Occupational HEALTH SOUTHERN AFRICA

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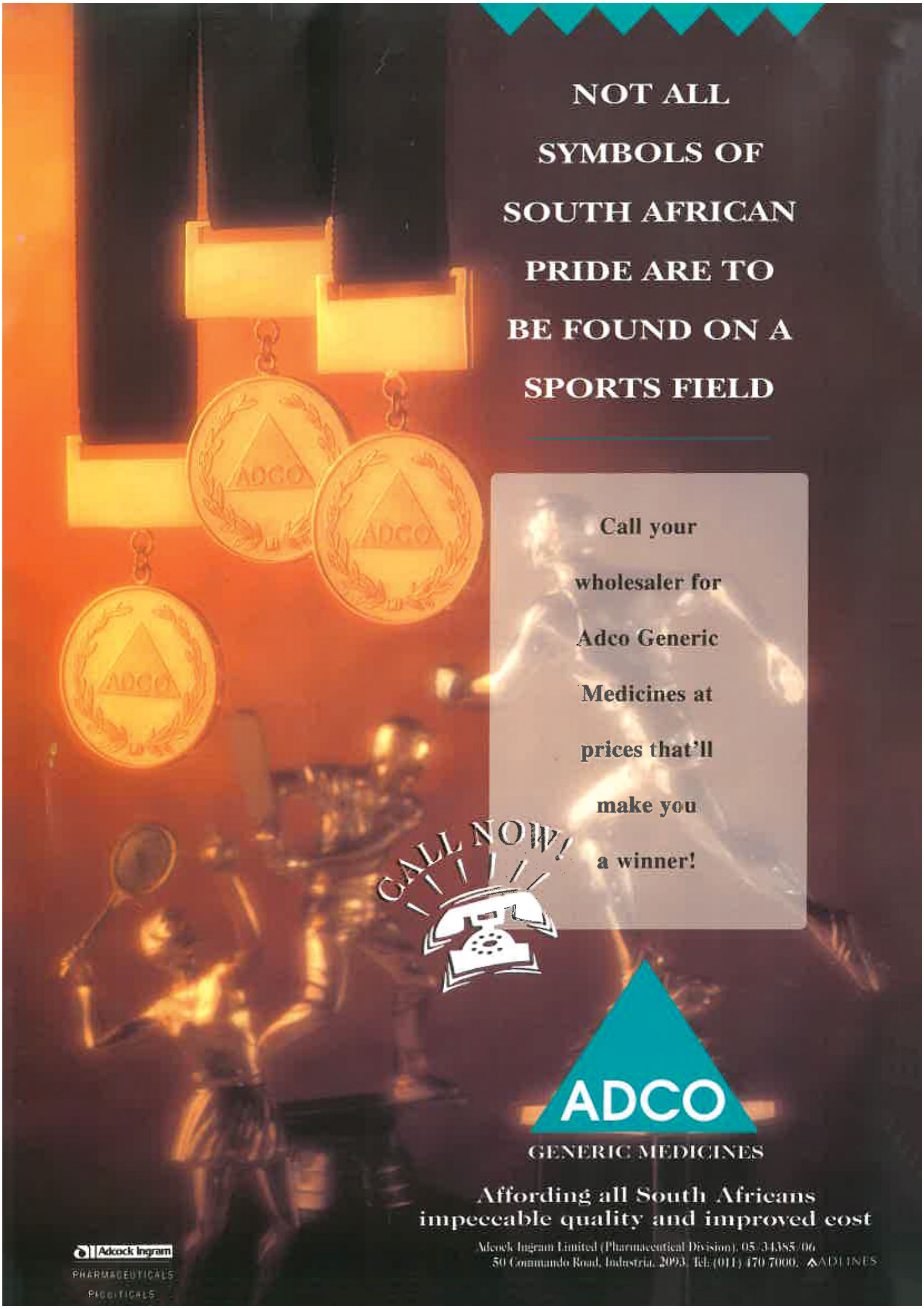
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This journal focuses on Occupational Health, Medicine, Hygiene and Safety, Primary Health Care at the workplace, Environmental Health, and other employee health benefits

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Attitude and commitment

In reading our guest editorial, Watkins asks pertinent questions about employers and their commitments to health at the workplace. The growth in Industrial clinics bears testimony to this, both in quality and support. It would appear that the attitude of Industry has been challenged by the Department of Health which apparently perceives this a problem rather than an asset. On the other hand, in our experience, employers are continually showing increasing interest in their clinics, and it makes common sense to entertain the idea of cost efficient clinics rather than cumbersome and unmanageable medical-aid systems, which are quite clearly becoming unaffordable and even uncontrollable.

The relevance of clinics is added to by increasing facilities such as Employee Assistance and Well-being programmes, and other support groups which achieve a great deal. As these are paid for by Industry, some appreciation for their efforts must be considered appropriate.

Taking into account such issues, those companies who run large clinics and even hospitals (e.g. mining, sugar estates, etc) for staff and dependants as well as pensioners, may well rue the day when such facilities are perceived to be too costly, but in actual fact could prove to be extremely beneficial. Probably some of the most cost efficient services for the care of communities, given that these communities are selective (current or previous employment), are the company hospital, and while this may seem contrary to common belief, the opposite could be found to be true in the near future. The question then comes back to attitude and commitment, and also the involvement of industry in social and other services, making allowances for the State's declared objectives.

We'll see.

Truter and Ferrie offer a challenging and well structured commitment to the formation of the Institute for Occupational Hygienists in South Africa (IOHSA), and this move is welcomed both in conjunction with the standards and professionalism it demands, but also in many ways the relationship between ourselves and the Occupational Hygienists is developing and, not least in the areas needed for monitoring the surveillance, as well as risk assessments.

The significance of Martin and Schoub's article is that the vaccination programmes for influenza are worthwhile, and this is supported by Boorman who sees it from a clinical perspective. The timing could be well received by industry who should take note of the details, and also to take cognisance of budgetary requirements for 1997, as the influenza vaccination programme should be initiated before April.

Chris van Selm
Editor

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Occupational/Primary healthcare coverage: are employers trying to dodge National Health Insurance?

Dr Gavin Watkins
Director
Ginsburg Malan & Carsons, Consultants and Actuaries (Coast) (Pty) Ltd, Cape Town

One of the disadvantages of living in interesting times is the tendency for interest to be confused with self-interest. The Department of Health seems to be convinced that the current growth in occupational/primary health care facilities in the workplace is motivated by employers wishing to limit their liability in terms of the proposed National Health Insurance (NHI) proposals.

Let us step back for a moment to consider the facts:

- For many years the provision of occupational and primary health care facilities have been intertwined. Employers have had to comply with the requirements of the prevailing Occupational Health and Safety Act but, in addition, have used the same facilities, staff and often supplies to provide good quality on-site primary health care services to employees and, in certain cases, their dependants.
- The cost of providing these occupational and primary health care services has often been totally carried by the employer. In certain instances the employer/employee have shared these costs through a Medical Benefit Fund but, even in these cases, the full employer costs have never really been quantified. For example employers have often absorbed the costs of the premises, electricity and water, repairs and maintenance, transportation, and even certain staff and supply costs.

There is no doubt that employers/employees have found these services beneficial from both an employment and health point of view. The ongoing nature of these services attests to this fact.

- The NHI proposals at this stage are incomplete and confused, especially in respect of the intended further regulation of private health care, the imposition of a mandatory core hospital package and accompanying equalisation fund, the tax deductibility of employer medical aid contributions, and so on. The date of announcement of these proposed measures was originally March, then June 1996 and it now appears that an announcement is unlikely before January 1997.
- The introduction of an Essential Drugs List, and the limitation of the dispensing rights of doctors are also high on the agenda. The extension of dispensing rights to nurses, especially those serving in occupational/primary health care facilities seems to be unnecessarily tied up by red tape, and overzealous competency requirements.
- The shifting of funds from tertiary to secondary and primary care levels, the closure of hospitals and the retrenchment of public health care staff, will only lead to greater pressures on the private sector and employers, who are often viewed by employees as being responsible for the funding of their health care needs.
- Many employers are re-evaluating their health care policies and are realising that the provision of health care is not synonymous with the provision of a well-funded and well-managed medical aid scheme. There is a growing tendency to view health in a more holistic and balanced way. This starts with recognising that treating the cause is, in the long run, cheaper than treating the resulting symptoms. Thus the shift to examining housing and sanitation, performing across the board health screenings, introducing preventative care programs, identifying chronic sufferers and diseases associated with the workplace and environment, and so on. The occupational/primary health care facilities and structures are ideally positioned to assist in this regard.

Unions often represent lower income employees who have not previously, and are often not currently, covered by the employer's medical aid scheme. There is a myth that such employees are going to be happy to be covered by the mandatory core package to be imposed by the NHI. Our dealings with Unions indicate strongly that this is far from the truth. There is a strong belief that all employees should be entitled to good quality health care - not necessarily through conventional first world medical aid schemes, but through a carefully constructed mixture of private and public health care coverage which makes use of private and provincial (state) hospitals, state primary health care facilities as well as on and off site clinics.

Why do employers feel it necessary to provide health care coverage to their employees through a medical aid scheme or some other vehicle?

Is it simply out of habit? Because it is morally required? Only as a result of the tax deductibility of employer medical aid contributions? To increase productivity? To decrease absenteeism? To maintain competitive advantage?

In truth the answer is probably all of the above although there are few, if any, employers that we consult to who would admit to having asked themselves the question in recent times. It is true that the provision of health care coverage is very much in the spotlight as a result of three recent developments.

- The recent guideline AC305 published by the South African Institute of Chartered Accountants provides guidance in respect of the disclosure of post retirement health care liabilities in a Company's financial statements:
- The threatened removal, or reduction, in the tax deductibility of employers' medical aid contributions on behalf of their employees.
- The likely introduction of a mandatory core package of hospital benefits to be funded jointly by the employer/employee.

Faced with the above there is no doubt that employers are examining the nature and cost of their health care provision and are examining ways of reducing or limiting their current and future exposure. This extends to the redesign of the medical aid scheme, the imposition of financial and other controls to manage increasing costs and utilisation, the modification of the employer's subsidy of members' contributions, the linkage of the employer subsidy of pensioners' contributions to length of service and retirement age and the implementation of hospital, pharmacy and other managed fee-for-service programmes.

