4. Chaudhary R, Agarwal P. Prevalence of needlestick injury and its knowledte among healthcare workers in a tertiary care hospital in north India. 15th International Conference on AIDS. 2004 Jul 11-16; 15: abstract no. ThPeC7488.

5. DGFASLI. National inventory on occupational health and safety information project. Andhra Pradesh report 2003-4. www.dgfasli.nic.in

6. Government of India, Ministry of Labour and Employment. National Policy on Safety, Health and Environment at Workplace. February 2010. www.dgfasli.nic.in

7. Goyal, SS. Study of health status in class IV workers in charitable rural hospital in India. Indian Association of Occupational Health conference Hyderabad. February 2010.

8. Leigh J, Macaskill P, Kuosma E, Mandryk J. Global burden of disease and injury due to occupational factors. Epidemiology 1999; 10 (5): 626-631.

9. Pingle, S. Presidential address, Indian Occupational Health Association annual conference, Hyderabad. February 2010.

10. Pingle S. Do occupational health services really exist in India? Scientific Committee on Occupational Health and Development ICOH workshop.

11. Rele M, Mathur M, Turbadkar D. Risk of needlestick injuries in health care workers – a report. Indian Journal of Medical Microbiology 2002; 20 (4): 206-207.

12. Shah CK, Mehta H. Study of injuries among construction workers in Ahmedabad city, Gujurat. Indmedica – Indian Journal for the practising doctor 2009; 5 (6) at www.indmedica.com

13. Singru SA, Banerjee A. Occupational exposure to blood and body fluids among health care workers in a teaching hospital in Mumbai, India. Indian Journal of Community Medicine 2008; 33 (1): 26-30.

14. Takala J. Global estimates of fatal occupational accidents. Epidemiology 1999; 10 (5): 640-646.

15. The Times of India, Hyderabad, February 2, 3 and 6, 2010

APPENDIX – definition of occupational health

Occupational Health practice encompasses a multi disciplinary approach to protecting and promoting the health of workers at work and preventing potential harmful effects of work. The Occupational practitioner is interested in the effects of work on health (including the diagnosis, treatment and prevention of occupational diseases) and the effect of health on work (maximising a person's ability to engage with work and minimizing the negative impact that medical conditions may have on engagement with and attendance and performance at work. There is accumulating evidence that work is good for health and being in employment prevents the stigma, poverty, social exclusion and detrimental effects on mental health associated with worklessness. The adverse effects of being economically inactive have also been shown to have a generational effect, with children whose parents are out of work experiencing worse morbidity and mortality than children of more stable economic backgrounds.