



AN EXPERIENCE IN OPERATIONALISING AN INTEGRATED OCCUPATIONAL HEALTH SERVICE IN INDIAN RAILWAYS

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Workers' health: global plan of action Sixtieth World Health Assembly

SIXTIETH WORLD HEALTH ASSEMBLY WHA60.26, Agenda item 12.13, 23 May 2007.

In its introduction mentions

“All components of health systems should be
involved in an integrated response to the
specific health needs of working populations.”

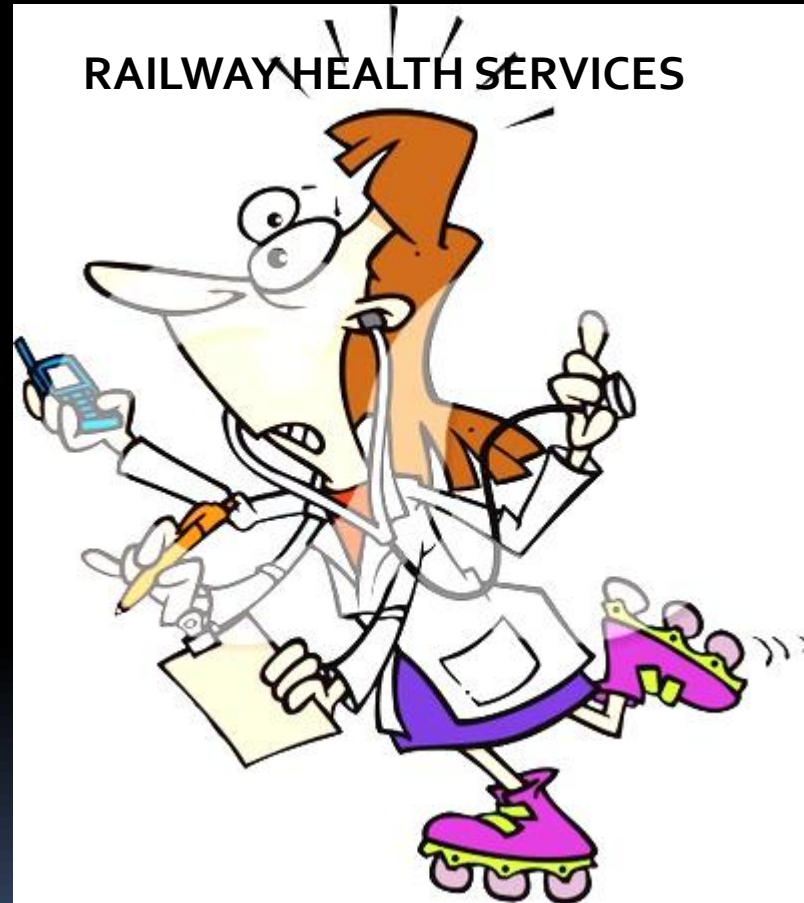


OCCUPATIONAL HEALTH PROVIDER
CURATIVE HEALTH PROVIDER
PREV. AND PROMOTIVE HEALTH PROVIDER
POLICY MAKERS

INTEGRATION OF HEALTH SERVICES

OCCUPATIONAL HEALTH
SERVICES

CURATIVE HEALTH
SERVICES



ADMINISTRATIVE
SERVICES

PREVENTIVE AND PROMOTIVE
HEALTH SERVICES

Can Med Assoc J. 1964 Dec 19;91:1307-9.

THE PHYSICIAN AND INDUSTRY.

NELSON AJ.

- Many employers are interested in helping their employees improve and maintain health through a program of preventive medicine designed to supplement health services which already exist in the community. The objectives of such a health program can be attained only through team work between physicians, both within and outside industry. Such specific objectives as the development of measures for the maintenance and improvement of health and the prevention of disease; the provision of readily available diagnostic, treatment and counselling services; the rehabilitation of disabled employees; and the effective administration of sick-benefit plans require the closest communication and co-operation among the occupational health service, the private physician, and other health and welfare agencies **Only by such liaison can the maximum benefits of both preventive and curative medicine be extended to the employee-in his best interest as well as that of the community and the employer.**

J Occup Med. 1992 Sep;34(9):893-901.

Workers' attitude toward the occupational physician.

Plomp HN.

Institute of Social Medicine, Vrije Universiteit, Amsterdam, The Netherlands.