Health care matters are no longer left to be managed by junior staff members - and the costs are, in many companies, greater than of those for retirement funding. Health care is now serious business - requiring the appointment of professional administrators, consultants, medical advisors, in-house nursing staff, actuaries and managed care specialists. There is a much clearer understanding that health management is part of a more encompassing area of risk management which includes disability, ill health and early retirement etc. Prevention of disease and lifestyle management is starting to be recognised as being crucial if an overall strategy of risk management is to be successful. At this level the traditional claims processing medical aid administrator has a limited role - the emphasis shifts instead to on-site nursing/medical staff who currently provide occupational and primary services to these employees.

Where to from here?

It seems strange that the Department of Health is not readily assisting the establishment of extensive private occupational health/primary facilities. Perhaps the Department is preoccupied with other more pressing matters. Perhaps there is a real concern that employers are attempting to substitute proper medical aid coverage with cheaper alternatives.

Whatever the reason there is no doubt in my mind that employers and occupational/primary health care professionals need to make themselves heard and need to emphasise, through the press and through submissions to the Department of Health, that private occupational/primary health care provision is a fundamental part of the solution to the health related problems facing this country. It is a crucial part of the holistic solution and it is the foundation of a capitated managed care system.

Permit system update

Representatives of SASOM and SASOHN have again met with Mr Bada Pharasi and Mr Marius Fourie of the Department of Health to try and resolve problems around the permit system. The meeting was held in a cordial atmosphere and various uncertainties have been cleared up.

The following are important points to note:

1. There is no intention by the Department of Health to discontinue primary health care services at the worksite.
2. There is also no intention by the Department to cancel existing permits.
3. New permit applications are still being processed and the delays that have ensued have been at provincial level. One of the problem areas is Gauteng and efforts will again be made by both societies to meet with the MEC for Gauteng in the New Year.
4. A policy document is currently being finalised by Mr Pharasi's directorate in the Department of Health. This will be passed onto the Director General's office after which it will be discussed by various working groups and will include all stakeholders (i.e. SASOM and SASOHN). At the same time it will also be discussed with the provincial health services. It is hoped the discussion process can be initiated at the end of January 1997.
5. Consideration is being given to link *bona fide* occupational health services with primary health care services for the purposes of obtaining a permit in the future. It is also likely that a new system will replace the existing permit once the new policy has been finalised.
6. The above mentioned points 1 to 5 are subject to further discussion with and approval by the Director General.
7. The training of nurses in pharmacology, primary health care and good prescribing and dispensing practice is essential to ensure the competency of Occupational Health Nurses (OHNs). This will require additional training to allow OHNs to utilise the (EDL) in future. As yet such courses are not accredited by Medicines Control Council and discussions are ongoing with the various departments and statutory councils. SASOHN will inform its members when these uncertainties have been cleared up and which courses have been accredited for these purposes.

Dr Mike Baker

Department of Health appointment

Rose Smart has been appointed to the position of Director of HIV/AIDS and Sexually Transmitted Diseases. She has been working on a contractual basis in the directorate and has been appointed on a two year contract

Rose Smart was chosen because of her experience in working with AIDS/HIV patients in Kwazulu Natal and because she was well versed in AIDS and HIV matters on both provincial and national levels

Among other things, she has been responsible for the RDP and the inter-sectoral component of the directorate's operational plan. She was also involved in the development of inter-departmental structures to assist government departments to develop their own operational strategies and address the impact of AIDS/HIV.

Advancing your career

The Institute of Occupational Hygienists of Southern Africa (IOHSA) was officially launched in 1993 with the aim of registering occupational hygienists who meet appropriate standards of formal education and practical experience.

The regulation of the practice of occupational hygiene benefits not only hygienists but also those who employ them and more importantly the employees at risk in the workplace.

IOHSA has developed curricula for a modular training programme for all levels of occupational hygienists. These are designed to meet the expected requirements of the planned National Qualifications Framework and will be gradually phased in.

If you are already practicing some or all aspects of occupational hygiene you may be entitled to register with IOHSA.

Some of the many benefits include:

- Recognition of your qualifications and/or experience
- Proof of your commitment to strict ethical standards
- Opportunities for ongoing professional development

For further information contact Brenda Webster, Tel/fax: (012) 46-7424

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Contributions are always welcome. Opinions, short reports, letters and articles should be sent to: The Production Editor, Occupational Health Southern Africa, PO Box 2433, Randburg, 2125. e-mail address: cannon@solo.pipex.co.za

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1. Zwarenstein M, Barron P, Tollman S, *et al.* Primary Health Care Depends on the District Health System. S Afr Med J 1993; 83:558.

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Legionella Action Group

A conference in the USA for the American Legion in 1976 left several ex-soldiers dead. The cause was later ascribed to the presence of a then unknown bacterium which was present in the aerosol of the air-conditioning system of the hotel where the conference was held. The bacterium was isolated and named *Legionella* after this incident and has since been isolated from water systems at hospitals and dentists, industrial cooling water systems, surface water and soil.

A successful *Legionella* seminar and workshop, convened collaboratively by the CSIR and NCOH, was held on 20 September 1995. The main purpose was to create an awareness of the prevalence of *Legionella* in South Africa and the associated public and occupational health risks. The workshop focused on the importance of standard detection methods, guidelines for water treatment and maintenance of water systems and the protection of public and worker health.

To address these issues, a *Legionella* Action Group (LAG) was formed, representing industry, universities, research organisations and routine laboratories. The main objectives of the LAG are to collect and disseminate information on *Legionella*, to evaluate detection methods in biofilms, bulk water and aerosols, to recommend procedures for analysis and sampling and to recommend appropriate treatment methods for water systems contaminated with *Legionella*. The LAG also intends building a data base of available information on the subject, which will be accessible to all workers in the field, and to hold regular workshops/seminars in various centres around the country. These will focus on both industrial and medical issues.

A collaborative research project, under the management of Delene Bartie (NCOH) has been initiated in an attempt to address some of these issues. The *Legionella* Action Group hopes that this study will initiate the first stages towards a better understanding of this controversial organism, and intends to report on their activities regularly through publications in appropriate newsletters and journals. Contributions and/or comments from all other interested parties are welcome.

The members of the LAG are Delene Bartie (NCOH), Pauline Coubrough (CSIR), Esme Croucamp (SWIFT), Yvonne Bilgeri (SAIMR), Kelly Reynolds (ESKOM), Roy Roos (SABS), Audi Snyman (Polifin), Charles Bodenstein (Chematron), Hanlie Prinsloo and Fred Goede (SASTECH).

For further information please contact:

Delene Bartie (NCOH)
Tel (011) 720-5734
Fax (011) 720-6608 or

Pauline Coubrough (CSIR)
Tel (012) 841-3952
Fax (012) 841-4785

The Occupational Hygiene Association of Southern Africa (OHASA) annual conference

Date: 19 and 20 March 1997.
Venue: Cape Town Technikon
Theme: Occupational Health in Southern Africa
Enquiries: P Wepener at tel: (021) 460-3219

Some aspects of AIDS in the workplace (part 2)

Janina Slawski

AIDS and incapacity in employment

The way in which employees who are HIV positive or who have AIDS are managed in the workplace and the point at which they are viewed as being incapacitated will impact on the costs of providing death and disability benefits as well as on the ability of employees to continue adding value to their employer for as long as is possible.

Figure 1 illustrates an estimated distribution of new AIDS cases by duration since infection for one thousand new HIV infections, while Figure 2 illustrates an estimated distribution from AIDS to death for one thousand new AIDS cases. It must be remembered that HIV and AIDS was only recognised as a disease complex in the late 1970s. Our knowledge of the average progression from HIV to AIDS is therefore fairly accurate over the first fifteen years of infection, but becomes increasingly uncertain thereafter. Differences in the likely progression in a South African environment as compared with more developed countries such as the United States add additional uncertainty.

Figures 1 and 2 illustrate the estimated distribution of AIDS cases according to a clinical definition of AIDS. The point at which a clinical definition of AIDS is made may differ significantly from the point at which an employee is viewed as being incapacitated in terms of their job function, as well as from the point at which they are regarded as qualifying for a disability benefit payment. The latter two decision points will depend upon the definition of "incapacity" or "disability" that is in use.

In making employment decisions, the ability of the employee to perform their job function will be the critical decision making criterion. This ability will differ significantly between different jobs. For example, for jobs requiring a high proportion of manual labour, the point of inability to perform job function will probably be met sooner than with a more sedentary type of job.

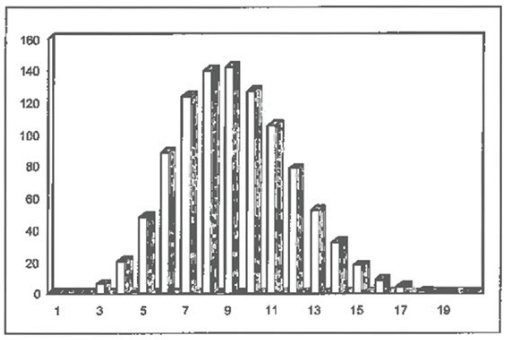

Figure 1: Duration from HIV to AIDS per 1 000 new infections

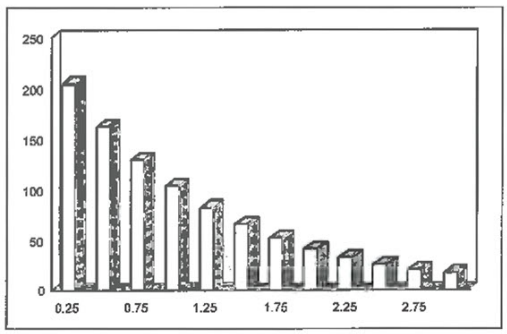

Figure 2: Duration from AIDS to death per 1 000 new AIDS cases

The definition of disability for payment of disability benefits may differ from that used for the employment decision. In particular, there may be a waiting period for a disability benefit. Although the person may be viewed as unemployable from the start of the waiting period, the benefit may only become payable at the end of this period. In terms of AIDS, use of waiting periods may significantly increase the number of people who die "in service" before they become eligible for disability benefits.

