

Occupational **HEALTH**

SOUTHERN AFRICA

*Official Journal of the SA Society of Occupational Health Nurses (SASOHN)
and the SA Society of Occupational Medicine (SASOM)*

In this issue:

Primary care in rural industrial clinics
The Mondi Forests experience

The Health Systems Trust (HST)

A South African biological monitoring report
Part I: Organic chemical exposures

The value of holistic disability intervention

The DOTS programme for tuberculosis -
what's new?

Vol 3 No 5 Sept/Oct 1997

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Who Cares?



Caring includes “being concerned, anxious, liking or watching over”, and other similar descriptive norms, all of which identify that commitment remains paramount.

This may well be transposed to our own training in Occupational Health and, in the African context, an ongoing recognition of Primary Health Care as an integral function of our discipline.

The workplace traditionally remains a source of Primary Health Care, on which well-entrenched perceptions by workers are founded. That is until recently, when things have suddenly gone wrong. The realities of the modern world are pressurising industry to look carefully at costs and to remain competitive, with production in line with economic viability. Strangely enough, this is in itself nothing new. It is simply redefining the concept of health care from inside to outside the system, with workers responsible for their own care and supported by various medical aid systems, which are currently struggling to survive both costs and relevance. The era of supporting health facilities in-house is past and developed countries are now bypassing costs found to be prohibitive in terms of production, and relying heavily on promotive (healthy) lifestyles and other incentive measures.

So who does care? Or does WHO care? If we take an objective look at the World Health Organisation, the values and solid structural systems, guidelines, parameters and processes are based on huge databases of statistical analysis, epidemiological and sound debate from many countries. However, standards and expectations by Occupational Health criteria may well have to think of shifting the paradigm and assist the developing economies as well. The question of how this is going to be achieved remains, as do the challenging scenarios when we look to industry to feed the economies of the world!

The second point is who should maintain responsibility for the viability and the standards of the health care industry in its “macro” model or should we look toward the line manager, the responsible person, the head of department, the local structure, the supervisor or even the one man show to refine the system to suit the needs of the economic realities?

Fox takes this point to the rural setting and outlines the difficulties on a practical basis, and by implication spells out the frustrations with various players, including the State Health Departments. This is to some extent supported by Hawkes with the Health Systems Trust, an NGO with good intentions and world-class values.

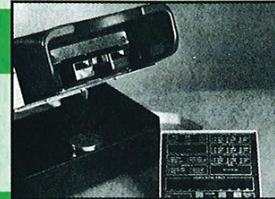
How then can this be implemented, given that minimum standard of health and safety are now well scribed into the statutes, and the effects of legal monitoring are beginning to be strongly supported by environmental pressure groups as well? And does this also impact on Primary Health? People themselves are beginning to care and this in itself becomes important even if industry cannot find the wherewithal to maintain the ever-increasing costs of healthy communities, but at least at work this could happen?

Chris van Selm
Editor

Your Specialist Agents

FOR THE FOLLOWING

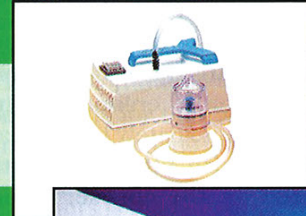
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WHO/SA Technical Cooperation programme: Occupational Health

Certificate in Industrial Ergonomics Course: University of Pretoria

With sponsorship and support from the WHO/SA Technical Cooperation Programme: Occupational Health, a one year part-time Certificate Course in Industrial Ergonomics was successfully launched at the University of Pretoria in July 1997.

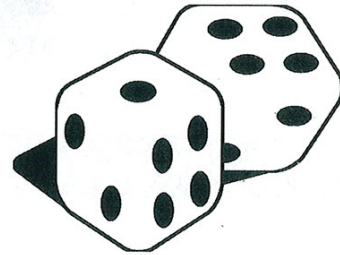
This first tertiary course specialising in Ergonomics focuses on the application of ergonomics in industry. It immediately had appeal to industry with fifteen students registered on the course, three travelling from as far afield as East London. It also has somewhat of an international flavour with one student from Botswana.

The course mentor is Prof Jan van Tonder and the course is presented under the auspices of the Department of Human Resources Management.

Enquiries can be made to Prof van Tonder at (012) 348-3699.

SKC Ltd Contribute to WHO/SA Programme

SKC Ltd are the first company to donate equipment to the WHO/SA Technical Cooperation Programme: Occupational Health. They have kindly supplied via their local agent, FHG Services, two personal air sampling pump kits as a contribution to help develop occupational hygiene in South Africa. Mr. Henk Gräbe, FHG Services, and Dr. David Stanton, NCOH, presented the kits to the Cape Technikon and the Peninsula Technikon on the 11th August 1997. Further kits will be supplied by SKC Ltd in future



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A SASOM training programme in collaboration with the Compensation Commissioner



Members of the SASOM National Executive celebrating the acceptance of their proposal to the Compensation Commissioner. Back row left to right: Dehlia Müller, Terry Geddes, Chris Snyman, Daan Kocks, Marianne Felix. Front row left to right: Charles Roos, Murray Coombs, Mary Ross

Funding from the Compensation Commissioner for a programme of dedicated training of doctors on all aspects relating to accident and occupational disease reporting, and compensation, has been approved.

The aim of the project is to train doctors, predominantly in general practice, in the correct procedures required in reporting accidents and occupational diseases to the Compensation Commissioner (CC), utilising the expertise of SASOM, the infrastructure of the Medical Association of Southern Africa (MASA) and the documentation of the Office of the CC.

Medical costs incurred under Compensation for Occupational Injuries and Diseases Act (COID Act) have escalated alarmingly over the last few years and 50% of the total assessment is now needed for medical costs.

The new COID Act regulations concerning the notification of occupational diseases would appear to be inadequately understood by the medical profession in general - certainly as regards procedures.

Implementation

It is intended that there will be close co-operation with MASA, to which most doctors belong. As MASA has extensive infrastructure and branches spread widely throughout the country, they will be in a position to notify the respective branches, set up workshops and assist in general administration and printing. They will be able to absorb some of the costs as the training will be a service to their members in terms of improving their efficiency, speeding up procedures ensuring correct and therefore more prompt payment of fees.

SASOM, through its National Office in Centurion, will organise suitable trainers from its members and will also out-source when necessary, e.g. from local university departments. It will manage the entire project, will develop key parameters with the CC that can be measured in order to assess subsequent improvement in participating doctors and will develop and maintain data bases of doctors trained in each geographical area.

Doctors who have completed the training will receive certification and gain points counting towards CME (continuing medical education) which is an increasingly important part of medical audit. It is anticipated that some charge can be made for the individual training and certification order to keep costs down.

In time it could be realistic for the CC to insist on such certification for medical work done under the COID Act.

An urgent call for trainers is made - please contact Mrs D Müller at our National Office, tel (012) 664-1460

Miningtek, the CSIR's Division of Mining Technology, currently has the following vacancy in their Environmental Safety and Health Programme:

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Dr Ron McCaig visits SA

During August and September a senior occupational health physician with the HSE in Britain, visited this country. Dr Ron McCaig received the prestigious UK Society of Occupational Medicine's Golden Jubilee Travelling Fellowship, awarded to celebrate the 60 year anniversary of their Society. Dr McCaig has had an interest in occupational health in developing countries for some years and has used the Fellowship to visit southern Africa.

During a week in Johannesburg he spent two days at the NCOH and gave open lectures on the integrated approach of the HSE, and also at the Medical School on new initiatives on occupational health in the UK. Both lectures were stimulating and gave rise



Dr Ron McCaig

to a good deal of thought in terms of SA's progression to a fully integrated system.

A week in Cape Town, spent largely with the two occupational health academic units there, preceded the PACOH '97 Congress in Durban. The trip concluded with a brief visit to Botswana and the Epidemiology Congress in Harare.

Primary Health Care on factory floor at risk in new health bill

Occupational Health Nurses in South Africa are concerned that the proposed new health bill does not make provision for primary health care services at on-site factory clinics.

This will mean that clinic services to more than 8 million industrial workers will stop, and employees will have to visit either State Clinics at great loss of worker productivity and sick leave benefits or go to private practitioners.

"Existing occupational clinics are an important resource already provided by the private sector and should be used as optimally as possible," said Penny Mead, President of the South African Society of Occupational Health Nurses. "The trained Occupational Health Nurse knows that when an employee is ill, he/she is at great risk of work-site injury. By caring for the worker's overall health, we are able to reduce occupational injury and consequent long term disability expense to the State or Medical Aid," she pointed out.

The Occupational Health Nurses recently presented their concerns to the Parliamentary Standing Committee. In their presentation, the nurses asked for a phasing-in period where clinics can continue their primary health care function, until nurse-level prescribing of medicine has been finalised. "We support the Department of Health's initiatives to enable nurses to take responsibility at a primary health care level for diagnosing and dispensing - obviously determined by accredited training. We are keen to ensure that the occupational health nurse is included in the enabling legislation and are currently busy with an improved competency upgrading programme," she concluded.

For further information on the Occupational Health Nurses Society and its CME programmes, call Penny Mead on: (011) 239-3743 or fax (011) 239-3702.

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(1b) Where to go for help?
(1c) Have I got TB?
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(2b) You must finish your treatment.
(2c) When can I stop my treatment.
(3a) What is HIV/AIDS?
(3b) AIDS and your immune system
(3c) There is no cure for HIV/AIDS.
(4a) The signs of HIV/AIDS.
(4b) Who can get HIV/AIDS?
(4c) Where does HIV live?
(5a) You can get HIV through sex
(5b) HIV and blood
(5c) How do babies get HIV?
(6a) STD's and HIV/AIDS.
(6b) How you can not get HIV/AIDS.
(6c) Safe sex and safer sex.
(7a) Caring for someone with AIDS.
(7b) Why is AIDS spreading so fast?
(7c) The HIV/AIDS test.
(8a) What are STD's?
(8b) What happens at the Clinic?
(8c) Finish your whole treatment.
(9a) Have I got a STD?
(9b) The silent STD: Syphilis.
(9c) What if Syphilis is untreated?
(10a) Use a condom for safer sex.
(10b) How to use a condom.
(10c) Use a condom only once!



This programme has been evaluated by all relevant bodies and approved by the Department of National Health, Ms Q Abdool Karim — Director HIV/AIDS and STD Programme and the Common Wealth Secretariat, Dr H M Bichan — Medical Advisor, Health Department

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Primary care in rural industrial clinics

The Mondi Forests experience

FH Fox

Abstract

The question of clinic permits and the need for primary care in industrial clinics is presently under discussion in the Department of Health and the inability to start any new clinics under the present system is causing some difficulty in industry. There is a need in the rural setting of forestry and agriculture for a primary care service which is often not available from the State. Large agricultural concerns are already providing primary care to employees and their dependants through industrial clinics whose primary aim should be to provide occupational health care. The experience of running a grassroots primary care service from an industrial clinic in a rural setting is set out along with the details of costs and effects on referral patterns.