We conclude that workers see clear differences in the tasks and functions of the occupational physician compared with those of the curative physician. Relations with and dependence on management is considered to be self-evident. A negative evaluation of the OHS is mainly because of unclarity and uncertainty as to how the occupational physician combines his/her responsibility toward individual workers with his/her responsibility toward the company.

INDIAN RAILWAYS AT A GLANCE :

INDIAN RAILWAYS IS ONE OF THE LARGEST RAIL NETWORKS IN THE WORLD

➤	Number of Employees	:	1.36 million
➤	Route length	:	63,974 Kms.
➤	Total Track Kms.	:	113,617 Kms
➤	Railway Stations	:	7,030
➤	Passenger Kms.	:	903 billion
➤	Freight Train Kms	:	356 million
➤	Passenger Originating	:	7,246 million

➤ **No. of Zones : 17**

➤ **No. of Divisions : 68**

➤ **No. of Production Units : 6**

➤ **Public Sector Undertakings: CONCOR,
CRIS, IRCON, IRCTC, IRFC, KRCL, MRVC,
RVNL, RCIL, RITES, DFCCIL, RLDA**



MEDICAL DEPARTMENT – HEALTH SERVICES

INFRASTRUCTURE:

Total No. of Railway Hospitals	:	125
Total No. of Health Units	:	586
Total No. of Indoor beds	:	14,000

MANPOWER AVAILABLE:

(a) Doctors- including Dental	=	2,506
(b) Other doctors – honorary visiting specialist, Sr. Residents, DNB trainees & house officers	=	1.000
(c) Para Medical & other staff	=	54.000
(d) Health Inspectors	=	952



Expenditure on Health Care Delivery System

Year	Expenditure (figures in millions of INR)
09-10 (Actual)	13,782
10-11 (Revised estimate)	14,213
11-12 (BE)	15,934 (238 m Euros)

Health Care Delivery

- OPD Attendance(Annual) : 26.47 million
- Indoor patients(Annual) : 4.84 million
- Annual Surgical operations(Annual) : 100,000
- Major Surgical Operations(Annual) : 44,229
- Maydays lost on account of sickness(Annual) : 1.74%
- Medical examination of Employees(Annual) : 132,800
- Medical examination of Candidates for Employment (Annual) : 35,103

TOTAL NUMBER OF BENEFICIARIES :

1. Total Number of Railway Employees : 1.36 million

2. Total Number of Retired Railway Employees : 0.34 million

Total beneficiaries:

1.36 million x 4 = 5.44 million

0.34 million x 2 = 0.68 million

TOTAL = 6.12 million





INDIAN RAILWAYS

Official Member of UIC (International Union of Railways) and UIMC (International Union of Railway Medical Services).

Largest Employer (More than 1.36 million full-time regular employees) under Single Management in the World



Largest Integrated Occupational Health Service under Single Management in the World.

STAKE HOLDERS — A SEAMLESS INTEGRATION

- **THE INDIAN RAILWAYS** –TO INCREASE PRODUCTIVITY, HAVE MOTIVATED EMPLOYEE AS THEY ARE SKILLED AND EXPENSIVE,EMP.WELFARE
- **EMPLOYEE**- HEALTHY ENVIRON TO KEEP HIM HEALTHY AND FIT
- **CURATIVE HEALTH PROVIDE** - EARLY TREATMENT,ALL EFFORT TO MAKE HIM FIT FOR ORIGINAL JOB,COUNSELLING
- **OCCUPATIONAL HEALTH PROVIDER** - KEEP HIGHLY SKILLED EMP FIT FOR JOB,REDUCE MANDAYS LOSS,AWARENESS AND PREVENTIVE PROG..
- **TRADE UNIONS**-EMP.WELFARE,AWARENESS PROG.,HELP IR TO MEET CORPORATE GOALS
- **VARIOUS LEGISLATIONS** E.G. FACTORY ACT, WORKMAN'S COMPENSATION ACT ETC.

INTEGRATION – OCCUPATIONAL

CATEGORY :

FITNESS IN HIGH SAFETY –ENDANGERS
PASSENGERS AND PUBLIC

MEDIUM SAFETY –ENDANGERS COLLEAGUES
AND SELF

LOW SAFETY- THE REST

MEDICAL EXAMINATION:

PRE-PANEL MED.EXAM.