Miss Janina Krystyna Slawski
Actuary
Risk Management Consultancy,
Southern Life Association,
Cape Town

Occupational Health SA 1997, Vol 3, No 1 9 - 11

Practical management issues

Decisions regarding employability and eligibility for benefit payments will require consideration of several practical management issues. In particular, the application of the Labour Relations Act, 1995 will influence decisions regarding incapacity due to AIDS. This new Act introduces a requirement that employers consider alternatives in respect of a potentially disabled employee. The employer is required to investigate all reasonable alternatives for the re-structuring of the employee's job. This implies that employers should investigate all alternatives that are not unduly burdensome to the employer's business. Each employer will need to consider and be prepared to justify the extent to which he has tried to find alternatives for the employee, particularly where he has decided that a certain alternative is unaffordable or too disruptive for his business.

In respect of AIDS, an employer will therefore have to consider whether there are alternative positions available to an employee who can no longer perform his or her current job function, or whether the current job can be changed in a way that would allow the employee to continue working despite the emerging effects of AIDS.

In practice, the investigation required in respect of the employee will be undertaken by the direct manager of the individual, with the support of the Human Resources Department. The start of this process may not be obvious in the case of HIV and AIDS relative to instances where an employee is suddenly disabled, for example due to injuries sustained in a car accident. For many years an HIV positive employee will be able to continue working at their full capacity, as they did before they became infected. In fact, for many years both the employee and the employer could be completely ignorant of the employee's HIV positive status.

In the later stages of infection, however, the employee will become less and less able to fulfil the requirements of the job. The role of a performance management system could be critical in terms of managing the long term effects of AIDS. Application of a performance management system would involve the manager and employee agreeing to and documenting the outputs required from the employee for a coming period of, for example, three months. The agreed outputs will take cognisance of the perceived capacity of the employee at that point in time. At the end of the period, the actual output achieved can be reviewed against the expected outputs, and any differences allowed for in a newly agreed set of outputs for the coming period. Any re-structuring of the job should be done during this process with consultation between employee and manager, and input from other parties where required. For example, support may be given by a Human Resources representative, an occupational health expert, or by a trade union or employee representative. The documentation of this periodic process will provide evidence of the joint attempts that have been made to find alternatives for the individual.

It is likely that many managers will find this process of investigation and job re-structuring an unfamiliar one. Companies may consider developing specific training programmes aimed at equipping managers with the skills necessary to be able to manage a potentially disabled employee in a sensitive and positive manner.

Clinical and laboratory staging of HIV and AIDS

When making employment capacity decisions, a critical part of the analysis will be the determination of an employee's ability to perform certain job functions. The use of clinical and laboratory staging tests may be useful in this respect, particularly when it is necessary to determine whether the employee's current stage is likely to be temporary or permanent.

Table1: Karnofsky Performance Scale

100	Normal, no complaints, no evidence of disease
90	Able to carry on normal activity: minor symptoms of disease
80	Normal activity with effort: some symptoms of disease
70	Cares for self: unable to carry on normal activity or active work
60	Requires occasional assistance but is able to care for needs
50	Requires considerable assistance and frequent medical care
40	Disabled: requires special care and assistance
30	Severely disabled : hospitalisation is indicated, death not imminent
20	Very sick, hospitalisation necessary: active treatment necessary
10	Moribund, fatal processes progressing rapidly

Table I illustrates the Karnofsky Performance Scale as used to stage HIV and AIDS. Such a scale may be used by an employer to categorise job functions, that is that in order to perform cerain jobs, employees might have to have a Karnofsky score of 80 or more, whereas for other jobs, employees with scores of 40 or more might be quite capable of fulfilling the job requirements. Such an exercise of assigning jobs to particular scales may be particularly useful when it comes to identifying alternative jobs for a particular employee.

Table II: World Health Organisation Clinical Stages

Stage One:

1. Acute retroviral infection
2. Asymptomatic
3. Persistent generalised lymphadenopathy (enlargement of the lymph nodes)
4. Performance scale one: asymptomatic, normal activity

Stage Two:

1. Weight loss, less than 10% of normal body mass
2. Minor mucocutaneous manifestation such as seborrhoeic dermatitis, prurigo, fungal nail infections, recurrent oral ulcerations, and angular cheilitis
3. Herpes zoster (shingles) within the last five years
4. Recurrent upper respiratory tract infections
5. and / or Performance Scale 2: symtomatic, normal activity

Stage Three:

1. Weight loss greater than 10% of normal body mass
2. Unexplained chronic diarrhoea lasting for longer than a month
3. Unexplained prolonged fever (intermittent or constant) for longer than a month
4. Oral candidiasis
5. Vulvovaginal candidiasis, chronic (for more than a month) or poorly responsive to therapy
6. Oral hairy leukoplakia
7. Pulmonary tuberculosis within the past year
8. Severe bacterial infections such as pneumonia
9. and / or Performance Scale 3: bed ridden less than 50% of the day in the last month

Stage Four:

1. HIV wasting syndrome
2. Pneumocystis Carnii Pneumonia (PCP)
3. Toxoplasmosis of the brain
4. Cryptosporidiosis with diarrhoea for longer than a month
5. Cryptococcosis (extrapulmonary)
6. Cytomegalovirus (CMV)
7. Herpes Simplex Virus
8. Progressive Multifocal Leukocephalopathy
9. Histoplasmosis; coccidioidomycosis
10. Oesophageal, tracheal, bronchial or pulmonary candidiasis
11. Atypical mycobacteriosis (disseminated)
12. Non-typhoid salmonella septicaemia
13. Extrapulmonary tuberculosis
14. Lymphoma (most commonly Non-Hodgkin's Lymphoma)
15. Karposi's Sarcoma
16. HIV encephalopathy
17. and / or Performance Scale 4: bedridden for more than 50% of the day during the last month

Table III: World Health Organisation Laboratory Staging

WHO laboratory staging	CD4 count per mm3	Total lymphocyte count
A	> 500	> 2 000
B	200 - 500	1 000 - 2 000
C	< 200	< 1 000

The decision as to which Karnofsky stage an employee has reached is, however, a fairly subjective one. The process can be made less subjective by drawing up lists of questions to be asked and the interpretation to be used for the answers of such questions. A less subjective way of assessing an individual would be to use clinical disease staging, or laboratory testing.

The World Health Organisation divides the course of HIV and AIDS illness into four clinical stages - see Table II

In addition to the clinical staging system, the World Health Organisation recommends the use of laboratory staging - see Table III

The combined use of the WHO clinical and laboratory staging systems can give objective clarity on the severity of a person's illness. For example, someone who is classed as a Stage 3A has a high chance of recovery due to their high CD4 or lymphocyte count, whereas someone classed as a Stage 4C has a much lower chance of recovery.

Conclusion

This article has given an overview of some, but certainly not all of the aspects that will be faced in the workplace in terms of HIV and AIDS disease. The management of HIV and AIDS in the workplace is a reality that will have to be faced by many companies over the next decade. The range of implications that should be thought through are complex and wide ranging. This process of thinking through these issues in advance does, however, raise the possibility that people with HIV and AIDS will be treated in a sensitive and thoughtful way in the workplace. Constructive ways can be found to help ensure that HIV positive employees can continue to work and add value to their employer for as long as is possible, and that they will be seen as truly valued employees by all parties concerned.

The evolution of a Southern African Institute for Occupational Hygienists

R Truter and R Ferrie

Abstract

The formation of an organisation for the professional registration of occupational hygienists in Southern Africa, the Institute of Occupational Hygienists of Southern Africa (IOHSA), in February 1994 was the product of much debate and discussion amongst a large and diverse group of concerned hygienists. These discussions originated in 1990 following the recognition that there was a great need for a set of independent and credible standards for the education and training of occupational hygienists. In addition to setting these standards, IOHSA also registers those occupational hygienists meeting the laid down standards, ensures their ongoing professional development; and disciplines those found guilty of any misconduct.

This paper outlines the formation of IOHSA and deals with some of the pertinent issues currently facing the profession.

Formation of IOHSA

In 1989 a meeting of concerned occupational hygienists was held at the Industrial Hygiene Laboratories at the Chamber of Mines Research Organisation in Johannesburg. It was an important starting point and resulted in the formation of a Working Group of approximately 20 occupational hygienists. This group identified and evaluated a number of options for developing and maintaining independent and credible standards and mechanisms for the education and training of occupational hygienists; ensuring their ongoing professional development; registering those occupational hygienists meeting the laid down standards; and disciplining those found guilty of misconduct. It was decided to form separate sub-committees to investigate key issues and formulate proposals to the Working Group.

The proposals led to the acceptance that a separate body for the professional registration of occupational hygienists should be formed. It was decided to name this body the Institute of Occupational Hygienists of Southern Africa (IOHSA) and a draft Constitution and set of Bye-Laws were developed to ensure the Institute operated in an independent but accountable manner.

In February 1992, at the Occupational Hygiene Association of South Africa (OHASA) National Conference, a Transitional Committee was elected to oversee the process of forming IOHSA. A unique process in this election was the concept of electing one representative from each employment sector in which occupational hygienists are active - i.e. Industry, Mining, Education, Trade Unions etc. The Committee's role was to finalise the necessary arrangements and launch the Institute. In late September 1992 the Committee held discussions with the Chief Inspector of Occupational Safety at the Department of Manpower, Mr M Mulder and the Government Mining Engineer, Mr Jan Raath. Strong support was given for the concept of a professional body for Occupational Hygienists by both these persons. After much hard work by the Transitional Committee the Institute was formally launched at a function at the Eskom Club in February 1994.

Objectives

The three main objectives of the Institute are:

- To promote and develop the profession of occupational hygiene to meet the needs of industry and the community at large.
- To promote and encourage the study of and teaching and training in occupational hygiene.
- To regulate the profession of occupational hygiene with particular

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reference to professional registration, use of title and ethical conduct of members of the Institute.

Categorisation of Occupational Hygienists

The following categories of membership are provided for members:

Table I:Membership categories and requirements of IOHSA

Occupational Hygiene Assistant	Suitable academic background with relevant occupational hygiene subjects and, working under the supervision of a registered hygienist or engaged in appropriate study.
Occupational Hygiene Technologist	B.Sc. degree requirements or appropriate M+3 qualification, and 2 years relevant experience.
Occupational Hygienist	B.Sc. Honours degree or appropriate M+4 qualification, and 2 years relevant experience.
Professional Occupational Hygienist	Relevant Masters degree or appropriate M+5 qualification, and 2 years relevant experience.

