

राष्ट्रीय खनिक स्वास्थ्य संस्थान नागपुर

National Institute of Miners' Health, Nagpur

ANNUAL REPORT 2006-07

National Institute of Miners' Health conducts basic and applied research in the field of occupational health and hygiene for subjects employed in mining and mineral based Industry. Pursuing its vision of "**Safe Mines and Healthy Miners**", the Institute has carried out following work in the year 2006-07.

I Research Highlights:

The Institute conducted research on "Equipment Induced Vibration Diseases (EIVD)" the findings of which were published in leading journals [mentioned at V (1), (2) & (5) below] and highlighted in local press. It was observed that about 20% of mining population is exposed to vibration. Operators of heavy earth moving machineries (HEMM) are regularly exposed to harmful levels of equipment induced vibration. The Institute has developed state-of-the-art capability for providing occupational health surveillance programme for the mining industry regarding evaluation, monitoring and control of equipment vibration and associated health risks.

II Environmental Monitoring studies in Mines

During the year 2006-07, NIMH has conducted Environmental Monitoring studies in 4 mines of National Mineral Development Corporation Limited (NMDC), 1 mine of National Aluminium Company Limited (NALCO) and 2 mines of ACC Limited.

During the above study, NIMH had collected and studied 57 samples for respirable dust concentration and free silica analysis (Area monitoring), 44 samples for respirable dust and free silica analysis (personal dust exposure), 10 samples for Area Noise Survey, 125 samples for Personal Noise Dozimetry and 118 samples for Whole Body Vibration. The total number of samples collected and analyzed was 354.

Findings of the above studies have been submitted to the respective organizations.

III S & T project of Coal

The project on coal started at Western Coal Fields Limited (WCL). Baseline data of 1553 employees working in Nagpur area of WCL has been collected and compiled. Detailed medical examination of a sub-sample of employees for audiometric, spirometry, hematology and biochemical variables will soon be conducted.

Field survey for respirable dust survey, area noise monitoring, personal noise dose monitoring and human whole body vibration studies was conducted in Kamptee opencast mine of WCL.

IV Human Resource Development

- 1) During the year, NIMH staff participated in seven training workshops/seminars /symposia on ILO Classification 2000, Biomedical Communication, Ion Chromatography, Environmental Health and Safety etc.
- 2) Total 12 in-house seminars delivered at NIMH during 2005-06.
- 3) Interactive meeting of Medical Doctors of Western Coal Fields Limited was held at National Institute of Miners' Health, Nagpur on 14th November 2006. The meeting comprised lecture and question-answer session by Dr A K Srivastava, Director, NIMH, demonstration of sampling equipments by NIMH staff followed by visit of different sections of NIMH by visiting doctors and detailed discussion on the role of NIMH in prevention of diseases in coal mines.

V. Publications

- 1) **Mandal BB and Srivastava AK.** *Mechanization, vibration and the Indian Work Force.* Asia-Pacific Newsletter on Occupational Health and Safety, Finnish Institute of occupational health, 2006; 13:38-40.
- 2) **Mandal BB and Srivastava AK.** *Risk from vibration in Indian Mines.* Indian Journal of Occupational and Environmental Medicine, Vol.10: 55-57.
- 3) **Zade PD, Dharmadhikari DM, Kulkarni D. K.** *Crystal structure of HgFe₂O₄.* Current Science, July 2006.
- 4) **Sarang V. Dhattrak, Vijay Thawani, Prakash Khandelwal and Manasi Thawani.** *The Role of Probiotics, Prebiotics and Synbiotics in Health.* The Antiseptic, Vol. 103, No. 6, June 2006, 311-313.
- 5) **Mandal BB, Debasis Chatterjee, N. P. Kulkarni, P. D. Zade, A. P. Vanerkar, S.C. Narwadiya, N. R. Thote.** *Whole body vibration exposure of heavy earth moving machinery operators in Indian Mines.* Indian Mining and Engineering Journal, vol. 45, No.9, 29-30.
- 6) **A. P. Vanerkar, P. D. Zade, N. P. Kulkarni and A. Kamavisdar.** *Studies on monitoring of Respirable Dust in Limestone Mine Area – A*

Case Study. Indian Journal of Environmental Protection, Vol. 26, No. 3, August 2006.

VI Other activities

- 1) **27th Governing Body Meeting** of National Institute of Miners' Health was held at New Delhi on 18th May 2006.
- 2) **Draft vision document "NIMH 2020"** has been prepared and circulated amongst the Governing Body, General Body and Research Advisory Council members.
- 3) Detailed information in respect of NIMH is made available at the **official website** of the Institute <http://www.nimh.gov.in>
- 4) The staff of NIMH and JNARDDC jointly celebrated Independence Day on 15th August 2006.
- 5) The staff of NIMH and JNARDDC jointly celebrated Hindi Saptaha from 14th to 20th September 2006.
- 6) Mr. Atul P Vanerkar, Atul P. Vanerkar, Scientific Assistant was awarded PhD in Chemistry by Rashtrasant Tukdoji Maharaj University, Nagpur on "Treatment of Pharmaceutical Wastewater (Herbal & Antibiotic) by Physiochemical, Biological and Advanced Tertiary Techniques"
- 7) Total 11 numbers of dignitaries visited NIMH during 2006-07.

VII Projects in Pipeline

- 1) Respirable dust survey - Work Order for two seasons received from Donimalai Iron-ore Mines of NMDC and for one season from Neyveli Lignite Corporation.
- 2) Noise and Vibration survey – Work order received from Neyveli Lignite Corporation.
- 3) NIMH has sent quotation on enquiry for conducting respirable dust, personal noise studies, human vibration studies and periodic medical examination at 7 underground and 2 opencast mines of MOIL and Rajanka Limestone Mines of Chaibasa Cement Works of ACC Limited.
- 4) As a part of business development activity, Twelve (12) Mines located in Orissa and 2 mines located in Jharkhand state have been identified and contacted telephonically for conducting environmental and medical studies from NIMH at their respective mines. All of them responded positively and "Schedule of Rates" has been sent to them on their request.