PRE-EMPLOYMENT MED.EXAM.

PERIODICAL MEDICAL EXAMINATION



INTEGRATION – PREVENTIVE AND PROMOTIVE

HEALTH INSPECTORS & HEALTH OFFICERS

SUPERVISE DRINKING WATER QUALITY

FOOD QUALITY

SANITATION

HEALTH AWARENESS CAMPS

HEALTH CHECKUP CAMPS

IMMUNISATIONS – HEPATITIS B, ETC

DIETIC SERVICES

PROMOTE HEALTHY LIFE STYLES



INTEGRATION - CURATIVE

- HOSPITALS AND DISPENSARIES

PRIMARY,
SECONDARY, AND
TERTIARY CARE

- HUB AND SPOKE MODEL

- FOR EMERGENCIES -
EMPANELLED HOSPITALS

INTEGRATION – ADMINISTRATIVE

- RLY. HEALTH BUDGET FOR INTEGRATED HEALTH SERVICES
- SEPERATE CAPITAL INVESTMENT ON INFRA. AND EQUIP.
- RAILWAY BOARD ON STAFF WELFARE HAS A SECY. LEVEL MEMBER STAFF AND DGRHS
- TRADE UNIONS :PNM, SAFETY CAMPS, HOSP. VISITING COMMITTEE, OPINION ON STAFF WELFARE MATTERS, CONDUCT HEALTH AWARENESS PROG. BLOOD DONATION CAMPS
- PARTICIPATION OF RAILWAY EMPLOYEES IN MANAGEMENT - PREM
- POLICY ON LONG SICKNESS
- MANDAY LOSS MONITORING
- MORBIDITY AND MORTALITY MEETINGS
- MONTHLY PERFORMANCE REPORT
- QUATERLY CMDS MEETINGS

INTEGRATION ADMINISTRATIVE

- Railway Minister's, GM'S, and CMD'S Annual awards for Best Performance at Zonal, Divisional and Dispensary level respectively and Individual Awards for BEST WORKERS
- Ministry of Railways' Approval for 90% reimbursement of Membership Fees of Indian Association of Occupational Health(IAOH) in Oct. 2009 to all Medical Officers .
- Ministry of Railways' Approval for 90% reimbursement of Membership Fees of International Commission on Occupational Health(ICOH) in 2010 to all Medical Officers.

PARTNERSHIPS

- ILO, UIC,ITF Global Toolkit on HIV/AIDS for the Railway Sector validated on Indian Railways with partnership of Indian Railways Trade Unions and Indian Railways Health Care System in Nov 2009.
 - 13 Scientific Papers by Medical Officers of Indian Railways in the 60th Annual National Conference of Indian Association of Occupational Health(IAOH) in Feb. 2010.
 - President and Vice President of IAOH, Delhi State from Indian Railways Elected in Sept 2010.
 - 18 Scientific Papers by Medical Officers of Indian Railways in the 61st Annual National Conference of Indian Association of Occupational Health(IAOH) in Feb. 2011.
-
- OCCUCON- DELHI 2012



Areas for Collecting Scientific Evidence

- Epidemiology of Work place injury
- Epidemiology of Occupational Dermatitis
- Prevalence of Non-communicable diseases
- HIV in work place
- Occupational Health and safety Awareness
- Workload Analysis of Medical Officers
- Epidemiology of Occupational Visual Disorders



Areas for Collecting Scientific Evidence

- Occupational stress amongst Operational staff and Railway Engine Pilots
- Sickness Absenteeism amongst Railway Employees
- Mortality pattern amongst serving employees
- Hypertension in loco pilots
- Ambient Air Quality, Respiratory symptoms and Lungs function of employees
- Musculoskeletal disorders amongst Health care Workers of a Hospital
- Epidemiology of Lifestyle associated individual disease components
- Sickness Absenteeism and morbidity pattern among the employees
- Epidemiology of Noise induced Hearing loss
- Medical Invalidation And Decategorisation on Medical Grounds



We have been able to achieve at Primary Health Care level:

	Railways	India
Crude Birth Rate	9.82 per 1000	22
Infant Mortality Rate	13.76 per 1000 live birth	48.2
Crude Death Rate	1.35 per 1000 mid-year population	6.4