A "grandfather clause" was included for a 2 year period after the launch of IOHSA to allow initial membership by practising hygienists with more than 10 years of relevant and comprehensive experience. This has now fallen away and all hygienists applying for categorisation have to pass a short written examination and attend a formal interview with members of the IOHSA Examination Board.

Modular sytem

Minimum standards for a set of outcomes-based educational modules for occupational hygienists have been developed by a sub-committee of eminent educators with experience in this field. Once these modules are being offered by a sufficient number of training establishments, all hygienists will be required to pass the appropriate courses before they can be considered for registration at the appropriate level by IOHSA. The modular system of education has, at each level, a minimum number of core subjects plus a choice of specialist subjects. This should allow all occupational hygienists to advance within the profession while remaining in their specialised field of practice. In this way the very wide scope of activities within our profession should be able to be accommodated without prejudice to any particular sector.

These standards are currently being advertised and any education provider can request to have courses meeting these standards accredited by IOHSA.

Membership of the Institute

Currently the membership of IOHSA stands at 113 registered members. The membership and geographic distribution of registered hygienists is given in Figure 1. As might be expected due to the concentration of industrial activity, the majority of registered hygienists operate in Gauteng. Hygienists from all over South Africa have however been registered and it is our intention to begin actively recruiting members from other Southern African countries.

In Figure 2, a breakdown of the areas of operation in which our members are active is given. It should be noted that some members are active in more than one area of operation.

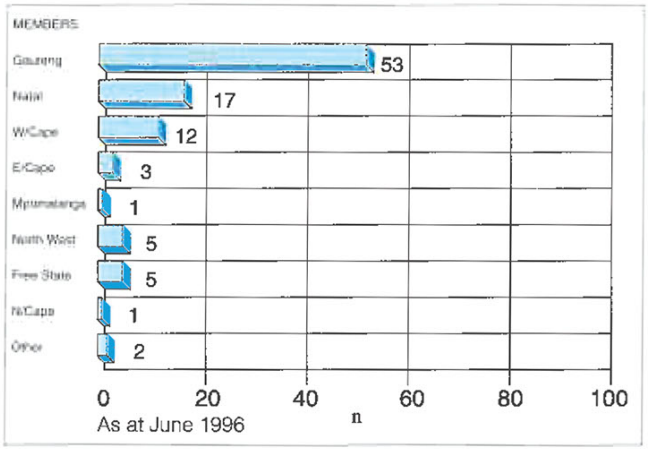

Figure 1: Membership of IOHSA - Geographic

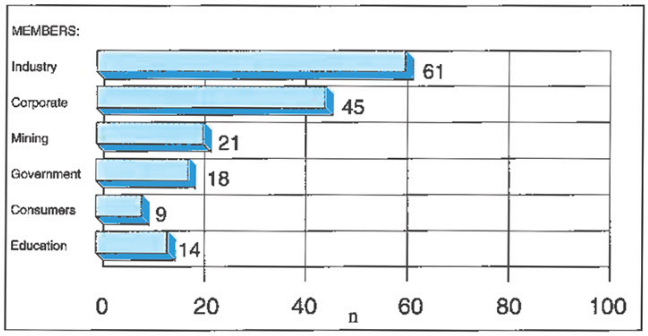

Figure 2: Membership of IOHSA - Areas of Operation.

Issues currently facing Occupational hygienists in South Africa

Regulation and control

For many years there have been calls by those involved in the health and safety field for the training, control and regulation of persons practising occupational hygiene[1]. It was hoped that government would provide this control and regulation by means of legislation but when the Department of Health abstained from providing a legal framework for the control of the profession, the Occupational Hygiene portfolio was taken up by the then Department of Manpower. This government department has done much to improve the field of occupational health but while they gave recognition to the Occupational Health Nurse and Doctor they did not provide any official recognition for the Occupational Hygienist. Hence the dire need for a professional home for the Hygienist.

The reasons for the strong recognition of the nurse and doctor are perhaps twofold. Firstly, occupational medicine practitioners were already operating as registered professionals under the South African Medical and Dental Council. Secondly, and more recently, the Department of Labour adopted a policy of self regulation. This policy was intended to leave the employer free to decide on how best to achieve the desired control of occupational health issues. While this approach has much to recommend it in general, it does leave occupational hygienists in the awkward position of having to compete for work with a host of untrained "consultants" with little knowledge of workplace health hazards.

Department of Labour, Technical Committee Recommendations

A Technical Committee was established in 1987 by the Department of Labour to investigate methods for regulating occupational health and safety practitioners. Their findings, published in 1992, included the recommendation that Lead Bodies for Occupational Health and Safety be established to determine standards for these professions[2]. IOHSA, in conjunction with the Institute of Safety Management (IoSM), have attempted to meet that recommendation by setting up the Registration Board for Occupational Health, Safety and Associated Professionals (OHSAP) as a Section 21 Company. This Board consists of 2 representatives each from occupational hygiene (IOHSA) and safety (IoSM), as well as methods for regulating occupational health and safety practitioners. Their findings include the need for a secretary and a registrar. This Board is regulated by a Council consisting of nominated representatives from affected sectors of society - Employers, Employees, Government, Practitioners and Educational bodies.

The Lead Bodies for each profession will make recommendations to OHSAP regarding the recommended qualifications and experience necessary for practitioners to be categorised and registered under the National Vocational Qualification system as envisaged under the recently promulgated South African Qualifications Act[3].

An exclusive or inclusive Professional Institute?

While it is accepted that the practice of Occupational Hygiene needs to be controlled, IOHSA does not want to set impossibly high educational requirements which would effectively exclude many of those hygienists currently practising and prevent the previously disadvantaged sectors of our society from entering the profession. This exclusive type of approach could create the impression that the Institute of Occupational Hygienists is an elitist club whose members are more interested in looking after their own interests rather than addressing the real health needs of the workplace.

For this reason it was decided to frame the rules for registration in such a way that an applicant's relevant experience in the practice of occupational hygiene is taken into account. This inclusive process ensures that all aspiring occupational hygienists are given an equal opportunity to improve their professional abilities and to enrich the profession with their contribution.

Technikon or university qualifications?

This is not a new debate nor are the arguments. The debate around whether a student educated at a university is "better" than one from a Technikon is an issue which will probably always be heated and divisive. Each has their own strengths and weaknesses.

Rather than creating division amongst the profession, the most important criterion is the personal ability and competence of the resulting occupational hygienist. It is well recognised that even the most highly qualified university graduate or technikon diplomate is not automatically the best occupational hygienist. Only through personal integrity and the proper use of acquired knowledge can an individual reach the highest professional standards. Each occupational hygienist should therefore focus on elevating one's own personal knowledge and standards of professionalism within the fellowship of the peer group. The abilities and competence of each occupational hygienist can therefore best be evaluated through an open certification process involving peer review and acceptance.

The role of practising occupational hygienists?

The benefit of inclusivity allows everyone an equal chance within a pre-determined framework, and also strengthens as well as enhances the profession. In addition it enables all occupational hygienists to speak with one voice and develops unity and stability within the profession.

Perhaps however the strongest argument for the registration of those with sufficient practical experience is that peer discipline becomes possible. In this way all practitioners are made fully aware of the standards that are expected of them and persons employing or contracting registered occupational hygienists are guaranteed a quality service.

Industry perceptions of occupational hygiene

Coupled with the need for inclusive control and mutual participation is an overriding need to improve the professional standing of occupational hygiene. Complaints about the services rendered or the professional approach of occupational hygiene consultants are often heard from Industry.

On the surface, it would be easy to ascribe the blame to the lack of adequate qualifications or experience of practitioners. However, perhaps the real problem is not only the lack of professionalism, but a failure of the profession itself to educate industry regarding the deliverables of an occupational hygiene service.

A concerted effort on the part of all occupational hygiene bodies in general, and IOHSA in particular, is necessary to instill in industry a basic understanding of occupational hygiene.

Such an educational drive should focus on the following aspects :

- Explaining how occupational hygiene relates to safety, occupational medicine, environmental and factory sanitation issues.
- Understanding the role of the legislated Approved Inspection Authorities.
- Explaining the limitations of an occupational hygiene survey for alleviating adverse health impacts and how the hygienist's efforts are affected by the client's budget, terms of reference and particular needs.
- Outlining what the customer should expect in general terms from occupational hygiene inspections, audits, surveys or reports.

This list, while not comprehensive, underlines the fact that as specialists we have failed to educate and inform our clients. In the process we have allowed industry to perceive occupational hygiene as something complex or theoretical and far removed from the day to day operation of their business. More importantly we have failed those whom we are dedicated to protect - the workforce.

A Code of Ethics

IOHSA has developed both a Code of Ethics and a Code of Conduct for registered hygienists. It is intended to vigorously implement these and discipline members found guilty of unprofessional or unethical conduct.

All complaints about the conduct of colleagues should always, and only, be dealt with through the Institute. It is most distressing to regularly hear individual occupational hygienists being openly criticised in public forums and it is hoped that the Code of Conduct will improve this situation.

International recognition

IOHSA has recently applied for and will soon be granted membership of the International Occupational Hygiene Association (IOHA) which will place IOHSA in the international spotlight. IOHSA views

this membership as critical as the return of multinational businesses will create a need for the use of competent and credible occupational hygiene professionals. Local hygienists will undoubtedly benefit from contact with other members of the occupational hygiene community throughout the world.

Emerging trends

A number of emerging trends are shaping the path of the profession at present , both here and in the international arena.

These issues include:

- The implications of the proposal to extend the ISO 14000 series standards to include occupational health and safety issues such as British Standard 8800
- Occupational health nurses and safety officers becoming increasingly active in the measurement of occupational hygiene factors
- Environmental health officers becoming more involved as the Department of Health implements primary health care at metropolitan and rural level in an attempt to meet the needs of communities not having direct access to occupational health and safety services
- The recent promulgation of the South African Qualifications Act (SAQA) and the development of the Lead Body concept to ensure unified competency based qualifications
- The influence of the International Labour Organisation, World Health Organisation and other international health and safety agencies on South African policymakers
- The widening focus of the occupational hygienist into environmental health issues affecting the community

Pulling together

Establishing and developing a professional body can be a difficult and painful process. At such a time, all the practitioners involved need to put aside petty jealousies and work together to achieve a brighter future for all. It is clear that if occupational hygiene is to survive and prosper, we need to present a united and professional front to industry. This can only be achieved by allowing the participation of all those practising occupational hygiene and encouraging, and where necessary enforcing, professional standards of behaviour.