Introduction

Health for all by the year 2000 is the target that has been set by the United Nations and how we are to achieve this in South Africa is as yet unclear. The industrial clinic is usually set up to provide a primary care service at the work site in order to reduce lost time through absenteeism for minor ailments, to provide treatment for injuries on duty and to provide occupational health services as required under the Occupational Health and Safety Act. In ideal first world conditions the industrial clinic liaises with the employee's GP and does not undertake the medical management of the employee. In developing countries it is impossible to separate primary care from occupational health and the industrial clinic is often the most convenient and sometimes only contact that the employee has with a medical service provider. Government clinics are overcrowded, understaffed, under funded and often inconveniently located; nowhere is

this more apparent than in the rural areas. Here the industrial clinic may provide treatment and referral services for the employee and his dependants and is ideally situated for providing preventive measures such as health education, family planning and immunisation. The WHO aims and objectives for occupational health programs listed below contain an element of primary care and there is no reason these principles cannot be applied to the care of the community at large.

- To identify and bring under control at the workplace all chemical, physical, mechanical, biological and psychological agents that are suspected of being hazardous.
- To ensure that the physical and mental demands imposed on people at work by their respective jobs are, as far as possible, properly matched with their individual anatomical, physiological and psychological capabilities, needs and limitations.
- To provide effective measures to protect those who are especially vulnerable to adverse working conditions and to raise their level of resistance.
- To discover and improve work situations that may contribute to ill-health in order to ensure that the burden of general illness in different occupational groups is not increased over the community level.
- To educate management and workers to fulfil their responsibilities relevant to health protection and promotion.
- To carry out in-plant health programs which will assist public health authorities to raise the level of community health.

Forestry, by its nature, covers large areas of land which leads to isolation of the people who work and live in or around the plantation. This results in small groups of people (10 - 100 families) living in company owned villages or on land which has been serviced and provided by the company for

Dr FH Fox
Senior Medical
Officer,
Mondi Forests &
Mondi Timber

Occupational Health SA
1997; Vol 3, No 5: 8 - 12

the purpose. These communities are often off the main routes and are difficult for the State services to reach. They are also sufficiently far from the main towns to make access to health care difficult. This is often made worse by mountainous terrain, non-existent public transport and poor roads.

The draft National Health Plan promotes the model of doctor based primary care and there has been comment that companies should put all employees on a medical aid scheme, but is this appropriate? Traditional

medical aid schemes are expensive and while the contributions are calculated relative to the earnings of the employee the actual cost to the employee (who often has a large family) is unacceptably high. Furthermore, in the rural areas the services (such as hospital care) are simply not available. Being on a medical aid scheme may mean having to make cash payments up front while waiting for refunds from the scheme or travelling long distances to see specialists in private hospitals and unless the

company provides transport these services may be inaccessible. There is also a need for a certain amount of literacy in understanding how medical aid schemes work. In one rural setting relatively literate people who were on a company medical aid scheme had difficulty using the scheme because the local doctors insisted on cash and the employees simply did not claim against the scheme. They either did not know how to claim or threw away the receipts thus making claiming difficult. All this combines to deprive these rural communities of basic health care.

The Mondi Forest clinic

What follows is a description of a service which attempts to address some of these problems in a cost-effective manner. This system is not unique to Mondi and is being implemented by another large forestry company in a similar fashion.

Mondi Forests in the Sabie-Graskop area employs approximately 700 people who qualify for State health care by way of their earnings and who are not covered by medical aid. These people live in 10 company villages of about 100-200 people within a 50 km radius of Sabie (see map in Figure 1).

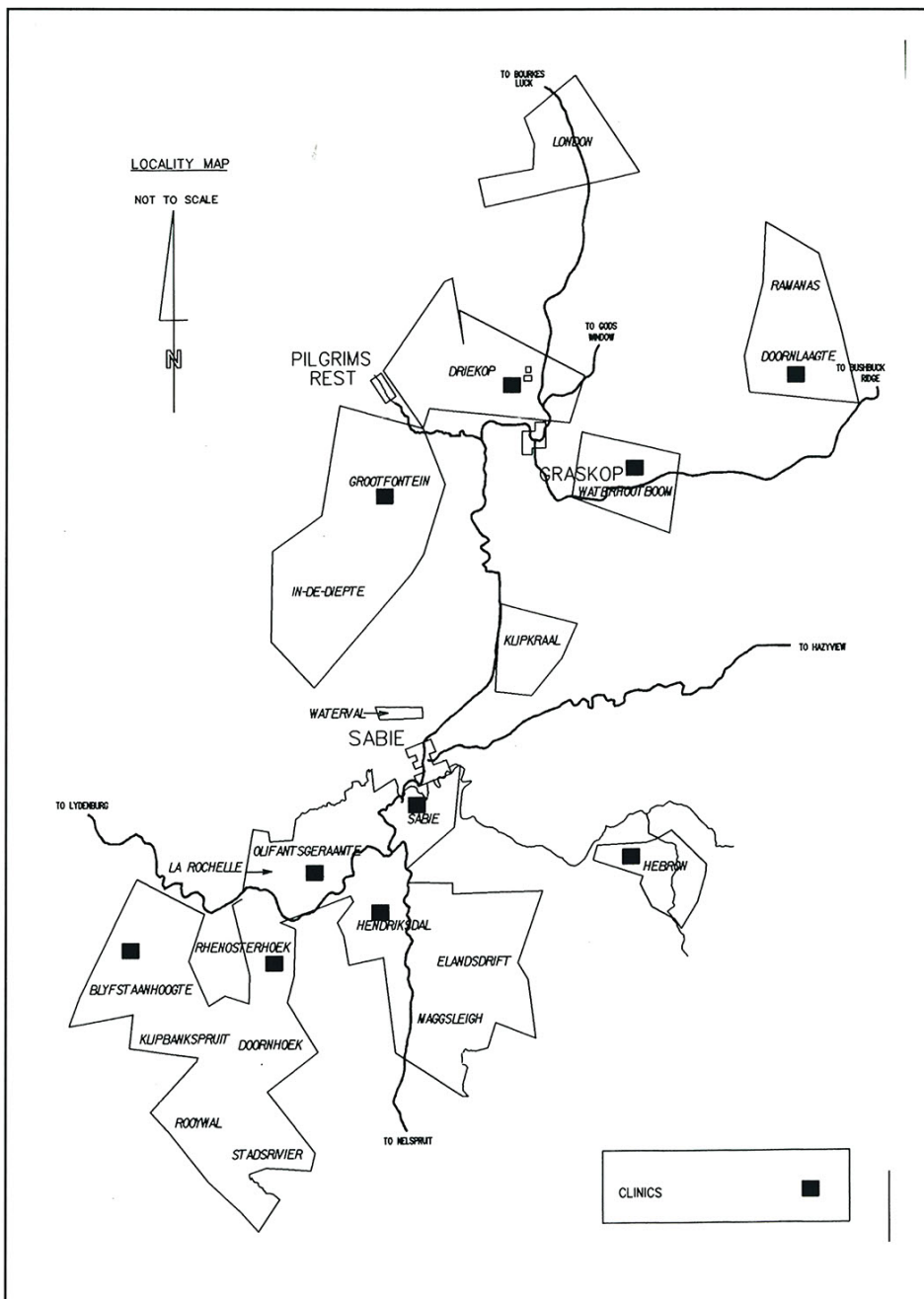


Figure 1: The clinics and company villages in a 50 km radius of Sabie

Initially, the employees and their families had to rely on the State run mobile clinics, intermittent clinics run by company clinic sisters and company transport to Sabie to visit the local general practitioners or government hospital and clinics. The company paid the full cost of a GP visit for the employee and his registered dependants. In 1994 this system was recognised as being expensive in lost time, transport costs and in payments to doctors. It was also seen to be inefficient as it was providing only primary care and was not addressing the preventive side of health care. A decision was made to implement a program in which the community health worker (Nompilo) would be the first point of contact with referral into a clinic staffed by a sister and then onto the doctor if necessary. The approach taken was that this would be an RDP project aimed at community upliftment and each Nompilo would be chosen by the community in which she/he would work. The training course selected was the course run by the Getahead Foundation with some adaptations made to the course to suit the industrial environment. These changes included a first aid course and a module on occupational health. The standard of education required from the applicants was matric; this is higher than that usually associated with this type of training but it was felt that it would improve the chances of success and the level of training could be made more advanced. There is insufficient space in this article to fully describe the training course but full details of the training program can be obtained from the Getahead Foundation.

Each Nompilo works from the village in which he/she lives and has a basic clinic which is equipped with first aid equipment, a diagnostic set, a sphygmomanometer and stethoscope and an examination couch. All clinics can communicate with the sister in the central clinic in Sabie by telephone or radio.

The primary function of the Nompilo is health education but all have access to schedule 1 medicines for the symptomatic treatment of headaches, diarrhoea, coughs and colds and the treatment of minor cuts and abrasions. These conditions are most commonly treated with self-medication by the town dweller and are easily and safely managed by the Nompilo using simple protocols. The Nompilo also has the

opportunity to follow up each case fairly closely and has additional contact with the families through health education sessions. Another area where the Nompilos have proved invaluable is in the follow up of patients on chronic medication as they are able to take blood pressures, test urine for glucose and supervise TB patients on direct observed therapy. All this takes place within a few hundred metres of the patient's home and thus makes interventions much more effective. Any patients whose observations fall outside of set limits are referred to the sister at the central clinic as is any patient that the Nompilo cannot manage within the protocols.

Health education forms a major part of the Nompilo's work load and some of the topics covered include: basic hygiene, basic nutrition, family planning, immunisation, AIDS, alcohol and drug abuse, tuberculosis and the management of diarrhoea in children. These topics may be delivered to groups of people or on a one-to-one basis when a family is visited.

The second part of the chain of care is the central clinic which is run by an occupational health nurse. Here referred patients are seen and preplacement and medical examinations are performed. The clinic also acts as the first point of contact for patients living in the vicinity. Once again patients are managed according to a set of standing orders or protocols and any patient who cannot be dealt with by the sister is referred to the local general practitioner or the local hospital if necessary. The service provided by the clinic includes family planning and immunisations and the treatment of STDs according to the syndromic approach protocols. A weekly training session is also held for all Nompilos who are transported in to the clinic for this. The central clinic also provides a venue for SANCA to conduct follow up counselling sessions for patients in the area. This reduces congestion and the work at local government clinics and brings the clinic staff closer to employees who are under treatment by SANCA.