MANDAY LOSS DUE TO ILLNESS

	2007-08	2008-09	2009-10	2010-11
MANDAY LOSS - RMC	8229923	7865733	7787001	7557708
MANDAY LOSS PER WORKER-RMC	5.8	5.5	5.5	5.4
MANDAY LOSS -IOD	569827	542131	516279	509295
MANDAY LOSS PER WORKER- IOD	0.39	0.39	0.36	0.36
MANDAYS LOSS PER WORKER PER YEAR RMC+IOD	6.19	5.90	6.40	5.76



IMPACT OF PREVENTIVE HEALTH CARE ON INDIAN INDUSTRY AND ECONOMY

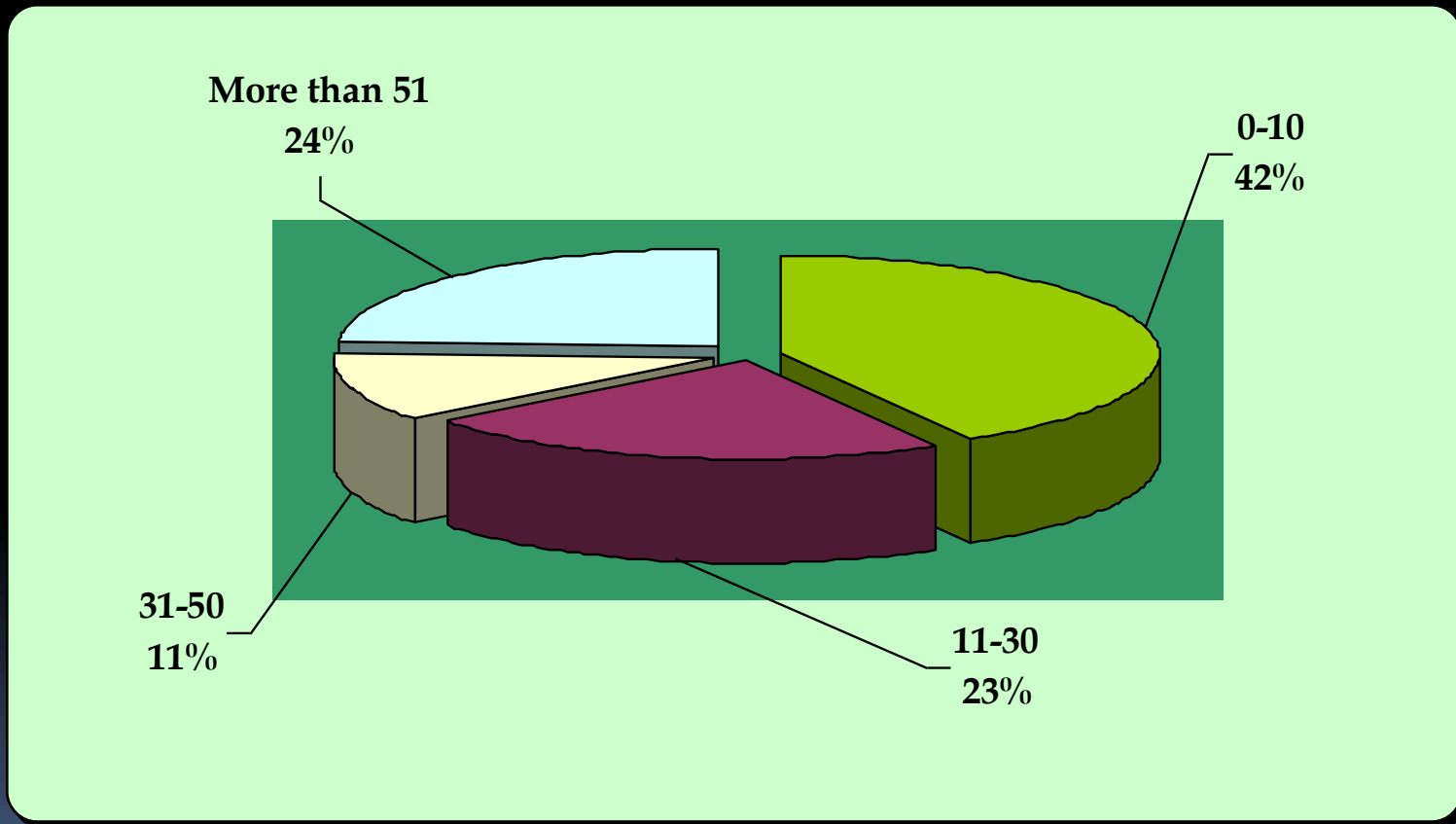
Dr. Alka Chadha
National University of Singapore