IOHSA is prepared to act as an ombudsman to hear and, where possible, address industry's complaints regarding the services rendered by registered occupational hygienists. This will not only enhance the standing of the profession in industry, but it will ensure ongoing pressure is put on the profession to improve standards.

The importance of properly trained and experienced occupational hygienists in reducing the incidence of work related illness has long been recognised in most industrialised nations. Can we receive the same recognition in the rapidly developing region of Southern Africa ? The simple answer is: Of course - but only if we work together to make it happen !

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Continuing Education in

PRIMARY HEALTH CARE

Medical gloves and barrier protection

Since the turn of the century, natural rubber gloves have been worn to protect the patient from microorganisms shed from the hands of healthcare workers. Beyond their role as a tool of infection prevention, little thought was given to the role gloves played in hand protection until the spectre of potential infectivity by HIV, HBV, HCV, HGV, and other blood borne pathogens was established. As a result, gloves are now considered the first line of personal defence against infection and/or injury in the practice setting.

Although the wisdom of compliance with hand protection remains unquestioned, simply donning gloves cannot ensure universal safety for either health worker or patient. The degree of protection afforded by a glove is directly related to the quality of the glove chosen, the task undertaken, duration of the procedure, conditions of use, and the physical, chemical, biological, or radiological hazards to which the glove is exposed. Additional factors that play a key role in wearer protection include the inherent strength, durability, design, and quality of the glove material selected as a barrier.

Without question, a glove should function as a physical barrier against:

- The transfer of microorganisms to or from the hands of the wearer.
- Allergens in the glove.
- Shedding of powder or particulate debris.
- Pyrogens and endotoxins.
- Residual chemicals which may remain after manufacture or sterilisation.
- Deformation due to hydration.

Environmental hazards that may lead to barrier failure.

A glove barrier is defined as an item of personal attire that protects the hand or any part of the hand, wrist and forearm from chemical, biological, or physical hazards. To serve as a barrier the glove must be intact - that is, without manufacturing defects or holes. Tests considered appropriate when evaluating the barrier integrity of gloves fall into three categories:

- Those tests intended to ensure quality during and after manufacture.
- Those that quantify antigenic potential.
- Those that more thoroughly challenge the barrier with viral or chemical agents under laboratory conditions.

Determining the occupational risk posed by an inadequate or poorly chosen glove involves a basic understanding of the risks posed in relative terms, whether actual or potential. As a general rule there are three categories of hazard against which gloves must provide protection.

Physical hazards

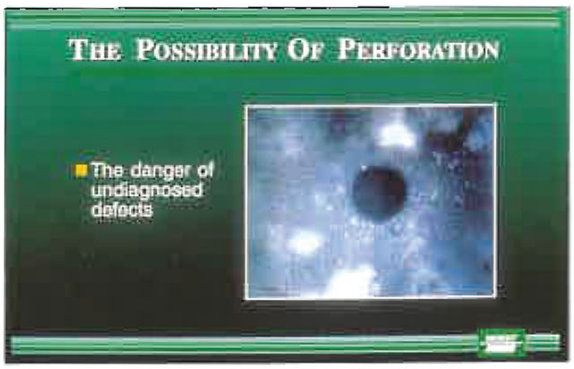
Personal injury may be caused by abrasion; by contact with cutting edges such as scalpel blades, needles, and other sharp objects; by heat; or by excessive cold. In the clinical setting, these hazards are fairly easily identified and protection is a relatively straightforward matter that is accomplished through work practice controls such as puncture resistant hand coverings, double glove systems, or special gloves designed for thermal protection.

Chemical hazards

Ensuring adequate protection against chemical hazards is more difficult because it requires some form of impervious barrier between the substance and the skin. Because of the wide range of chemicals used in the health care setting gloves must demonstrate permeation and degradation resistance. Additionally, the breakthrough time for various chemicals that will be in contact with the glove must be established through laboratory testing. Chemicals in contact with gloves may not cause any visible degradation, but may expose the user's hands to contamination risk. Permeation and degradation testing provide an extra margin of safety by ensuring that chemical molecules do not pass through to the inside of the glove. Because glove thickness has been identified as a major determinant of permeability, it should be considered when choosing a chemically resistant product.

Chemically resistant gloves may include nitrile, neoprene, or triple-dipped latex gloves coated with polychloroprene or may be made of a non-dipped natural rubber. The choice of glove, however, must be matched to agent toxicity , its role as a carcinogen or mutagen, corrosion potential, and the danger that the chemical or combination of chemicals presents to the worker.

The primary departments using chemically resistant gloves are laboratory, pharmacy, and housekeeping. Gloves chosen for use in these departments are usually tested for physical resistance to a range of agents including cyclophosphamide monohydrate, carmustine, metholorethamine, hydrochloride, acetone, sodium hypochlorite, phenol, formalin, glutaraldehyde, methylactylates, and resinous materials (HEMA, TEGDMA, BISGMA and UEDMA). Although a 12 to 14 mil natural rubber latex glove will normally provide protection against monomer penetration, breakthrough times can vary from 5 to 80 minutes depending on the chemical.



To ensure clinical needs are met, however, a buyer must possess a thorough understanding of the clinical application for which the glove product is chosen. This information will help define the physical limitations of glove materials and will determine barrier characteristics such as length, thickness, cuff design, hydration potential, permeability, and tactility, which are essential for worker protection.

Permeability is a process that can be defined as the flow of chemical or biological materials through seams, pinholes, imperfections, or porous materials in protective hand coverings. It comprises of two measurements:

Breakthrough Time (BTT) - The time it takes for a drug or chemical to pass through the gloves measured in minutes

Permeation Rate (PR) - The rate that the chemical transmits through the gloves after breakthrough as measured in milligrams per square meter per minute.

Because the array of potential hazards to which the glove is exposed is legion, the product chosen as a barrier must be matched to function. The risk of exposure over time must be weighed against the level of protection required to prevent injury. Failure to do so places both the practitioner and patient in harm's way.

Biological hazards

Although health care workers assume that all glove materials serve as an effective barrier against pathogen exposure, researchers have shown that the barrier effectiveness of a glove can be compromised by hydration; stress such as twisting, friction or tension; temperature; skin oils; and wear duration.

All latex gloves absorb water, primarily from perspiration and/or contact with the patients' body fluids. Some gloves hydrate very rapidly while others appear to resist hydration. Because fully hydrated gloves will develop irreversible elongation after repetitive extension the rate at which a glove absorbs water also plays a role in the risk it poses. A hydrated glove will lose intimate contact with the skin, thus impairing grip. Hydration also plays a role in allergy by allowing water-soluble latex proteins to more easily be extracted from a hydrated glove. The rate at which gloves lose their barrier effectiveness also figures heavily in occupational exposure . Dalgleish questioned whether a hydrated latex glove facilitated the passage of viral particles. While his comprehensive investigation demonstrated that a hydrated Biogel® glove did not permit passage of pathogens, however, the observation was not extended to other latex glove brands in this study.

According to researchers, most synthetic gloves

are not appropriate biological barriers for use in high-risk clinical situations because they do not reseal and tend to decrease in integrity within a few minutes. In a study performed by Gershey, PE and PVC gloves were found to be penetrated frequently by viral particles. PE gloves had a 40% failure rate, PVC a 22% failure rate, and latex gloves a 0-2% failure rate. Documented failure of PVC gloves was also confirmed under in-use conditions by Korniewich, Reingold, and Larson. Based on these findings, biochemical performance characteristics should be incorporated into selection criteria to ensure barrier performance against glove hydration, irreversible elongation and in-use failure.

In granting a 510(k) to a glove manufacturer, the FDA recognises certain ASTM test methods that define the physical properties and usually tested for stress resistance, tensile strength, elongation, holes, sterility, glove dimension, and material properties. Additionally, a few manufacturers conduct 100% post-manufacture inspection for holes.

The worldwide concern over the spread of HIV and other blood borne viruses, has lead to a boom in the demand for both sterile and non-sterile gloves.

Inevitably this brought a flood of supply, not only from established manufacturers, but also from hundreds of new, inexperienced companies. Not surprisingly, the quality of gloves produced has been found to vary greatly from manufacturer to manufacturer and even from batch to batch. Some have a high incidence of microscopic holes - before use, while others may not be able to with-stand rigorous procedures. All this has made the task of questioning the quality and protective ability of a glove even more important, and even more difficult.

The British Standard Institution verifies good quality sterile gloves with the British Standard Kitemark. These products are manufactured to BS4005 which stipulates that every single glove is tested for holes.

Non-sterile examination gloves tend not to be so rigorously tested. For instance the Department of Health Standard in the UK requires only small samples of each batch of non-sterile gloves be tested for holes. Out of a batch of 35 000 gloves, only 125 would be tested, and if no more than 5 gloves have holes in them, the entire batch is passed. This batch testing method, therefore, tests less than half of one percent of gloves for holes. Even if it is representative, it allows a four percent failure rate. In fact studies have shown that two out of three pairs of some brands of non-sterile procedure gloves have holes in them before use. Any defect may be unseen, but could still be large enough to allow infected blood and other fluids to pass through with all the risk which that entails.

There are two main methods of testing gloves. The first is electronic. This is done while the glove

Air inflation testing

is on the former and involves passing a current between the former and an electrode in the tank. If the glove is intact no current will pass. However, this method has two failings. It will not detect small holes or weak spots, which only appear when the glove is stretched in use, nor will it detect any holes which occur after the glove has been removed from the former, during processing and packaging.

The second method is to inflate and laboriously inspect every glove visually and manually before it is packed. This is better than electronic testing but is slower and more labour intensive.

BS4005 and other European Standards have now been superseded by CE Marking. Non-sterile examination and procedure gloves are class I, the lowest risk class. The responsibility for conformity with the directive rests entirely with the manufacturer and no involvement of a notified body is required. Sterile surgical gloves are class IIa. For class IIa products the notified body has to certify that the production process is up to the standard required by the Directive. There are a number of ways in which this can be done. Broadly it requires compliance with one of the Quality Management Systems laid down in the internationally accepted ISO 9000 series of standards.