As an experiment in cooperation with the private sector, the Mpumalanga Department of Health is supplying the medication for management of STDs. The clinic is seen as an extension of the government service in the management of diseases of public concern. Similarly, the

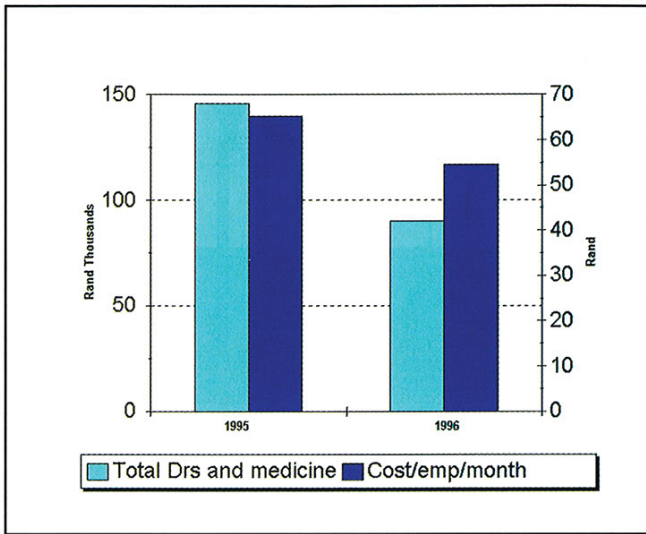


Figure 2: Total cost of doctors and medicines relative to cost per employee per month

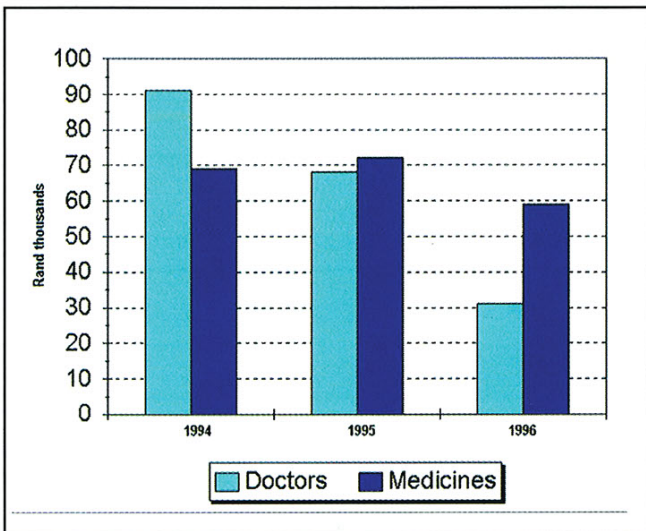


Figure 3: Costs of doctor consultations and medicines

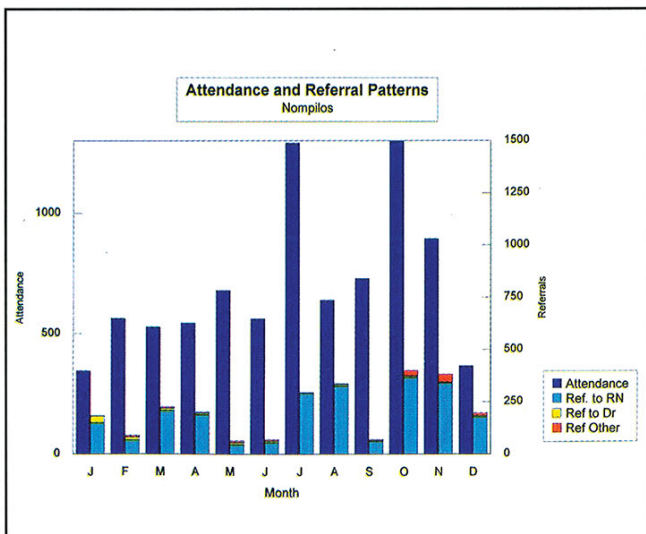


Figure 4: Attendance and referral patterns (Nompilos)

provision of family planning and immunisation services helps reduce the queues at the government clinic and provides a more convenient service for the employee and his/her dependants. The statistics on provision of these services are returned to the Department of Health.

Results

The major impact of this clinic system has been a large reduction in the number of patients referred to the local general practitioners and the outpatient department of the hospital. There has also been a considerable saving in transport costs and in lost time due to clinic visits. Figures 2 and 3 show the effect on costs. The overall cost of doctor consultations and medicines (including those purchased by the clinic) has come down as has the total clinic cost, which is shown as a cost per employee per month. The figure of R54.00 per employee per month may seem expensive to those used to running only an industrial clinic but it must be borne in mind that this figure includes families and the company pays 100% of the doctor's account if the patient has been referred by the clinic system. This figure also includes the cost of the occupational health service. The figure is in fact less than 8% of the total wage bill and approximately 50% of the cost of a primary care plan for an employee with two dependants.

The effect on referral patterns is shown in Figures 4-6. Figure 4 shows the attendance at the peripheral clinics and the referral habits of the Nompilos over 1996. It is interesting to note the upward trend in attendance and I believe this is a function of trust in the system and accessibility. December is usually a quiet month because of the holiday period so is not representative of the year. Figure 5 shows the combined attendance and referral patterns for the entire clinic system over 1996 - note the overall referral rate is about 10% i.e. only 1 in 10 patients goes to the doctor. Figure 6 gives an overview of the referral pattern over the entire history of the project and shows the dramatic effect on use of doctor service that the primary care clinics have had. The close follow up has had a major impact on the management of chronic diseases with defaulters being traced and brought in for review. This may seem somewhat paternalistic but is having a

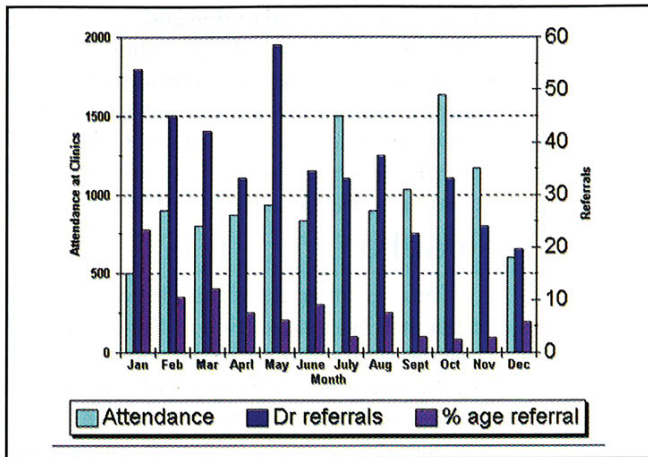


Figure 5: Attendance and referral patterns (RNs and Nompilos)

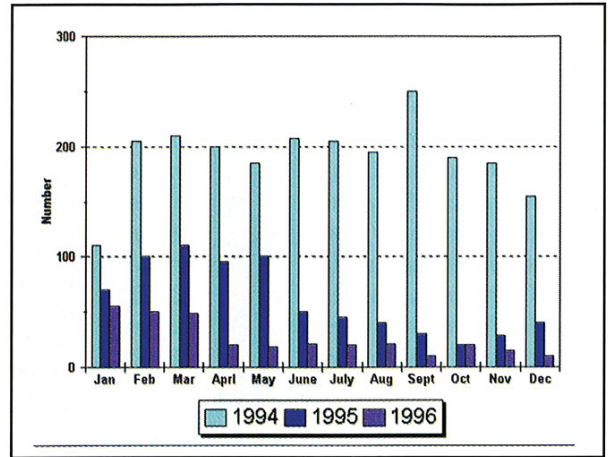


Figure 6: Referrals to doctors 1994 - 1996

positive effect on the health of the workforce, which in turn will be reflected in less lost time and improved productivity.

Conclusion

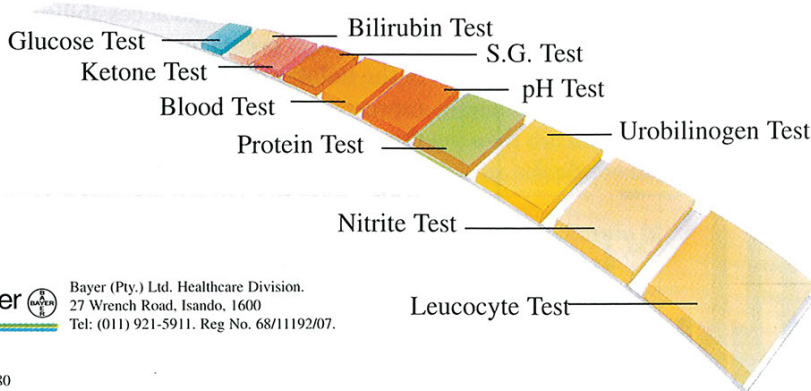
The figures show that the three tier system of primary care adopted is cost-effective, reduces the load on the referral service and enables doctors to work at an

appropriate level with patients who need to see them. To paraphrase the proponents of managed care: appropriate care is given at the right place and the right time.

Reference

1. Report of the Committee of Inquiry into a National System. 12th June 1995. Restructuring the National Health System for Universal Primary Care.