September 12, 2007
New Delhi

Preventive Health Care Seminar

Man days lost owing to sickness



Preventive Health Care Seminar

Sickness Absenteeism, Morbidity and Workplace Injuries among Iron and Steel workers - A Cross Sectional Study from Karnataka, Southern In

Publication: Australasian Medical Journal (Online)

Author: Manjunatha, R

Date published: February 22, 2011

- Overall 16.4 days were lost per worker per year (male = 16.5 & female = 16.2) due to sickness absence. A blue collar worker lost 21.5 days compared to 11.9 days by a white collar worker ($p < 0.01$).

Sickness absenteeism is significantly higher among iron and steel workers when compared to other occupations in India

- **RATES of Employee Absence ...**

The average level of employee absence at 3.4% of working time or 7.7 days per employee per year has increased slightly compared with last year's 3.3% or 7.4 days, when the CIPD's *Absence Management survey recorded its lowest ever level of employee absence. However, it remains low in comparison with previous years (2008: 3.5% or 8.0 days; 2007: 3.7% or 8.4 days).*

MANDAY LOSS DUE TO ILLNESS

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WORK DAY LOSS IN INJURY

Incidence rates of lost-workday injury cases by private industry sector, 1976–2001.*

May 04

Centers for Disease Control and Prevention, USA

YEAR	PVT	CONST/MANU	TRANS/PUB UTILITY
1997	3.1	4.2	4.7
1998	2.9	4.2	4.2
1999	2.8	4.0	4.3
2000	2.8	4.0	4.1
2001	2.6	3.6	4.2

PME - UNFIT ON INDIAN RAILWAYS

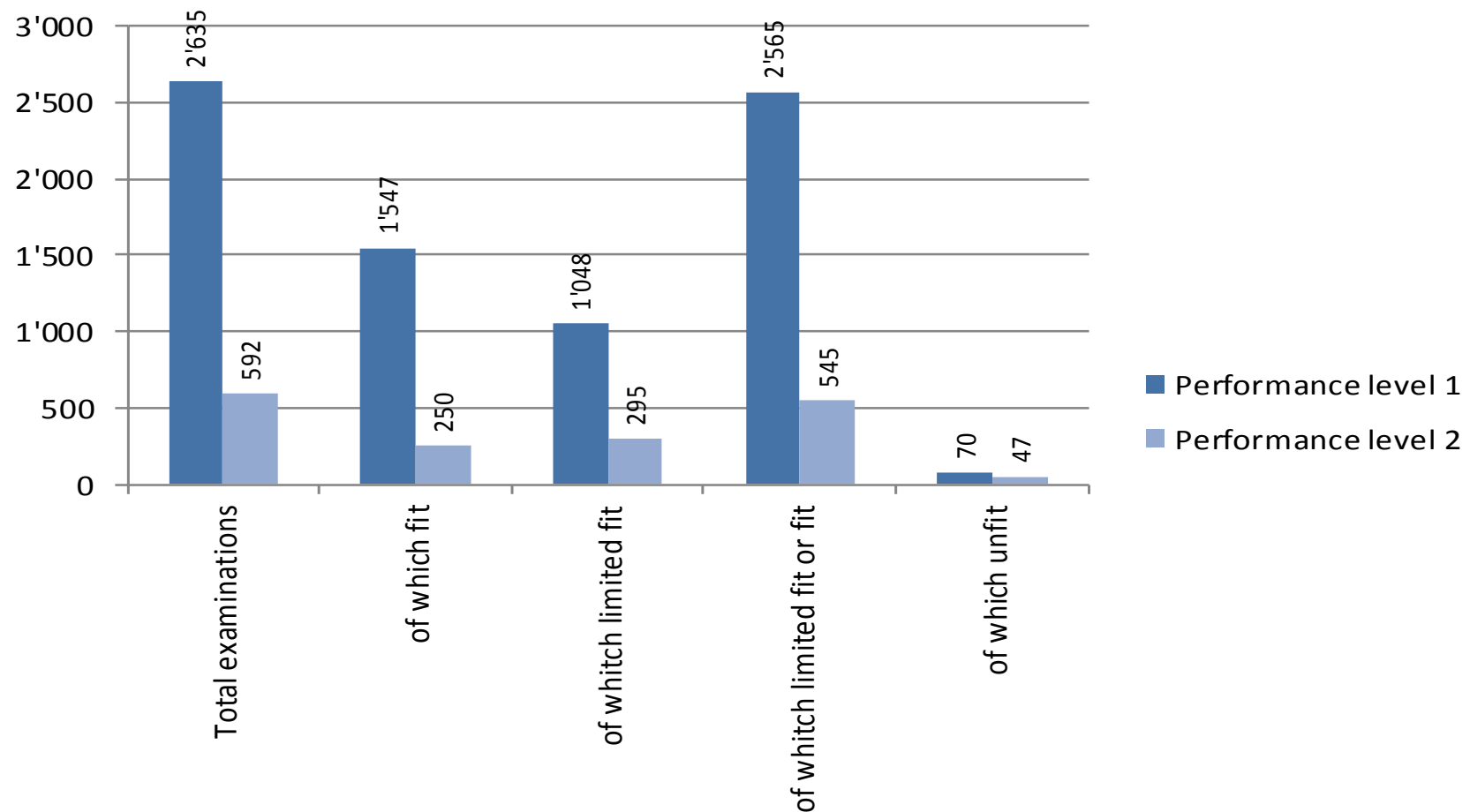
(Period of study – April 2009 to March 2010)