Summary

Only intact gloves can provide an effective barrier against blood borne pathogens and other potentially infective body fluids. It is therefore critical to use gloves that are manufactured to a reliable standard, and gloves that will not puncture or tear or degrade in any way during use. Find out from the manufacturer what standards their gloves meet and what independent testing has been carried out to see how they compare with other manufacturers' products in use. Only then can a decision be made on which product to use, based on reliable information, not price or inferior knowledge. The risks are far too great to not ensure the best possible protection.

For further information please contact: Maggie Smock, tel (011) 314-3102.

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Rationale for the national guidelines for the management of sexually transmitted disease (STD)

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The epidemic of STDs is one of the major challenges facing the health care sector in South Africa today. It is estimated that 5 million South Africans are infected with at least one STD each year and a large proportion of the population has at least one STD in their life time. Apart from the morbidity caused by STDs, the presence of a genital ulcer increases the risk of acquiring HIV by up to 10 times and the presence of a urethral or vaginal discharge up to 5 times[1]. One of the reasons why the rate of HIV infection is so high in Africa is because of the high rates of persons with untreated STDs.

One of the strategies to control this epidemic is a simple and effective programme to manage persons with STDs. The essential components of this approach include taking a good history, performing a clinical examination and providing comprehensive management that includes treatment, information, education and counselling on compliance, risk reduction, the use of barrier methods such as condoms and the management of sexual partners.

National guidelines for the management of a person with an STD according to the Essential Drugs List (EDL), have been developed by the Directorate: HIV/AIDS and STD of the Department of Health and are inserted in this issue of the journal. The rationale behind the management of the three most frequently-seen syndromes is outlined below. In future editions, details of the other key components of this approach and the strategy to control the epidemic of STDs will be outlined.

It has been shown that managing persons with STDs by providing treatment for the group of diseases which cause one or more signs or symptoms rather than by treating a specific disease is more efficient and cost effective.

- Firstly, it is well established that it is not possible to diagnose specific STDs with a high degree of accuracy using clinical criteria alone as signs and symptoms vary and overlap[2,3].
- Secondly, mixed infections are common - especially in women[4].
- Although the alternative is the use of appropriate laboratory tests, there are very few centres in both the private and public health sectors which have the expertise and equipment to provide comprehensive laboratory services. In addition, laboratory tests are expensive, require time and the need to bring patients back.

Urethral discharge in men

Urethral discharge is caused by gonorrhoea in 90 to 95 % of cases. The remainder are mainly due to chlamydial infection. In up to 40% of cases, a urethral discharge is caused by both these infections together, therefore any protocol should include treatment that is effective against both these organisms[5].

Genital ulcer disease in men and women (GUD)

In most parts of South Africa genital ulcers are caused by chancroid (40%) syphilis (40%) or herpes genitalis (10%). Lymphogranuloma venereum and granuloma inguinale are rare causes and occur only in specific areas[5]. As it is not possible to distinguish GUD clinically, treatment should be given for the common curable causes (syphilis and chancroid). Studies conducted in South Africa show that clinicians correctly identified only 30% of cases of syphilis or chancroid in men, only 50% of cases of syphilis or chancroid in women and less than 10% of mixed infections. Mixed infection is also common, 13 to 19% of women and 12% to 14% of men with genital ulcer disease had more than one infection[5].

Vaginal discharge in women

Devising a treatment protocol for vaginal discharge is complex. All discharges are not necessarily pathological or infectious. Infectious discharges in women may arise from the vaginal wall, the commonest of which are trichomoniasis (usually an STD), bacterial vaginosis and candidiasis (both not STDs), and may also be due to cervical infection with gonorrhoea or chlamydia (both STDs). A number of studies show mixed cervical and vaginal infections occurring commonly[4]. Effective management of cervical infection is extremely important because of the serious sequelae that include pelvic inflamatory disease, infertility and ectopic pregnancy.

As gonorrhoea and/or chlamydia are more common in young sexually active non pregnant women, treatment is recommended for these organisms, in addition to treatment for vaginal infections. This necessitates the use of three antimicrobial agents.

As the cost of treating gonorrhoea and chlamydia in pregnancy is very high and as the prevalence is low (gonorrhoea 5% and chlamydia 10%)[5], it is not cost-effective to manage pregnant women with three drugs. It is thus recommended that pregnant women are only treated with metronidazole for vaginal infections and if on return the discharge persists, treat for cervical infection. Treatment for vaginal candidiasis is only recommended where there is a clinical indication. Research to identify which non-pregnant women are more at risk of acquiring cervical infection is encouraged as this will lower the rate of costly over-treatment.

Control of the STD epidemic can be achieved by interrupting the spread of STDs and it is important to develop programmes for the management of all sexual partners. Every opportunity should be used for the further prevention and control of STDs by explaining the importance of completing treatment to prevent the complications of STDs and by promoting safer sexual practices including the use of barrier methods.

Copies of the protocol and training manual can be obtained from the Directorate: HIV/AIDS and STD Department of Health, P/Bag X828, Pretoria, 0001, tel: (012) 312-0121, fax: (021) 326-2891

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Benefit: Cost evaluation of influenza vaccination in South Africa

DJ Martin and BD Schoub

Abstract

Influenza is responsible for considerable costs, both direct and indirect, on an annual basis. Economic data relating to these costs are freely available from the United States of America and the United Kingdom but are scanty in South Africa. This study is an attempt to determine the economic burden of influenza in South Africa.
(i) A large parastatal organisation provided economic data with respect to absenteeism and winter-related costs in 1995 (occupational study).
(ii) Pharmaceutical and general practitioner medical costs for 1995 were obtained from the medical aid industry (health care study).
The benefit:cost ratio (BCR) in the occupational study was 5:1 and in the health care cost study was 1.5:1. In both studies the BCR remained favourable after being subjected to various sensitivity analyses.
Routine influenza vaccination will reduce both direct and indirect costs of influenza in South Africa. Reimbursement policies for vaccine and free industrial immunisation should be given urgent consideration.

Introduction

Among elderly subjects influenza can be a serious infection accompanied by a significant morbidity and mortality, particularly among those in high risk groups. Influenza can also lead to a prolonged debility and malaise, often measured in weeks.[1] This, in turn, can affect absenteeism and a considerable loss of productivity can result. It is estimated that in the USA the direct (medical, pharmaceutical and hospitalisation costs), together with the indirect (loss of productivity) costs approximate $12 billion.[2] Recent case control[3,4] and retrospective cohort studies[5] have demonstrated the effectiveness and cost effectiveness[5] of influenza vaccination for all older persons. These studies have provided a basis for the recommendations that target all elderly persons for vaccination and not just those with high risk conditions.

With a focus on economic issues, a recent study carried out in otherwise healthy adults found a statistically significant reduction in the rates of illness, sick leave and visits to physicians with a nett estimated saving of approximately $47 per person vaccinated.[6]

Data on the economic impact of influenza in South Africa are scanty. This study is an attempt to estimate the potential direct and indirect cost-savings that would result from influenza vaccination, both in the occupational setting and also in the general population. Data for the occupational study was provided by a large nationwide electrical utilities organisation, (Eskom), and data for the general population study data was provided by the nationwide medical aid industry.

Methods

Occupational study

Population Sample

A large parastatal organisation (Eskom) was investigated with respect to absenteeism and winter-related medical costs. The organisation has 40 000 employees countrywide. Data on Eskom was kindly provided by Dr C. Roos, Chief Medical Officer of Eskom.

Health care cost study

Pharmaceutical and medical costs

The data was provided by Decision Surveys International (DSI) and is published as a continuing research study in the National Disease and Therapeutic Index of South Africa (NDTI).

Dr DJ Martin and Prof BD Schoub
are both of the National Institute for Virology and the University of Witwatersrand, Johannesburg

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National Drug and Therapeutic Index (NDTI)

This report is published bi-annually whereby national estimates are projected to the total medical practitioner population within South Africa. Coding and classification systems for diagnosis and drugs are standardised worldwide to permit comparative analysis. The World Health Organisation (WHO) Ninth Revision is employed for diagnosis coding and the classification of drugs.

Retail pharmacy market

- Total - 2825 pharmacies (as at January 1996)
- Sample size - 150 pharmacies
- Data source - wholesalers representing an estimated 95% of sales to pharmacies

Audit of medical practitioners

- Population - patients seen by all practising medical practitioners in all places of private practice
- Estimated number - 7704
- Sample - 400 medical practitioners for a 6 month semester resulting in 800 medical practitioners records per annum.

Population sample

- Estimated patient size - 8.25 million for 7704 general practitioners
- Location - metropolitan and non-metropolitan
- Medical aid population - individuals who have access to medical aid societies in 1995 = 6.5 million (Source: D. Kolver - Registrar Medical Schemes)

Influenza and influenza related diagnosis

- Influenza
- Bronchitis
- Acute upper respiratory tract infection
- Sinusitis
- Tonsillitis/pharyngitis

Note: When the diagnosis of influenza was specified this was included as such. For other diagnoses a proportion of 25% was assumed to be influenza related.[6]

Results

A. Occupational Study (Eskom study)

1. Costs of influenza

a) Absenteeism Costs:

Number of employees	= 40 000
Total salary bill per annum	= R1.85 billion
Number of working days per annum	= 205
Average cost of a working day per person	= R225 61
Absenteeism days June to September	= 97 626
January to April	= 48 173
Therefore winter excess absenteeism	= 49 453
Therefore cost of winter absenteeism	= 225 61 x 49 453
	= R11 157 091

b) Medical Costs:

	June to Sept	Jan to Apr	Winter excess
1995	R	R	R
Medicines	16 097 733	14 328 124	1 769 609
Consultations	5 240 473	4 678 464	562 009
Total costs	21 338 206	19 006 588	2 331 618
1994			
Medicines	15 241 024	12 778 269	2 462 755
Consultations	5 241 941	4 678 768	563 173
Total costs	20 482 965	17 457 037	3 025 928

c) Total Winter-related Costs for 1995:

= R13 488 709 (Absenteeism + Medical Costs)

2. Cost of influenza vaccination

Assumptions	1. Vaccine cost	= R15 (1995 figure)
	2. Vaccine efficacy	= 43% in reducing absenteeism[7]
a) Cost of vaccinating workforce		= R600 000
+ cost of absenteeism to get vaccinated		= R564 000 (assuming half hour absenteeism)
Total		**= R1 164 000**