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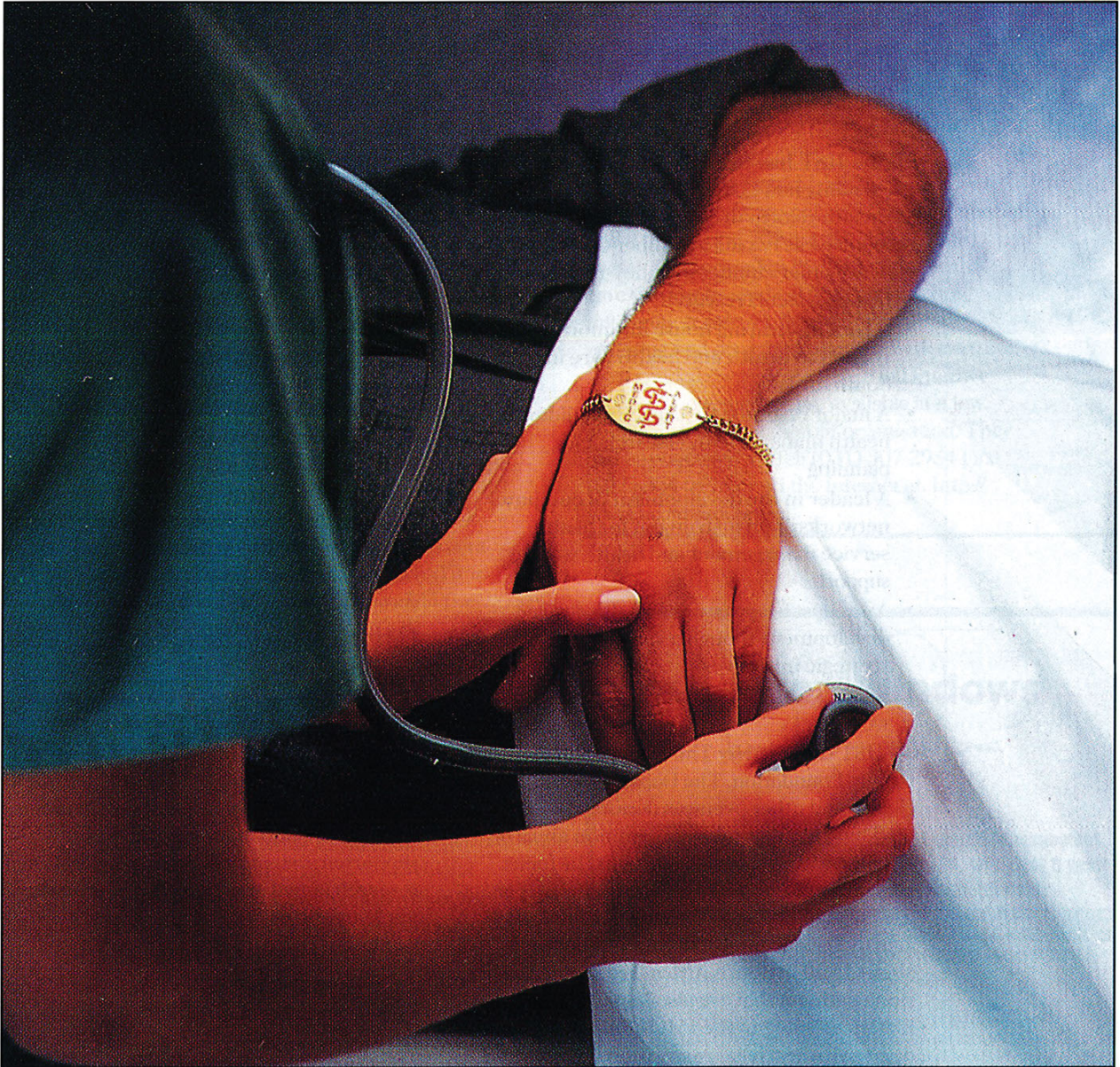


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RB Hawkes

The HST has been established as a leading non-government agency (NGO) for health reform in South Africa and is recognised as having a number of roles:

- The primary funder of policy-relevant health systems research
- A leading clearing house for information related to health and health care in South Africa
- A major resource for capacity-building in health management, research and planning
- A leader in the development of computer networks as an instrument for health service management and health worker support
- A catalyst for policy and health service development through a variety of strategic initiatives
- Meeting the information needs of health workers

HST is funded by The Henry J Kaiser Family Foundation, The Department of Health and other overseas donors.

There are a number of common areas of interest with industrial clinics as the focus on primary health care in South Africa is at the forefront of health care development. The industrial clinics, of which there are about 1500 in South Africa, are seeing the same patients that are also in many instances going to the PHC clinics, although due to site and legal restrictions are limited in most cases to seeing the workers only and not their families.

The future of health care in South Africa is at this level, and the industrial clinics have a part to play and need to be incorporated into the process.

There will certainly be scope for much interaction between HST, the South African Society of Occupational Medicine and the South African Society of Occupational Health Nurses.

HST has available a wealth of resources that the health workers in industry can draw on. There is also opportunity to contribute to what they are doing.

In their offices in Durban is a resource centre with journals and other information available to any health worker.

They have recently produced a number of Health Reports on some of the regions in the Republic as well as the thorough "South African Health Review 1996." This document is an in-depth look into the state of a number of important health issues. The main deficiency is that the Industrial Clinics have been overlooked as an important deliverer of health care to a large number of people throughout the country at a PHC level.

Other activities

Their other activities include:

Search and evaluation

A central pillar of HST is its Research Programme, which has helped to inform a national policy debate related to health expenditure and financing, but has supported systems analysis and operational research aimed at policy and programme implementation.

Information dissemination

Outputs such as *HST Update*, *Rural Health Bulletin* and *The South African Health Review* have greatly enhanced the availability of information about health and health care in South Africa. Both printed and electronic means of information dissemination have opened up new worlds to health workers who often feel isolated and unsupported.

Skills development

HST has supported skills development in the fields of health systems research, planning and management by:

- Enhancing the profile and use of the discipline of health systems research

Dr Rick Hawkes

The Tongaat-Hulett Group Ltd., KwaZulu Natal. Group Medical Consultant & Environmental Affairs Co-ordinator

Occupational Health SA 1997; Vol.3, No 5: 14 - 15

- Implementing an internship programme specifically aimed at young black South Africans
- Supporting district management training programmes which are problem-based and linked to action.

Communication and information systems development

HealthLink is an initiative aimed at promoting the use of electronic communication as an instrument of support for health workers and health service management.

Through *HealthLink*, HST has complemented the Department's efforts to create an effective information and communication system by:

- Focussing on lower end users and rural areas
- Concentrating on user support and applications development.

Provincial health departments in Northern Province, Free State, Eastern Cape, Northern Cape, North West and recently Mpumalanga have integrated *HealthLink* into their information systems to augment their own communication and extend it to rural and outlying areas which would not otherwise be reached.

Focus on improved service delivery and quality of care

The primary goal of new district management teams, as they are established, is to translate the new emphasis on primary health care into real improvements in service delivery and the quality of care. In conjunction with the national, provincial, regional and district health authorities, the HST has initiated a new programme aimed at demonstrating how tangible improvements in the quality of care can be achieved. This programme (the Initiative for Sub-District Support) is recognised as an important mechanism for effecting district systems implementation, and has the full endorsement and support of the Department of Health.

Other strategic interventions

In addition to the above systematic efforts, HST supports the Department of Health in a number of other strategic initiatives. These include:

- Support for a research unit for the National Parliamentary Portfolio

Committee on Health

- Regular media seminars aimed at promoting the substance and extent of reporting on health reform

In summary, HST sees itself as a catalyst for health reform, helping to stimulate change through:

- Action-oriented research
- Information sharing and policy critique
- Training in health systems research, planning and management
- Promotion of communication, and
- Practical support for the "nitty-gritty" of implementation.

Through the *HealthLink* they are able to make available to anyone who has a computer and a phone line, Electronic Mail (e-mail), access to information by linking the health care worker to medical libraries and drug information centres, health information updating and dissemination of newsletters etc.

If needed they can provide a full Internet service. These services are available at a low cost as they are a non-profit organisation. They can be contacted at: Tel: (031) 307-2954 Fax: (031) 304-0775 or on the Internet at: <http://www.healthlink.org.za>

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A South African biological monitoring report

Part I Organic chemical exposures

WM Coombs & AC Cantrell

Introduction

The South African Society of Occupational Medicine (SASOM) Scientific Committee for Biological Monitoring (SCBM) has endeavoured to develop the practice of biological monitoring through various initiatives. One of these is to create awareness of biological monitoring as a preventive tool in occupational health by publishing biological monitoring results.

Recent South African legislation addresses the issue of biological monitoring. Only time will tell whether these legislative requirements are sufficient to ensure prevention of exposure. Ehrlich¹ commented that: "as with any far-reaching regulation, the Hazardous Chemical Substances Regulations will be welcomed, ignored or reviled depending on the interests of the beholder... Nevertheless, the Regulations hold the promise of increasing the sophistication of management, workers, practitioners and consumers in dealing with hazardous chemical substances... and of reducing the burden of discomfort and ill health."

The publication of South African lead results by Cantrell & Landle² "Monitoring blood lead levels in South African industry in 1995" was a much needed informative project that could possibly lead to legislative changes, i.e. lowering blood lead levels for reporting, to bring South African legislative and workplace standards closer to the rest of the world.

The selection of biological monitoring action levels for occupationally exposed populations will remain an interpretative dilemma as stated in Rees *et al*³ and Biological Monitoring for Chemical Exposure by the World Health Organisation (WHO)⁴. Publication of South African specific results will, we believe, help in the interpretation of medical surveillance and biological monitoring results.

Laboratory statistics on biological monitoring of exposure to organic chemicals

Table I is a summary report on samples sent to one laboratory for the monitoring of exposure to organic chemicals for the period January to December 1996.

Recommended permissible concentrations are based on the Biological Exposure Indices (BEIs) as published in Table III of the HCS regulation⁵ and the tentative maximum permissible concentration as published in Biological Monitoring of Chemical Exposure in the Workplace⁴. BEIs are reference values intended as guidelines for the evaluation of potential health hazards in the practice of occupational hygiene. BEIs represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV-TWA (Threshold Limit Value - Time Weighted Average) in the USA or the OEL (Occupational Exposure Level) in South Africa^{5,6}. *BEIs do not indicate a sharp distinction between hazardous and non-hazardous exposures*. Due to biological variability, it is possible for an individual's monitoring results to exceed the BEI without incurring an increased health risk. If, however, monitoring results in specimens obtained from a worker on different occasions persistently exceed the BEI, or if the majority of monitoring results in specimens obtained from a group of workers at the same workplace exceed the BEI, the cause of the excessive values must be investigated and appropriate action needs to be taken to reduce the exposure. BEIs apply to eight-hour exposures, five days a week.

*WM Coombs
†AC Cantrell

*Co-chairman of the SCBM - private practice occupational and environmental health.