- Total No. of Railway employees – 1400000
 - Total No. UNFIT in one year – 2724
 - % UNFIT -- 0.19
-
- **Total No. of Railway employees in HIGH SAFETY category –A1** – 65141
 - **Total No. of UNFIT in one yr** – 400
 - **% UNFIT** - 0.61%

SWISS RAILWAYS 2011 -periodic examinations :

Total of all examinations (all clients), of that part fit, limited fit and unfit

3.65% ARE UNFIT OF TOTAL PME



An analysis of morbidity pattern among civil air crew

Wg Cdr P Pant*, Brig H Malik⁺, Wg Cdr D Gaur[#]

ABSTRACT

Medical disability in an aircrew may lead to temporary unfitness for flying duties or permanent denial of flying license. An analysis of medical evaluation data provides insights into the morbidity pattern among a particular professional group. This study was carried out to analyse the morbidity pattern among commercial aircrew in India from 1997-2002. A total of 516 cases were made temporarily/permanently unfit during initial and renewal medical examinations. 108 (20.93%) cases were declared permanently unfit at the time of initial medical examination. 348 (67.44%) cases were declared temporarily unfit while 60 (11.63%) cases were declared permanently unfit during their renewal medical examinations. Among the permanent rejections at the time of initial medicals, EEG abnormality (23.14%) was the leading cause for rejection, while Coronary Artery Disease and Hypertension, combined together were the main causes of temporary (26.72%) and permanent (38.34%) rejections at the time of renewal medical examinations. IGT/DM accounted for 34 (9.78%) cases of temporary denial of license. Approximately one-sixth of the aircrew were detected to be overweight by more than 20% over their ideal weight. The study provides a better understanding of factors related to aircrew medical fitness vis-à-vis flight safety, with particular reference to early detection and prevention of health problems. It is essential that the thrust of medical examinations in healthy individuals should continue to remain on early detection and prevention of illness.

IJASM 2005 ; 49 (2) : 24-32

Keywords: Civil aircrew licensing, medical examination, morbidity

Flying is a highly skilled job that involves a complex interaction between the aviator and the machine in an environment that is full of stressors. Thus, the physical and mental fitness of flight crew must be maintained at a very high level of efficiency in flying modern aircrafts. Aircrew do not live as an isolated group but are an integral part of the society. Therefore they are subjected to all the health risks as the rest of the population. A medical disability in an aircrew may lead to discontinuity in flying for a temporary period. If the disease process is not arrested in time, then it may also lead to permanent denial of flying license. However, since they are a highly skilled group trained at a very high cost, the

objective of their health management is to utilize their skills and training not only optimally but also effectively and to the maximum possible extent.