3. Benefit:cost of influenza vaccination in Eskom = 5:1

a) Costs saved by 100% vaccination = R5 800 145 (43% of R13 488 709)

(Assuming 43% reduction of both absenteeism and medical costs)

b) Cost of vaccinating workforce = R 1 164 000

Therefore benefit:cost ratio of influenza vaccination would be = 5:1

Minor factors not accounted for:

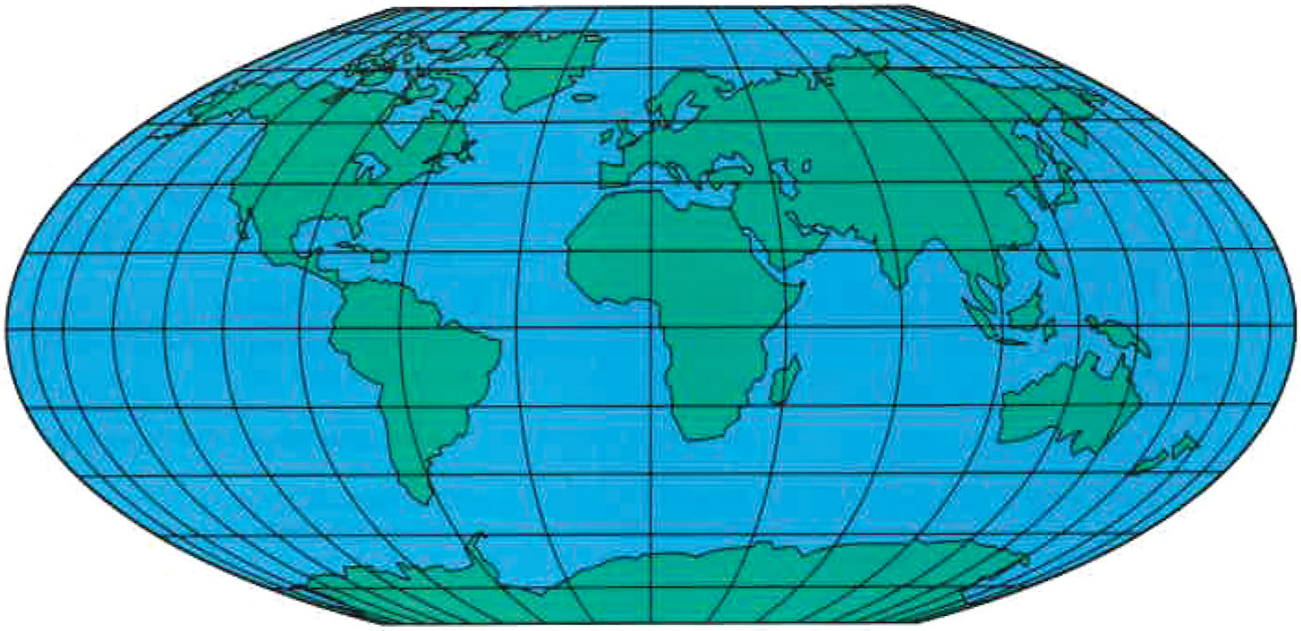
a) Related to cost of influenza

Reduced productivity in convalescence period when worker is back at work after absenteeism

b) Related to cost of vaccination

Absenteeism or reduced productivity as a result of post-vaccination morbidity

LEADING THE WAY IN VACCINE TECHNOLOGY



FLU

S2

A/Texas/36/91 - like (H_1N_1)
A/Wuhan/359/95 - like (H_3N_2)
B/Beijing/184/93 - like Strain
Strains recommended by W.H.O. and N.I.V.
Reg. No.: 29/30.1/0509

S2

Havrix™ 1440

Hepatitis A vaccine

Reg. No.: 29/30.1/0310

S2

Engerix-B

Recombinant DNA Hepatitis B vaccine

Reg. No.: PAEDIATRIC: W/30.1/35
ADULT: U/30.1/186

SB *SmithKline Beecham*
Pharmaceuticals (Pty) Ltd

96/12/84

4. Sensitivity analysis for 50% effect of influenza on absenteeism

Cost of winter absenteeism	= R5 578 545
Medical costs	= R2 331 618
Total winter related costs	= R7 910 163
Cost of vaccinating workforce	= R1 164 000
Costs saved by 100% vaccination	= R3 401 370
	(43% of R7 910 163)

Therefore benefit-cost of influenza vaccination for 50% effectiveness would be = **2.9:1**

5. Sensitivity analysis for 20% effect of influenza on absenteeism

Cost of winter absenteeism	= R2 231 418
Medical costs	= R2 331 618
Total winter-related cost	= R4 563 036
Costs of vaccinating workforce	= R1 164 000
Costs saved by 100% vaccination	= R1 962 105
	(43% of R4 563 036)

Therefore benefit-cost of influenza vaccination for 20% effectiveness would be = **1.7:1**

B. Healthcare Cost Study (medical aid study)

1. Consultations 1995

- Total consultations for influenza as a specified diagnosis + 25 per-cent of other influenza-related diagnosis
  = 5.151 million
  Note: This figure would include consultations by general practitioners for both medical aid and private patients.
- Cost of consultations
  Medical Aid Tariff 1995 = R44.40
- Assumption
  30 per cent of this population would contract influenza-related illness.[6] This would mean 2 475 million individuals (30% of 8 250 million patients served by 7 704 general practitioners).
- Average number of consultations per symptomatic individual
  5 151 consultations per 2 475 individuals means 2.08 consultations per individual
  Thus - Average cost at medical aid rates per symptomatic individual
  2.08 x R44.40 = R92.35

2. Pharmaceutical Costs 1995

- The rand diagnosis value at manufacturers sales level for influenza and influenza-related diseases in 1995 was R122.73 million
- Cost to patient is increased by a factor of 1.8, this includes an approximate increase of 17.5% from wholesaler to retail pharmacist together with an approximate increase of 50% from retail pharmacy to the public.
  R122.73 million x 1.8 = R220 914 million
  Thus - Average cost per prescription
  R220 914 million for 2 475 individuals
  = R89.26

3. Total Cost per Individual

Consultation R92.35 + prescription R89.26
= R181.26

4. Medical Aid Costs

- In 1995 6.5 million individuals had access to medical aid
- Therefore medical aid influenza-related disease population = 1.95 million (30% of 6.5 million)
- Total medical aid costs
  R181.26 x 1.95 million = R354 139 500

5. Influenza Vaccine Costs in 1995

- Vaccine costs per dose = R15
- Theoretically if all patients with access to medical aid were immunised:
- Vaccine cost R15 x 6.5 million
  = R96 500 000
  50% consultation fee 22.20 x 6.5 million
  = R144 300 000
- Total Vaccine Cost = R240 800 000
  Assumption
  A 50% consultation fee is assumed taking into account:
  i) More than one person may be immunised at a consultation
  ii) Doctor's nurse may give vaccination
  iii) 50% consultation fees are often charged when only an injection is administered to patient
  iv) Mass or group immunisation may take place.

6. Benefit : Cost Ratio (BCR)

Assuming 100% vaccine efficacy

$$BCR = \frac{R354\ 139\ 500}{240\ 800\ 000} = 1.5:1$$

7. Sensitivity Analysis

90% vaccine efficacy = 1.35:1
80% vaccine efficacy = 1.2:1
70% vaccine efficacy = 1.05:1

8. Cost Saving to medical aid industry

assuming 80% vaccine efficacy
= R53 139 500

Discussion

A case control study conducted among 50 000 elderly subjects in Minnesota, USA has shown that direct savings per year averaged $117 per person vaccinated with cumulative savings of nearly $5 million.[5] This study also showed that influenza vaccination was also associated with a reduction in the rate of hospitalisation for pneumonia and influenza by 48 to 57 per cent and for all acute and chronic respiratory conditions by 27 to 39 per cent. Vaccination was also associated with a 37 per cent reduction in the rate of hospitalisation for congestive heart failure. Another remarkable finding in this study was that influenza vaccination was associated with a reduction in mortality from all causes during the three influenza seasons studied. The prime focus of this study was on the direct (medical) cost-savings rather than indirect (loss of productivity) costs. The population or medical aid arm of the present study focuses on the direct costs related to influenza and influenza-related disease in South Africa. It provides an overall economic picture or macro-analysis of the impact of influenza and as such is subject to a number of flaws and constraints.

These are:

i) The sensitivity of influenza as a clinical diagnosis both in determination of the general practitioner consultation costs or in the determination of the pharmaceutical costs.

ii) No allowances have been made for non-prescription items or "over the counter" drugs thus underestimating pharmaceutical costs.

iii) The calculations have been based on medical aid tariff rates and no allowance has been made for private tariffs. For this reason the economic costs may be underestimated.

iv) The determination of the BCR is based on a 100% influenza coverage. Quite clearly this would never be the case, in reality far fewer vaccinations would be administered.

v) The BCR is based on pharmaceutical and consultation cost generated by general practitioner visits. No hospitalisation costs or costs for specialised services (radiology, laboratory tests, specialised care) have been included. The medical costs in this study therefore may also be considerably underestimated.

Despite these reservations, the study provides an attempt at estimating the economic burden of influenza and hopefully will provide an impetus to implement future cohort studies which will evaluate the economic benefits more accurately. Accurate economic data are important when formulating policy particularly with regard to reimbursement policies. Initiatives to increase the uptake of vaccine among the elderly (>65 years of age) and in the classical risk groups is endorsed by a number of health authorities in South Africa including the Department of Health. Reimbursement for vaccination has been shown to be one of the most important factors in increasing the uptake of vaccine. In Canada, for example, 90 per cent of all doses of vaccine sold are purchased by provincial authorities and distributed free to practising physicians who are, in turn, reimbursed for the costs of administration of the vaccine. In the USA, in view of the compelling economic advantages, reimbursement for influenza vaccine was authorised by Medicare in 1993.[7]

Influenza causes considerable economic losses due to absenteeism and consequent loss of productivity.[2] In a study by Nichol *et al*[6] on the effectiveness of vaccination against influenza in healthy, working adults, vaccination was associated with, not only a reduction in days of work lost because of upper respiratory illness by 43 per cent, but also with a reduction in absenteeism due to illness by 36 per cent.