†Co-chairman of the SCBM, National Centre for Occupational Health (NCOH), & Department of Community Health, University of Witwatersrand

A SCBM: SASOM Project

Occupational Health SA 1997; Vol.3, No 5: 17-19

Table I: Biological monitoring for organic chemical exposure

Chemical agent	Metabolite measured	Total specimens	Number exceeding *recommended permissible concentration, refs 4 and 5
A. Nonsubstituted aromatic hydrocarbons			
Benzene	Phenol	1015	137
	tt-muconic acid	35	9
Toluene	Hippuric acid	426	31
	o-Cresol	1042	157
	Blood toluene	167	47
Ethyl benzene	Mandelic acid	58	18
Xylene	Methylhippuric acid	87	23
Styrene	Mandelic acid	122	31
	Phenyl glyoxylic acid	122	31
	Blood styrene	168	37
Polyaromatic hydrocarbons	1-hydroxypyrene	78	58
B. Nonsubstituted aliphatic hydrocarbons			
n-Hexane	2,5 hexanedione	158	31
	2-hexanol	158	15
C. Halogenated hydrocarbons			
Trichloroethylene	Trichloroacetic acid	126	11
	Total trichloro compounds	126	11
Polychlorinated biphenyl	PCB	4	1
Monobromomethane (methyl bromide)	Urine bromide	45	5
D. Amino - and nitroderivates			
Trinitrotoluene	2,4 & 2,6 dinitroamino toluene	24	6
Benzidine-derived azo compounds	Benzidine	6	6
	Dichlorobenzidine	6	3
E. Alcohols			
Methanol	Formic acid	71	21
	Urine Methanol	3	3
F. Ketones			
Acetone	Urine acetone	51	8
	Blood acetone	4	0
MEK	Urine MEK	88	17
MIBK	Urine MIBK	112	21
G. Amides and anhydrides			
Dimethylformamide	Blood dimethylformamide	10	3
Dimethylacetamide	Methylacetamide	1	0
H. Cyanides			
Cyanide	Blood cyanide	67	11
I. Pesticides			
Organophosphates	Cholinesterase		
Pentachlorophenol	Urine Pentachlorophenol	65	15
J. Inorganic and organometallic substances			
Carbon disulfide	Urine TTCA	3	3
Fluoride	Serum fluoride	3	1
	Urine fluoride	70	18

However, BEIs for altered working schedules can be extrapolated on pharmacokinetic and pharmacodynamic bases. BEIs should not be applied either directly or through a conversion factor, in the determination of safe levels for non-occupational exposure to air and water pollutants, or food contaminants. The BEIs are not intended for use as a measure of adverse effects or for the diagnosis of occupational illness.

Discussion of data in Table I

The figures cannot be used for interpretations because of the lack of specificity: i.e. first sample versus follow up, exposure versus controls etc. These results are however very helpful in evaluating the need (magnitude of exposures in terms of body burden) for such tests, the extent of levels above BEI (the effect of controls) and in creating the awareness of the availability of tests and biological monitoring in general.

Conclusions

The SASOM SSCBM will, through its stated goals and activities, endeavour to:

- Provide guidelines covering the topics of occupational health, occupational hygiene, occupational medicine, medical surveillance and biological monitoring
- Provide guidelines on relevant aspects of good laboratory practice, in its widest sense (from sample collection to result interpretation), for biological monitoring
- Publish South African biological monitoring results
- Establish a fund to ensure national and international collaboration and research studies on biological monitoring
- Provide a framework for understanding of biological monitoring as a science within the context of occupational health

Future initiatives will include the development of a database to refine the data on biological monitoring so as to allow for interpretation that will lead to appropriate and preventative medical surveillance of exposed and potentially exposed employee groups and ultimately prevent exposure and enhance well-being. Collaboration with all laboratories in South Africa will help enlarge/enhance the database so as to ensure all efforts are included in future publications.

(Part II will report on inorganic chemical exposures)

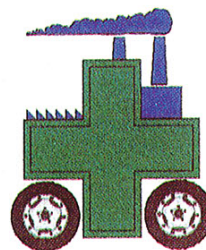
Acknowledgements

Acknowledgement to technologist V. Schillaack and the Analytical Science and Research Laboratory of Du Buisson & Partners for providing the SCBM with their results - see Table I.

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The value of holistic disability intervention

J van Niftrik

Of disability claims admitted as valid, nearly 50% were found on later investigation to be either invalid or of a degree where the payments could be reduced. This figure did not include cases found to be fraudulent. The same research found that early intervention could reduce permanent disability claims by almost 20%. (*Actuary Australia, Mar 1996*)

It has become clear that efficient, accurate and equitable assessment of claimants lies at the heart of excellence in disability risk management. This need has become evident throughout the Western world over the past decade and a half and has, to a great extent, been prompted by labile economies and sweeping changes in labour-related legislation. But, arguably of greater importance has been the impact precipitated by a change in human perceptions and behaviour patterns. Worker rights have evolved *pari passu* with an ever-increasing awareness of human rights. Equality in the workplace, the drive toward shortened working hours and the employee's concern over financial security to ensure income during hours not worked due to unforeseen events has been prominent in the development of the modern day work ethic.

Spurred on by a variety of welfare ideologies, an almost universal mind-set has developed which dictates not only a right to work, but, paradoxically, the right to protection from work-overload - whatever the nature of that overload might be.

Nor is the incapacity to work nowadays confined to well-recognised disease processes: doctors and claimants have devised phantasmagorical diseases and developed interesting parameters within which to fit a disability claim.

It is this latter re-definition of disabling conditions which is particularly worrisome. To name but a few, conditions such as post-traumatic stress disorder, social phobia, chronic fatigue syndrome and panic attack, have taken on a seemingly infinite elasticity. There is a distinct tendency among workers and their over-compassionate medical consultants to stretch transient and curable conditions into any shape required to meet the criteria for a permanently disabling condition.

Blame it on the doctor

Much of the blame for this lies squarely with the medical profession. A case in point is depression. A doctor, exposed to the avalanche of medical literature and designer drug marketing will frequently pronounce a too-hasty diagnosis of depression. To substantiate his diagnosis and treatment he will launch into a lengthy explanation of depression, re-enforcing in the mind of the patient that depression is indeed a serious impairment. All too often this is further aggravated by inappropriate medication.

A similar malfeasance can be applied to a list of other disorders: chronic back pain, minor arthritides and repetitive strain injuries are brought into play. Even the vague sequelae surrounding the endocrinopathies (menopause, pre-menstrual stress) along with indefinable conditions related to memory loss, poor concentration and improbable vitamin deficiencies are being wheeled in onto the stage.

It must be pointed out, however, that not all of this morbidity is the result of fakery, fraud or malingering. Indeed, in the minds of the claimants and their health consultants, their plight is a very real one: to them their pain and suffering is genuine and they are adamant that it is of such severity that they are unable to work and, more importantly, will never be able to work again. And they

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are not alone in this belief. They are surrounded by a cohort of comforting empathizers who fuel their conviction: doctors, employers, family members, and sometimes even legal advisors.

The disability belief system

What has happened (and herein lies the true pathology of human disability) is the evolution of a complex belief system within working society. The main tenet of this system centres around the conviction that provided a worker has the endorsement of a doctor, he has the inalienable right to declare himself disabled and to be compensated for it. Or, worse, there is a philosophy that the employee is morally entitled by virtue of age and long service, to recoup his efforts through a disability pay-out.

Given that effective disability management is faced with these overwhelming obstacles it becomes obvious that some form of counter thinking needs urgent attention. Clearly, it would be both unwise and inhumane to introduce draconian measures aimed at over stringent repudiation.

The real answer to overcoming the impasse between perception of disability and the reality of a capability to return to work requires a will on the part of a disability management team to apply itself to the concept of four unshakable tenets:

- Immediate intervention through absentee auditing
- Intensive employer/employee counselling
- Integrated and holistic claims assessment
- Aggressive rehabilitation and re-deployment

Immediate intervention

The pre-claim evaluation

Effective intervention should commence *immediately* a worker voices his or her inability to continue with productive work - no matter how trivial or frivolous the complaint may seem; or how troublesome it may be perceived to be by the manager, foreman or supervisor.

Early intervention should be further bolstered by effective absentee auditing. Identifying impending disability is best achieved through the early diagnosis of conditions most likely to lead to work impairment. The logical process should thus be one where a chronically absent employee undergoes a full medical

evaluation by a suitably qualified professional. Determining the pathology underlying the absenteeism thus offers the unique opportunity to reverse disease processes which will inevitably render the employee incapable of productive work.

Equally important in the absentee auditing process is the capability with which it provides the employer to plan workforce productivity. Identifying personnel who pose a risk to workplace efficiency, re-deploying them within the workplace or planning replacement staff ahead of staff losses can only improve efficiencies and bottom line outcomes.

Appropriate medical expertise

As all disability is rooted in one or other bodily dysfunction, the start of any claims process must be an independent, unbiased medical opinion provided by a medically qualified professional trained in and possessed of expertise and experience in disability assessment.

Ideally this should take the form of a pre-claim evaluation by means of which the doctor will determine whether or not the condition complained of constitutes a real disability, potential disability or a reversible condition. To be effective, this evaluation must include a *full history and physical examination* coupled to requisite laboratory and X-ray investigations. The importance of this cannot be sufficiently stressed as such an evaluation and examination will achieve the following:

- Validity/non-validity of a disabling or potentially disabling condition
- The identification of other - possibly undiagnosed - co-morbidity
- Early treatment intervention aimed at minimising further morbidity
- The opportunity to treat and cure a condition before true disability sets in
- If the condition allows, to have the worker redeployed into a temporary work-situation which will allow him/her to recover fully while remaining at work.

Probably of greatest import in the pre-claim evaluation process is the opportunity to head off negative perceptions in the mind of the employee and his employer. A positive prognosis on the part of the physician, coupled to a properly structured and fully explained medical management protocol will go a long way toward averting a costly and time consuming claim for permanent disability.

Intensive counselling

A crucial element in the pre-claim evaluation process is the inclusion of pre-claim counselling, even if there is a patently obvious disability of a total and permanent nature.

Before an employee or his employer contemplates a submission for disability, it is imperative that adequate time is devoted to an explanation regarding the claims process. For this to be effective, all parties should be made fully conversant with the precepts of disability in relation to the benefit definitions and rules. This should be carried out by someone who is qualified to do so. In the ideal setting this task will fall to an occupational therapist/counsellor or Human Resource Officer in conjunction with the assessing physician. The areas addressed would include:

- A full and open explanation of the worker's medical condition
- The prognosis of the condition, its management and, if relevant, the long term sequelae once it has stabilised
- Rehabilitation and the positive aspects of investing in rehabilitation (if this is required)
- A positive outlook with regard to the claimant's future (or even immediate) return to work
- Full explanation of the rules and definitions of the benefit scheme and how the claimant's condition measures into these
- A full and open discussion to explain why the condition may not constitute a disability claim in terms of the rules of the benefit scheme
- The very real financial, physical and psychological benefits the employee and his family will enjoy if he remains economically active - even if the activity is curtailed by an impairment

The above should be conducted empathetically, but with a firm attitude toward a positive outcome. If successful, effective pre-claim counselling in cases where there is no evidence of overt disability or where the disability is not total will achieve the following:

- A full understanding by the claimant that he is either not disabled or that he will recover sufficiently to return to work in his own occupation or in a capacity in keeping with his impairment
- A positive mind-set on the part of the

claimant: that in all respects he will be far better off returning to the work-force (in whatever capacity)

- An immediate decision. This allows the employer to plan his productivity while the employee goes through the period between recovery, rehabilitation and a final return to work
- The opportunity for the medical team to ensure correct and efficacious management of the claimant's condition and thus a swift return to work
- And, not least, avoidance of unnecessary and time-consuming documentation in submission of invalid disability claim applications.