Civil aircrew are medically assessed for initial issue or renewal of their flying license as specified by ICAO in Annex 1[1]. Two basic principles govern the assessment of an applicant's medical fitness for licensing for aviation duties, namely:-

* *Classified Specialist (Aviation Medicine)*
Air Force Station, Halwara

⁺ *Commandant, 158 BH, C/O 99 APO*

[#] *Associate Professor (Aviation Medicine)*
Institute of Aerospace Medicine, IAF, Bangalore- 560017

UNFIT FOR ALL JOBS DUE TO ILLNESS- WESTERN RAILWAYS 2000-2002

YEAR	TOTAL RLY EMPLOYEES	EMPLOYEES UNFIT FOR ALL JOBS	UNFIT FOR ALL JOBS PER 10,000 EMP.
2000	183716	69	3.75
2001	182916	76	4.15
2002	182815	81	4.43

UNFIT FOR ALL JOBS DUE TO ILLNESS- INDIAN RAILWAYS 2005-2007

YEAR	TOTAL RLY EMPLOYEES	EMPLOYEES UNFIT FOR ALL JOBS	UNFIT FOR ALL JOBS PER 10,000 EMP.
2005	1308780	763	5.80
2006	1300700	745	5.72
2007	1200423	727	6.00

PRIMARY CAUSES FOR UNFIT FOR ALL JOBS DUE TO ILLNESS

SR NO.	PRIMARY CAUSE	% OF TOTAL UNFIT 2000-02	% OF TOTAL UNFIT 2005-7
1	HYPERTENSION	23.4	48.5
2	TUBERCULOSIS	10.18	3.2
3	INJURY	7.96	7
4	DM	6.19	39
5	ALCOHOL	5	8

REASONS FOR UNFITNESS

S.NO.	DISEASE	% OF TOTAL CASES 2000-02	% OF TOTAL CASES 2005-7
1	TUBERCULOSIS	10.18	3.2
2	CVA-STROKE	33.6	38.6
3	OTHER CNS	12.39	19.03
4	EYE	11.50	9.82
5	INJURY	7.96	6.6
6	CANCER	10.1	4.5
7	RENAL	3.10	1.85
8	CVS	1.77	2.20

INJURED ON DUTY


SNO,		2008	2009	2010
	WORKSHOP			
1	NO OF EMP	274764	250026	238177
2	FATAL per 1000	0.58	0.15	0.19
3	GRIEV. Per 1000	6.6	4.7	4.6
4	SIMPLE per 1000	54.1	74.0	16.9
	TRAIN OPT			
1	NO OF EMP	925657	1029309	1151593
2	FATAL per 1000	0.20	0.20	0.11
3	GRIEV. per 1000	2.66	4.64	2.02
4	SIMPLE per 1000	25.9	25.6	8.8

National Commission on Macroeconomics and Health (*NCMH*), NCMH
Background Papers- Burden of Disease in India, National Commission on
Macroeconomics and Health
Ministry of Health & Family Welfare, Government of India, New Delhi
September 2005,
-Gururaj


- In India,

It is estimated that 19 fatal and 1930 (1:100) non-fatal accidents occur annually per 100,000 workers (Nag and Patel 1998).

The incidence of industrial injuries among employed workers was 9/1000, with a frequency of 2.6 per 100,000 man-days work (CSO 2004). As per the NCRB report of 2001, 667 people were killed in factory/machine accidents.

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- A limited number of population-based epidemiological studies reveal that occupational injuries constitute approximately 10% of total deaths due to injuries and 20%–25% of all injuries.
 - Mohan (1992) in a study of industrial workers reported a death rate of 6/1000 workers.


Varghese *et al.* (1990), in a cohort of 25,000 people from 9 villages of Haryana, observed the incidence rate of work-related injuries to be 31% over a one-year period.




Workers' health: global plan of action Sixtieth World Health Assembly

- SIXTIETH WORLD HEALTH ASSEMBLY
WHA60.26, Agenda item 12.13, 23 May 2007.

In the preamble mentions.....



“Considering that the health of workers is determined not only by occupational hazards, but also by social and individual factors, and access to health services;”



Workers' health: global plan of action Sixtieth World Health Assembly

- Urges Member States:
(5) to ensure collaboration and concerted action by all national health programmes relevant to workers' health, such as those dealing with prevention of occupational diseases and injuries, communicable and chronic diseases, health promotion, mental health, environmental health, and health systems development;

Ned Tijdschr Geneeskd. 2011;155(48):A3880.