Similar results were also shown in a study conducted in a service company in the United Kingdom.[8] This study was designed as a retrospective cohort study and showed that influenza-related illness in the vaccinated cohort was halved. These findings are significant because the indirect costs of influenza are considerably greater than the direct costs by as much as four times.[9] In the present study analysis of the Eskom data show that if direct costs alone are considered, the benefit:cost ratio (BCR) is 1.6:1 (assuming a vaccine efficacy of 80 per cent - calculations not shown). This ratio rises to 5:1 when the indirect costs are added. The proportions of indirect costs compared to direct costs (3.1:1) is similar to other studies.[9]

The rate of vaccine distribution in South Africa is estimated to be 12.5 per 1000 population. This is low when compared to 170 per 1000 in Spain and approximately 145 per 1000 in the USA and Canada, countries which have reimbursement policies for vaccination. By comparison, it is interesting to note that countries that do not have reimbursement policies have low distribution figures - examples are Austria (20 per 1000) and New Zealand (45 per 1000).[10]

It is clear from these analyses that more widespread influenza vaccination is likely to be an extremely cost-beneficial option. It is recommended that increased efforts be made to increase vaccine uptake among the elderly and the high risk groups and to facilitate this process efforts must be made to persuade policy makers to make influenza vaccine more accessible by instituting reimbursement policies. Furthermore, there is sufficient evidence to suggest that providing free influenza vaccination to young healthy workers would seem to be indicated on economic grounds.

Acknowledgements

The authors would like to acknowledge the help of Ms Cindy McAdam of Decision Services International for making medical and pharmaceutical data available and Dr Charles Roos of Eskom for the provision of the data in his organisation. Thanks go to Ms June Perks for the typing of the manuscript.

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Influenza vaccine and its relationship to absenteeism in the workplace

Dee Boorman

Introduction

Influenza virus related illness is a significant cause of morbidity during the winter months. Successful influenza vaccination is available each year for the predominant serotypes of the virus. It is estimated that protection rates from the vaccine are in the order of 60-80%. Due to repeated need for vaccination with antigenic drift in virus serotypes, and the resultant cost to the community, various agencies have suggested targeted immunisation of high risk populations, including the elderly, those with chronic disease and populations living in close proximity to each other. One of the latter groups is people working in large industries. In addition to being at risk, employees who contract influenza are obviously a major financial burden to both industry and the community. For this reason many large corporations have chosen to routinely vaccinate their employees in late summer and autumn against the prevailing strain of influenza. The cost of routine vaccination in this way is borne by the industry concerned, but little evidence exists of the cost effectiveness of this form of industrial health policy. Consequently this study was undertaken to document whether a reduction in winter related absenteeism does in fact occur, following the introduction of influenza vaccination to staff members.

Patients and methods

The present study was undertaken in a large manufacturing industry of approximately 700 employees, over 2 years (1994-1995). The employees were studied retrospectively according to whether or not they received influenza vaccination each year. One hundred and five employees received vaccination during April of each year. Ninety non-vaccinated employees were randomly identified from the payroll of the company during the corresponding period. The total number of days of sickness absenteeism were recorded for both these groups. Sickness absenteeism between 1 June and 30 September was considered to be potentially due to influenza and each certificate from doctor was considered compatible with influenza if it reported "Flu", URTI or Sinusitis. The results for 1994 and 1995 were pooled to increase the sample and obviously some people fell into both years.

Results

Of the 105 employees who received influenza vaccination, 107 cumulative days of sickness absenteeism (Flu, URTI, Sinusitis) were recorded between 1 June and 30 September for 1994 and 1995. Of the 90 employees in the control group, 205 days of cumulative days of sickness absenteeism were recorded. In the vaccinated group each employee had 1.02 days of sick leave for the combined study period of 8 months compared to 2.28 days for the control group. The non-vaccinated group were more than twice as likely to be off work for illness comparable to influenza, compared with employees who received vaccination.

Discussion

In South Africa there is a great need for primary health care in industry. A large burden of primary health care is borne by employers, who provide both preventative and curative care to employees in order to minimise financial loss to both the corporate world and the community. For many years some industries have provided influenza vaccination to employees in an attempt to fulfil these ideals, but of course no evidence of its benefit exists. This study would suggest that routine vaccination against influenza minimises absenteeism during the winter period.

Dee Boorman,
Director of Occuhealth, Occupational Health and Safety Consultants, Gauteng

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The limitations of this study are recognised, but with the large sample size and use of inclusive surrogate markers, (URTI, Sinusitis) in both groups it is felt that the trend would be unlikely due to other causes. In addition, no other health intervention changed during this period and both groups were offered identical on-site occupational health care. The vaccination programme was standardised and administered by a single nursing sister, with specific requirements for storage and administration being met. It would be interesting to reconfirm this evidence in a similar setting in another industry.

The results of this study are both important to the medical profession, in indentifying successful sites for disease intervention and to employers who need to be reassured of the cost effectiveness of their health programmes. Many of the services provided in industry will need to be critically evaluated in these changing times. This study would support the role for pre-winter influenza immunisation.

WHO/South Africa technical cooperation programme 1996 - 2003 Occupational Health and Safety

(with particular emphasis on workers' health)

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Ethel Ntombizodwa Mokoena

Ethel has been employed as the Occupational Health Nurse at Maksal Tubes in Springs, a copper tube manufacturer, for the last 19 years. She also manages the canteen and has a strong interest in the welfare aspects of the employees.

Ethel was born in the Eastern Cape and received her school education in East London. She completed her nursing training at Baragwanath Hospital and then her Midwifery at Frere Hospital, East London. She then worked in Natal at Greytown Hospital, King Edward and Clairwood hospitals. After she married, she moved to Pretoria on transfer to HF Verwoerd Hospital but could not take up the post because of language difficulties.

She then left hospital practice and started her first job in the community at Atteridgeville Clinic. It was here that she realised if she was to service her community properly, she needed Community Health and Psychiatric Nursing which she duly completed. She then thought her community health knowledge was complete until she got a post in Industry in 1977. While working in this new environment, she discovered that she needed a great deal of information about the job she was doing. She contacted other nurses in her area and with Heather Watridge they started meeting on a regular basis with other Sisters at their factories to network and exchange ideas and problems. This led to Ethel enrolling for a course in Occupational Health at the NCOH under Professor Webster in Johannesburg, after which she felt she had a far better insight into occupational health.

After reading some overseas occupational health journals, she felt she wanted to learn more about occupational health and how it was performed overseas. She therefore applied for and was awarded a scholarship through the British Consulate-general's office to do a course on Occupational Health Practice at Suffolk College in Ipswich for nine months. She did her practicals at Ford Motors, Bengers Paints and Chloride Batteries in South London. She thoroughly enjoyed this and feels it has been of great benefit to her knowledge of occupational health.

She has been a member of the Southern Transvaal group of SASOHN since its inception and has found this forum which meets regularly to be very informative. She was involved in the formation of the East Rand Group of Black Nurses which was started to accommodate the Enrolled Nurses and Nursing Assistants who could not join SASOHN as they were not registered nurses. She represented this group on the National body until it was disbanded in 1996 and the professional nurses were affiliated to the Gauteng group of SASOHN.

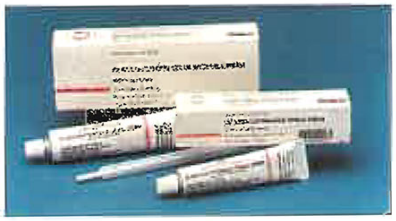
When she joined Industry, it was the time South Africa was beginning to feel the presence of Unions, and the black nurse was expected to join workers when they went on strike. As a result, the East Rand Group of nurses asked to talk to NACTU when their shop stewards were holding their graduation at the end of their training so that they could be informed about the role of the Occupational Health Nurse. The two groups discussed each other's role and this proved to be very informative to both parties and helped take the pressure off the black occupational health nurse during a strike.

When not doing her nursing duties, Ethel is a community worker and has visited Israel and Zimbabwe to learn and empower herself on community and leadership issues. She has been chairlady of both SANTA and SANCA in KwaThema and currently is the representative for SANTA on the National Executive of SASOHN. Occupational health nursing has exposed her to all the problems that are encountered by the migrant worker in the hostels and in the communities where they live.

She has had the privilege of teaching many nurses that are doing courses in Occupational Health and Community Health at Universities, Technikons and Nursing Colleges and she feels that there is a great contribution the Occupational Health Nurse can make to these institutions, as it seems that the lecturers who are running these courses have very little information about what Occupational Health Nursing is all about. Her wish is that SASOHN should put together a national curriculum that will be used by all these institutions.

The Occupational Health Nurses have proved beyond doubt that they are not just nurses, but practitioners in their own right.

Adco-Clotrimazole launched by Adco Generics



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Further information from Koos McLachlan at Adcock Ingram, tel: (011) 470-7000

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Further information from Maggie Smock at Regent Medical SA, tel: (011) 314-3102

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The 3M Soft Cloth Adhesive Wound Dressing incorporates a non-adhesive, absorbent pad into traditional Medipore hypoallergenic surgical tape. The result is a gentle, conformable, absorbent dressing that is porous and breathable, with a wide range of applications.

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Both new 3M "Island" dressing products make ideal post-surgical dressings by protecting closed, clean surgical wounds and donor sites. Other applications include lacerations, abrasions and burns, as well as small incisions and excisions - especially in difficult to dress areas. Use them on superficial and partial thickness wounds as well as light-to-moderate draining wounds for excellent results. The 3M Soft Cloth Wound Dressing may be applied as a device dressing, while both products are suitable for use as catheter covers.

For further information contact:- Melanie Burman, 3M Health Care, Tel: (011) 922-2008

Dräger opens branch in Eastern Cape

Dräger South Africa (Pty) Ltd, one of South Africa's leading suppliers of industrial safety equipment, is pleased to announce the opening of its branch in the Eastern Cape. "The new branch underlines the company's continuing expansion and development, and was an essential step forward for Dräger to continue to efficiently service its ever expanding national customer base" says Dräger's National Sales Manager, Mr Rob Brown.

With its country head office in Johannesburg, Dräger's new branch, situated in Port Elizabeth, is manned by two additions to the Dräger team, Shaun Beukes (Area Manager) and Carla Nelson (Sales Consultant).

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