Finally, the process of a pre-claim evaluation service acts as a potent deterrent to frivolous or fraudulent claims applications. The pre-claim evaluation will have the added benefit of:

- Identifying potential disability and providing an opportunity to prevent irreversible damage
- Early detection of work-related hazards and unsafe practices in the workplace
- Providing the employer and employee with peace of mind - i.e. an independent facility which will avoid employer/employee conflict over health-related issues
- Providing the employer with a vehicle toward social responsibility, conformity with the Occupational Health and Safety Act as well as the Labour Relations Act

Integrated and holistic claims assessment

If an event (e.g. trauma, cardiovascular incident) or the pre-claim clinical findings confirm a probable disabling disorder, a full disability assessment should be performed within 48 hours by the doctor conducting the pre-claim evaluation or, if indicated, referred to a specialist in the disease area applicable to the disability (e.g. a complex neurological condition would be referred to a neurologist). In cases where the worker has been hospitalised the assessing doctor should communicate directly with his hospital colleagues to determine the exact nature of the case, its management and the prognosis - both immediate and long-term.

The clinical findings are communicated simultaneously (again with as much immediacy as practicable) to the underwriting claims assessor and the employer.

In order to maintain confidentiality and the constitutional rights of the employee these two communications differ, however, in terms of content.

The claims assessor will receive a full confidential medical report, while the employer will receive only that information required to inform him of the employee's status in regard to the work situation (i.e. whether or not he is capable of returning to work; when he is most likely to return to work; whether he is likely to return to his current occupation, rehabilitation prospects, etc.)

The claims assessment process

Early medical intervention, as described above, allows for immediate assessment by claims assessors before lengthy, and possibly irrelevant, application formalities are embarked upon. The process thus allows the employer and the broker to provide the required documentation with the foreknowledge that the claim will be admitted well in advance of the expiry of the waiting period. The only exception to this might occur for technical reasons e.g. invalid membership status, pre-existing clauses, etc.

Structural aspects of early intervention

The advantages of the system described are obvious, but an early intervention protocol requires the development of a sound resource infrastructure. This is only possible once the requisite expertise has been identified. Central to this is the recruitment of doctors of all disciplines (including Occupational Health), occupational assessors, administrative staff and claims specialists. Most assessors will have the latter two skills categories in place. They will, however, require training in fast-track and rapid response communication systems which should preferably be electronic.

As regards medical and occupational expertise resources, these should, first and foremost, undergo training in the skills of medical disability assessment by doctors within the life insurance ambit.

The discipline of medical disability assessment

Disability assessment is a medical discipline in its own right and requires an expertise which is not adequately taught in formal medical education. Special training sessions are thus mandatory and should

embrace not only the assessment of the physical and psychological components, but also be aimed at familiarising medically trained people in the nuances of legal matters, the psychopathologies inherent in the disabled person and the arena of rehabilitation processes.

For instance, legal issues should include the vital aspect of confidentiality while at the same time adhering to the rights of the individual - i.e. the claimant's right - to full knowledge of his medical conditions. Medical professionals should not, under any circumstances, pass an opinion on whether a patient is entitled or not entitled to a disability benefit. That decision is a legal one and is the responsibility of the claims assessor.

Indeed, it should be clearly understood by all parties concerned that medical assessment and claims assessment are two entirely separate issues in the final decision-making process, and more importantly, that neither process influences the other. To allow impingement of one upon the other merely results in disappointment and hardship on the part of the claimant and conflict between professionals.

Most importantly, comprehensive medical assessment by appropriately skilled medical professionals should precede the process of applying for a disability claim. Only then, with all relevant medical information at hand, will the claims assessor be capable of a speedy and equitable decision.

Rehabilitation

Seminal to holistic disability management is the provision of access to rehabilitation.

Each case requires to be dealt with on its individual merits. An acute awareness for rehabilitation prospects must be uppermost in the mind of the medical assessor. Moreover, this awareness must be present at the time of the first clinical encounter with the claimant.

In each case the clinician should consider and place on record in his assessment report answers to the following questions:

- Is the disabling condition reversible?
- If reversible, to what degree?
- What medical (including surgical), physiotherapeutic, occupational and/or re-skilling interventions are required to optimise functionality?
- What degree of functionality can rehabilitation be expected to achieve?

- What timespan will be required for rehabilitation?
- Once rehabilitation has been concluded, what future occupational options could be reasonably expected?

With regard to rehabilitation, the clinician should look beyond the purely physical and mechanical aspects of functionality. Psychological, cognitive and other higher functions require equal attention in prognosticating on a claimant's future health and capabilities. This applies also to purely medical conditions (e.g. diabetes mellitus, cardiac decompensation, neurological fallout, etc.)

Comment on the claimant's motivation to be rehabilitated is also useful in determining future management.

Finally, and most importantly, an opinion on rehabilitation prospects should be recorded at the first medical assessment - even if the condition at that time is such that a pronouncement on rehabilitation is only tentative.

The overwhelming benefits of holistic disability intervention.

The evidence in favour of early intervention and appropriate rehabilitation as a means

to reduce premium rates, return people to work and to develop a culture which strives for a sound work ethic is overwhelming.

Moreover, early medical intervention at the workplace conducted by doctors practicing to First World standards works hand-in-hand with the Government drive towards better health care. Indeed, the whole process of early medical intervention, disability management and rehabilitation can be regarded as a potent contribution by the private sector toward an integrated national health care system.

The tragedy is that programmes aimed at early intervention are only prompted once the impact of financial losses are felt, by which time the compensation mind-set has become well-entrenched in the worker psyche.

The result of this knee-jerk philosophy toward disability management as practised to date is now evident in South Africa's current disability compensation bill - an estimated R450 million per annum. The Australian research indicates that early intervention could cut this by 20% - a whacking R90 million each year towards, perhaps, bolstering the State health care coffers.

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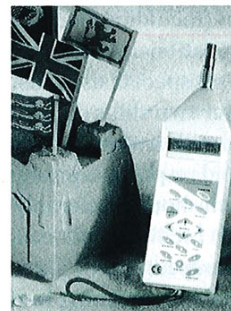


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Malaria: updated prophylaxis policy

The risk of contracting malaria is once again increasing with the onset of summer and the rainy season. Over 18 000 people in South Africa contracted malaria during the first half of this year, compared to a total of about 30 000 cases during 1996. If adequate precautionary measures are not taken there could be a recurrence of the epidemics experienced during the previous two seasons.

The prophylaxis policy of the Department of Health is still the same as during the previous season. Malaria poses a risk in the lower altitude areas of Northern Province, Mpumalanga and the north eastern part of KwaZulu Natal. Based on the malaria cases in the risk areas during the past 15 years, the malaria risk areas have been divided into high, intermediate and low risk areas (*see map on following page*).

In all the risk areas precautionary measures to prevent mosquito bites should be taken throughout the year.

The following measures should be taken between dusk and dawn:

- If possible, avoid being outdoors at this time
- Wear long sleeves, trousers and socks if outdoors during this time
- Apply an insect repellent to exposed skin
- Keep doors and windows closed, unless they are screened
- Use insecticidal sprays, especially in sleeping areas
- Use mosquito coils and mosquito mats in sleeping areas
- Sleep under mosquito proof bed nets, preferably impregnated with an insecticide registered for this use

In the high risk areas, indicated on the map, the use of antimalarial drugs is recommended from October to May.

The intermediate risk areas (only in KwaZulu Natal) include the following tourist areas: Kosi Bay, Sodwana Bay, Mkuze Game Reserve and St Lucia Lake (not the town of St Lucia and the river mouth). In these areas the use of antimalarial drugs is advisable only for high risk people (children under 5 years, pregnant women and immunocompromised persons e.g. a person who had a splenectomy or is on immune suppressant medication such as cancer chemotherapy) from October to May.

In the low risk areas no antimalarial drugs are recommended.

In the North-West and Northern Cape provinces along the Molopo and Orange Rivers, including the Au-grabies Falls and the Kalahari Gemsbok National Parks, malaria is only occasionally transmitted locally. It is not necessary to take antimalarial drugs when visiting these areas. Precautionary measures to prevent bites of other nuisance mosquitoes can be taken.

The following antimalarial drugs should be taken: Chloroquine (trade names: Anoclor, Daramal, Nivaquine, Plasmoquine or Promal) should be taken together with proguanil (trade name: Paludrine) and are available at pharmacies without a prescription.

Chloroquine should be taken every seven days starting one day before entering the malaria risk area, once weekly while in the area and weekly for four weeks after leaving the area. Proguanil should be taken once daily, starting one day before entering the malaria risk area, daily while in the area and daily for four weeks after leaving the risk area.

An alternative drug which could be taken alone is mefloquine (trade name: Lariam) which requires a doctor's prescription. Mefloquine should be taken every seven days starting one week before entering the malaria risk area, once weekly while in the area and weekly for four weeks after leaving the area.

In pregnancy, malaria poses a particular risk to the health of both the mother and foetus, increasing the risk of maternal death, neonatal death, miscarriage and stillbirth. Pregnant women should avoid malaria areas, if possible. Infants and young children (especially those under the age of 5 years) are particularly at risk of severe malaria disease since malaria can develop and progress very rapidly. They should preferably not be taken into malaria risk areas. If pregnant women and small children are residents of or are visiting malaria risk areas, every precaution should be taken to prevent mosquito bites and, where applicable, the appropriate antimalarial drugs should be taken.

Residents in malaria areas should take precautionary measures against mosquito bites throughout the year. High risk people should consult their doctors for advice on the taking of antimalarial drugs during the summer months.

It is important to note that a person may still contract malaria although precautionary measures have been taken. The symptoms of malaria, namely headache, fever, muscular and joint pains, sweating, shivering attacks, nausea, diarrhoea and fatigue are very similar to those of flu. If any of these symptoms occur after a visit to malaria risk area, a medical practitioner should be consulted immediately. The doctor should be informed of the visit in order to ensure malaria is diagnosed and treated in time. Malaria can occur up to six months after leaving a malaria area.

The Department of Health has published a pamphlet (copy included in this issue) for the use of people visiting malaria risk areas in South Africa. Additional copies of the pamphlet can be obtained free of charge from any provincial office of health or from: Department of Health (Publication Store), Private Bag X828, Pretoria, 0001

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-Sunday Times, 18 August 1997

We've all heard the old saying, "Prevention is better than cure," but despite the availability of preventative medication to combat malaria and other simple ways to protect against mosquito bites, some ignorance still exists as to how malaria can be prevented.