[Patients on the collaboration between occupational and curative physicians].

[Article in Dutch]

Plomp HN, Wisse A, Anema JK.

Source

VU Medisch Centrum, afd. Sociale Geneeskunde, Amsterdam, the Netherlands. hn.plomp@vumc.nl

CONCLUSION:

- A physician's predominant perspective of the cooperation between occupational and curative physicians is a clinical one; the emphasis being on the establishment of adequate diagnoses and their treatments. Patients, however, view the cooperation between their occupational and curative physicians from a strategic perspective in which their own interests are the key decisive factors. In daily practice, this might explain the reason behind patients being more reserved about occupational-curative cooperation, in comparison with physicians. It is advisable that patients not only be asked their consent, but that they are also granted a consciously active role in the collaboration between their occupational and curative physicians as well as in their own occupational reintegration process.

NEWER TECH. AND OCCUPATIONAL HEALTH


- There is continuous review of fitness standards looking to newer technologies being introduced with better results. This helps to retain highly skilled and trained human resource which benefits both the organisation and the employee.
- Recent decisions taken on INDIAN RAILWAYS
For loco drivers – fit with DM and Tab. Metformin
In high safety jobs including loco drivers- IOL allowed
Tympanoplasty allowed
Review is being done for fitness with cardiac ailments.



“Directive Principles of State Policy”


- The “Directive Principles of State Policy” of the Constitution of India provide for securing the health of employees in management of undertakings, establishments or other organizations engaged in any industry (Article 39, 42, 43A). On the basis of these Directive Principles and international instruments, the Government of India declares its policy, priorities, strategies and purposes. The Government is committed to regulate all economic activities within the country with a view to ensuring that every working employee is provided with safe and healthful working conditions.







OSH



- Occupational Safety and Health is one of the subjects allotted to Ministry of Labor & Employment under the Government of India Allocation of Business Rules. The Ministry of Labor & Employment, Govt. of India & Labor Departments of the States and Union Territories are responsible for the safety & health of the workers. Directorate General of Factory Advice Service & Labor Institutes (DGFASLI) and Directorate General of Mines Safety (DGMS) assist the Ministry in the technical aspects of Occupational Safety & Health in factories & port sectors and mines respectively.
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- *Occupational Health and Safety legislation by and large covers the organized sector comprising just 7%, leaving behind the unorganized sector which comprises 93% of the total working population of around 470 million.*
 - The agriculture which is one of the biggest sector employing nearly 60% of the workforce in India is not covered by health and safety legislation.



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- With such a limited coverage of workforce and rather weak state of occupational health and safety, India may be having a GNP loss to the tune of several hundreds of billions of dollars every year. Serious efforts are needed to address this issue so as to prevent human and material losses. India may be experiencing almost 10% of GNP loss due to occupational illness and injuries.

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- The major occupational diseases/morbidity of concern in India are: silicosis, musculoskeletal injuries, coal workers' pneumoconiosis, chronic obstructive lung diseases, asbestosis, byssinosis, pesticide poisoning and noise-induced hearing loss. Census figures (2011) have revealed that there is an increase of female workers leading to certain concerns, such as adverse effects on reproductive health, exposure to toxic chemicals in the workplace

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- In India, occupational health is not integrated with primary health care. Occupational Safety and Health till date remains under the mandate of the Ministry of Labor and not the Ministry of Health. Many large industries / public sector enterprises provide medical services but concentrate on curative set-up neglecting occupational health.

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- There are around 1125 qualified occupational health professionals in India and only around 100 qualified Industrial hygienists as against a requirement of over 8000 qualified occupational health doctors
 - As a result there is under diagnosis and under-reporting of occupational diseases.

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- WHO in its sixtieth World Health Assembly has also expressed concerns over major gaps between and within countries in the exposure of workers and local communities to occupational hazards and in their access to occupational health services. The occupational health training is carried out in a few medical colleges for graduate and postgraduate diplomas and degrees.

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- There are many factors, which are changing the industrial environment in India, such as globalization, outsourcing, transfer of technologies, newer type of jobs (IT, Call Centre), change in employment patterns, etc. Additionally, factors like increasing literacy / education are also ensuring worker awareness and more and more “Right to Know” demands from workers.

INTEGRATED OCCUPATIONAL HEALTH SERVICE





THANKS FOR YOUR ATTENTION