Some people wrongly believe that by using preventative medicines, symptoms of the disease will be masked, making it difficult to detect. Others think that it is not necessary to take prevention when staying in malaria areas for a short period.

Many more do not take malaria seriously at all, even when travelling in game parks in South Africa or in any of the other risk areas indicated on the map on the right side of this page.

So unfortunately, even though malaria is preventable, it continues to be one of the biggest killers of people throughout the world.

For protection, the World Health Organisation (W.H.O) and the Department of Health recommend that people protect themselves against malaria and mosquito bites when in an endemic area.

Among others, in chloroquine-resistant areas, the W.H.O and Department of Health recommend preventative **combination** drugs **containing both chloroquine (DARAMAL®) and proguanil (PALUDRINE®)** especially during the high risk malaria season from approximately October to May.

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Before going on your next holiday make sure that you take all the correct preventative measures if you are visiting any of the risk areas on the map.

Take precautionary measures against mosquito bites throughout the year in ALL RISK areas

- HIGH RISK** Anti-malaria drugs* are recommended from October to May
- INTERMEDIATE RISK** High risk people** may be advised to take anti-malaria drugs from October to May
- LOW RISK** No anti-malaria drugs are recommended
- Malaria risk areas in neighbouring countries

***Chloroquine with proguanil or mefloquine alone**
 **High risk people are children under 5 years, pregnant women and immuno-compromised people e.g. a person who had a splenectomy or an AIDS patient or a person who is on immune suppression medication such as cancer chemotherapy or long term steroids.

GAME RESERVES

1. Tshipese	8. Blyderivierpoort	15. Kosi Bay
2. Hans Merensky (Eiland)	9. Manyeleli	16. Itala
3. Groot-Letaba	10. Sabie-Sand	17. Mkuze
4. Klaserie Park	11. Kruger National Park	18. Sodwana
5. Sharalumi	12. Pilanesberg	19. False Bay
6. Timbavati	13. Ndumu	20. Fanie's Island
7. Thornybush	14. Tembe	21. Hluhluwe
		22. Umfolozi

COMPILED IN COLLABORATION WITH THE DEPARTMENT OF HEALTH AND THE MEDICAL RESEARCH COUNCIL, 1996

TECTION AGAINST MALARIA FOR YOUR FAMILY.

The DOTS programme for tuberculosis- what's new?

B Hoggins

The Department of Health launched the Directly Observed Treatment Short Course (DOTS) programme with much enthusiasm as the 'new' way to supervise tuberculosis (TB) patients and ensure compliance. DOTS was pioneered in the Western Cape as a community project by the Western Cape TB Alliance using volunteers who would supervise and assist people suffering from TB. The project was and is an unqualified success; but is this not what Occupational Health Nurses (OHNs) in industry have been doing for years?

A random sample of 68 OHN's working in industry on the East Rand was contacted and questions were posed to them.

Questions and Results		
Do you treat TB patients in your clinic	Yes 66	No 2
Those that do treat TB patients		
Do you issue a week's medication to the patient and let him/her take medicines unsupervised *night shift workers only	Yes 2*	No 64
Do you watch the employee swallow his/her tablets daily?	Yes 66	No 0
How long has your company treated TB in the work place?	No of years 0-9	No of clinics 9
	10-19	14
	>20	43

Discussion

The current practise in most occupational health clinics (confirmed by the above survey) is that when an employee is diagnosed as suffering from TB, a nurse from the local authority will contact the OHN at the factory and bring out the medication in some instances. The employee then visits the factory daily, is

given his/her tablets and watched to make sure he or she swallows them (incidentally the same procedure is followed for the treatment of sexually transmitted diseases [discharges] when Ciprofloxacin is used as a stat dose).

In the past there has been a close working relationship between the Local Authority Nurse and the factory OHN. In my experience, the success rate is very high and I cannot remember when there was a failure of treatment. It is also common practice after employee have been cured to weigh them on a monthly basis. This gives the OHN the opportunity to ask the employees how they are feeling and to ask specific questions related to TB symptoms.

The South African Society of Occupational Medicine has had a guideline on TB in industry which includes direct supervision of treatment and which has been used extensively by OHNs for many years.¹

DOTS may be new in the community setting, but it is certainly not new to OHNs. I have been involved in Occupational Health since 1979 and supervision, counselling and support of TB employees is and has been part of my daily routine. One patient after his six month treatment course was completed (in those days daily streptomycin injections as well as tablets), in celebration of his final injection presented me with a tray of "farm" eggs and a freshly slaughtered chicken.

Related issues

A worrying feature of the newly launched DOTS programme is that no mention has been made in either recent Department of Health reports^{2,3} or the launch of the programme about the role that industry and specifically OHNs have played in the prevention, treatment and rehabilitation of employees with TB. There seems to be a

Bev Hoggins,
Chairman,
Professional
Society of
Occupational
Health Nurses,
Gauteng Central

Occupational Health SA
1997; Vol 3, No 5: 30 - 31

Original and Review

total disregard by the Department of the work performed by OHNs in the whole primary health care arena which extends further than TB. The problems with the "permit" system bear testimony to this. It is hoped that the department will eventually recognise that occupational health clinics are a valuable resource and should be utilised by the Department to assist in their whole primary health care initiative.

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An Occupational health nurse's personal perspective on pulmonary tuberculosis

I was diagnosed as having pulmonary tuberculosis on 30 March 1993. I am employed at a large flour mill as the Occupational Health nurse and the Occupational Health Centre is very busy clinic where I see approximately 800 persons each month with the aid of a staff nurse and a part-time doctor (2 hours per week).

I was therefore not surprised to find myself exceptionally tired and rundown towards the latter part of 1992. I had contracted amoebic dysentery during November 1992 (presumably from one of my patients) which was only diagnosed after several severe bouts of diarrhoea with high temperatures and dehydration, and because the tiredness and lack of energy had persisted over a period of time I had not realised just how badly I was affected and, in retrospect should have consulted a doctor earlier.

The first indication of chest involvement came from a continuous non-productive, cough, and as I am an asthmatic I put the cough down to asthma, possibly aggravated by going into the flour mill.

Some three weeks later I started to have pain in the right upper part of the chest and the cough became more persistent. Even then the results of the x-ray came as a total surprise - pulmonary tuberculosis in the right upper lobe.

Armed with my x-ray results, I consulted my General Practitioner, whose reaction was an astonishment that almost equalled my own. I went off to the local laboratory for tests including a Mantoux test - the results of which was a hugely positive 22 mm induration.

1. Normal negative reaction measures 0-4 mm induration
2. Doubtful reaction measures 5-9 mm induration
3. Positive reaction measures in excess of 9 mm induration

The ESR (erythrocyte sedimentation rate) result (normal 0-20 mm in women in 1 hour) was 42.

I was referred to the Provincial Hospital and given the following drugs:

1. Isoniazid (INH)
2. Ethambutol (EMB)
3. Pyrazinamide (PZA)

By now I was feeling very ill and starting to lose weight. The medication made me nauseous, the pain worsened and woke me up at night, as did the coughing although I produced no sputum.

Having been in contact with Dr Collins at SANTA (South African National Tuberculosis Association) for several years, I decided I would consult with him as an expert in tuberculosis. He gave me great support and some interesting facts.

Since the mid 1980s there has been a steady growth in the number of tuberculosis cases reported annually including multi-drug resistant (MDR) strains. As health workers are regularly exposed to *Mycobacterium tuberculosis*, particularly through contact with patients from disadvantaged areas or poor economic situations, more and more health workers are contracting tuberculosis.

This is usually transmitted through droplets carrying *mycobacterium tuberculosis* and people coughing and sneezing contaminate their surroundings. The probability of infection increases as the amount of contamination in the air increases.

As most Occupational Health Centres are busy places the contamination is probably higher than in normal circumstances especially as so many sick people pass through the Centre.

A visit to the local TB clinic followed. My medical history was taken, a general examination carried out, three sputums were required from early morning expectoration. My drugs were changed to Rifater (contains Rifampicin 120 mg, Isoniazid 80 mg, Pyrazinamide 250 mg per tablet) 5 tablets a day (Monday - Friday). I was assured that I would feel better after a couple of weeks and the sugar coated tablets were easier to swallow. I continued to visit the local clinic monthly, not only for my treatment, but also for

urine tests, eye tests and weight checks plus chest x-rays at intervals. The doctor at the clinic was surprised at the persistent pain in my right lung which was probably due to pleural origin. I found paracetamol reasonably effective in controlling this pain.

I was still working and trying to cope with life in general including running a home and family. Shopping was an ordeal with the trolley becoming a prop, rather than a means of transporting goods, and I became very depressed. At one point I broke down quite convinced that a resistant strain was resident, as after eight weeks of treatment I felt no better although my weight had stabilised and the cough had almost gone.

In retrospect I have learned many lessons and my own tuberculosis patients are now treated with more loving care and personal empathy as I can fully understand how they feel!

Health workers who contract tuberculosis during the course of their duties can make a claim to the Workmen's Compensation as it is considered an occupational disease but, in my particular case, the claim was rejected under the old ruling!

An interesting rider is that some time later I had a phone call from my General Practitioner whose wife acts as receptionist at his consulting rooms and who had been diagnosed as suffering from pulmonary tuberculosis. He had difficulty in obtaining Rifater tablets for her as the clinic no longer dispensed this particular tablet and had reverted to using the three tablets regimen. I managed to put him in touch with a supplier. It was interesting to note in conversation with her that she felt much the same as myself during treatment - taking a prolonged period to feel any improvement, with severe nausea and depression plus, in her case, severe hair loss as well.

We are both fully recovered now but certainly people need to be aware that health care workers are at an increased risk of contracting tuberculosis and that it can take a prolonged period of time before patients feel well again.

*By Wendy Grey RN RM OHN
Occupational Health Nurse,
Premier Milling, Isando*

MICRO-NUTRIENT DILUTION- WHAT IS THE CULPRIT?

The clean bill of health given to sugars in relation to chronic and other disease makes it seem incongruous that there is disagreement on an answer to the question **"Is sugar consumption at current levels a cause of nutrient-inadequate diets?"** It is theoretically possible that nutrient intakes for an individual could fall below his or her own requirement if the diet contained an excess energy source such as sugar^(1,2). The question should rather be examined in terms of whether or not current sugar consumption levels represent safe intakes for most individuals^(2,3).

Do diets provide the nutrients that are needed?

Despite the fact that, at population level, most "industrialized" countries enjoy diets that are adequate in energy and nutrients, intakes of particular nutrients in specific groups of these populations may be at risk. For example, in the United Kingdom there is evidence in both adults and children that iron intakes, particularly in women and girls, are below recommended levels^(4,5,6). And in Arkansas (USA), it appears from a study that the RDA's for vitamin B6, zinc and iron are the most difficult to meet⁽⁷⁾.

How does the level of sugar consumption impact on nutrient status?

Studies in the UK have indicated that in most cases nutrient intakes are higher (often much higher) in those people with a high intake of sugar. They also have higher overall energy intakes. These individuals tend to consume more of everything⁽⁴⁾.

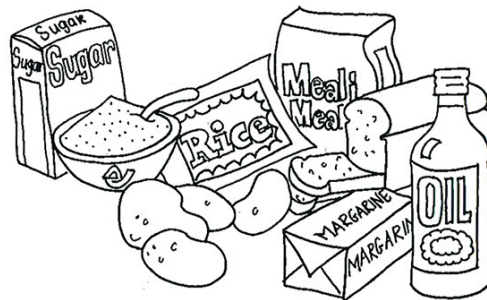
The UK COMA report on sugars comments, "sugars intake is a weaker predictor of absolute micro-nutrient intakes than total energy consumption"⁽⁴⁾.

In all the studies that were described by Ottley, it was found that as the proportion of dietary energy from sugar rose, the proportion of energy from fat, protein and in adults, alcohol, fell. The intakes of protein were still well above recommended levels in most cases. With respect to attaining targets for fat and alcohol intake it would appear that dietary quality is better with a higher sugar intake⁽⁴⁾.

No consistent pattern of changes in nutrient intake related to level of sugar consumption could be identified across different populations. This suggests that other dietary factors were more influential on micro-nutrient intakes. It seems that the proportionately large intake of foods not rich in sugar had the most influence on nutrient status⁽⁴⁾.

When nutritious foods are displaced in the diet this can indirectly contribute to deficiencies of vitamins and minerals. This can occur when any foodstuff, be it sugar, complex carbohydrate, protein or fat, is consumed to the exclusion of other foods that provide required nutrients. Sugar is rarely consumed in isolation, but rather tends to be eaten in combination with other foodstuffs.

Consuming a nutritionally balanced diet made up of a wide variety of foods should meet the known nutrient needs of most healthy persons⁽⁶⁾.



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The importance of good history taking at pre-employment medical assessment

Introduction

A company manufactures animal feeds to which certain medication and additives are added for prevention of disease or maintenance of health.

Presentation

An employee was employed as a Plant Operator where specific medications are added by hand to the feed. He presented at the clinic with an acute dermatitis for which certain medications (e.g. steroid cream) were issued, and he was given latex gloves to use when handling the additives.

He improved and the problem cleared completely then reappeared. This time he presented with threats that it was work related, that he knew his legal rights and was going to take the company to court.

He also advised that he had seen his own GP who had treated him but could not remember what creams he had been given to use. Permission, (verbal and in writing) to obtain information from his GP, in order to get a complete history was granted by the patient.

The GP was most co-operative and replied that he

had been treating the employee for this problem for the last five years, that it was a familial problem as the employee's father has the same problem and was receiving ongoing treatment.

Research

On checking the employee's pre-employment Declaration of Health Form, which he had completed and signed, the question.

"Are there any other circumstances or information relative to yourself or your family history of a kind which may affect your future health?" he had answered "No".

At the end of the questionnaire there is a declaration, as follows, which the applicant must read and sign:

"I declare that to the best of my knowledge and belief that the above answers are true and correct and that in providing them I have not suppressed or withheld any information with reference to any fact or condition that concerned my present or future health or life expectancy. I hereby consent to the company to request a full medical examination, including any blood tests, chest x-rays and urinalysis, and the results to be made available to company medical staff. I agree that if any statement made by me on this form is afterwards found to be false, the company has the right to terminate my employment contract without notice or the obligation to pay notice pay, or alternatively, the Trustees of the Pension Fund shall have the power to reduce the benefits payable by the fund on my ill-health, retirement or death.

I also agree to report any injury on duty to my Supervisor/Foreman before completion of my shift on the day of injury.

Signed:..... this..... day of19....."

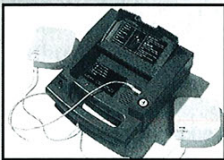
When interviewing the applicant prior to examination at pre-employment, always ask this question: "Are you sure you understand this statement and are you agreeable to signing the declaration?" and then proceed with checking the relevant information on the questionnaire prior to physical examination.

The employee was called back to the clinic for a review. When it was brought to his attention that he had answered "No" on the form; that he had only been at the factory for one year; that his GP had advised that he and his father had been receiving treatment for the same problem for the past five years, he instantly changed his tune. The employee then dropped his antagonistic attitude and continued his attendance with his GP, and no former complaints were lodged.

Let it not be said that "History taking is a waste of time".

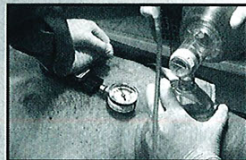
Sister C Carpenter, Occupational Health Nurse, member of the Natal Inland Occupational Health Nurses Professional Society

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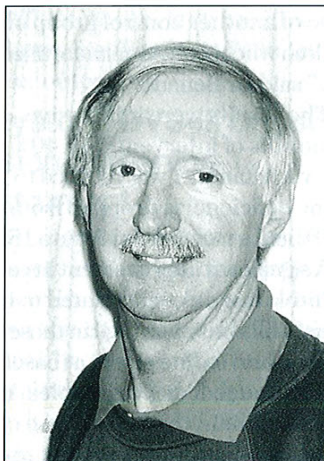
Mike Baker

Mike is currently the Head of Medical Services at Haggie Limited, a diversified engineering company where he has worked for 21 years. His responsibilities include management of the in-house occupational health clinics, the Group Medical Aid, Group Environmental Control and as a trustee on the Group Pension and Disability Funds.

He qualified at the University of the Witwatersrand and after two years internship at the Johannesburg Hospital, Baragwanath and the Queen Victoria Maternity Hospital, he was in general practice in Edenvale for three years. He then joined Haggie in 1976 in a full-time appointment which was unusual in industry at that time as, apart from the mining industry, there were only a handful of full-timers working in industry.

It was in 1976 that he started his association with occupational health and specifically with SASOM. He had not been long with SASOM when the secretary resigned and he was thrust into the secretarial position which he held for 11 years. During this period he initiated and produced the SASOM newsletter which has subsequently grown into the journal "*Occupational Health Southern Africa*". Thereafter he was chairman of SASOM for three years and has subsequently stayed on the executive committee. He has also served in several other associations which have included president of ASOSH, chairman of the Health Work Group of the SA Chamber of Business and as a board member of NOSA for a short period.

Mike is enthusiastic about the future of occupational health with some qualifications. He entered the field when the Erasmus Commission on occupational health was released 21 years ago. One of the recommendations was the introduction of legislation for occupational health and this took nearly 20 years to achieve in industry with the recent introduction of the Occupational Health and Safety Act (OHSA) under the Department of Labour. The new Mine Health and Safety Act (MHSA) has also expanded its occupational health aspects. However, it is relatively simple to write legislation, but it remains a major challenge to carry out.



He is also concerned about the continued fragmentation of legislation under numerous Acts and Departments and has felt strongly for many years that there needs to be integrated legislation with a type of Health and Safety Executive as seen in the UK. Unfortunately, at present, each government department is entrenching its "own empire" and only a strong political resolve will result in any movement towards this goal.

He also feels there needs to be greater public and private sector cooperation and that the "playing

fields" in certain areas need to be levelled. None is more critical than the acceptance of the occupational health nurse as a "nurse practitioner" as soon as possible. Unfortunately this whole issue continues to be problematic due to the numerous vested interests. The Department of Health now has this "window of opportunity" within the new health dispensation to enact the correct regulations to set the whole private "nurse practitioner" issue on a proper basis. He has always been a strong advocate of the important role the occupational health nurse plays in both primary health care and occupational health at the work-site. He is co-author of the book "*An Introduction to Occupational Health Nursing in South Africa*" which has, as one of its objectives, to promote the important role of the occupational health nurse.

On the positive side, occupational health has become more visible, is enjoying a higher profile and has been targeted by the new government as an area of priority. The number of occupational health clinics in the private sector has also grown steadily and is set to grow further in the future with the advent of managed health care. The development of the Journal will play a key role in the education of all the role players as well as being a forum for debate and opinion. SASOM as an organisation has also grown in stature with increasing membership and the attainment of a permanent secretariat. Having reached this level, it now needs to move forward again to promote occupational health further in South Africa and to become more of a service organisation by being able to respond to a wider range of issues.

Vitamin cookie reduces malnutrition by over 50%

A vitamin-enriched cookie is providing an innovative solution in the fight against malnutrition in South Africa.

Announcing the results of a one year study in Cape Town today (July 15 1997), Dr Spinnie Benadé of the Medical Research Council said the fortified biscuit experiment had resulted in a 50% reduction in the prevalence of micronutrient deficiencies in the children who participated.

Sponsored by SASKO, the baking and milling group, the pilot study at Ndunakazi, a rural village 50 km north-west of Durban, is pointing the way to success for other nutrition intervention programmes.

"The main aim of the Ndunakazi project was to improve the micronutrient status of the children. Hunger, malnutrition and deficiencies in iron and iodine have been associated with a failure to learn adequately," said Dr Benadé.

According to him, studies have shown that school feeding schemes which incorporated a fortified food product had helped to improve the micronutrient status of pupils in South Africa and elsewhere.

"At Ndunakazi, we supplied a biscuit fortified with iron iodine and vitamin A to 130 primary school children aged between six and 11 years. For a year we

monitored their nutritional status, school attendance and cognitive functions and compared these results with those of another control group of 130 children who received an unfortified biscuit," said Dr Benadé.

The results were impressive. After 12 months of intervention a 40% deficiency in vitamin A was reduced to 12%. Iodine deficiencies dropped from 97% to 30% and anaemia from 30% to 15%.

A significant improvement in certain cognitive tasks closely related to intellectual skills was measured in those with low iron and iodine status at baseline.

"Although fruit, vegetables, meat and fish remain the best source of nutrients these products are not always readily available in rural areas such as Ndunakazi. On the other hand vitamin supplements in tablet form are unpopular among rural people," says Ms Nonnie Vorster, Sasko's product development manager.

Dubbed the 'nduna cookie', the high energy, low cost biscuit was developed by SASKO at its laboratories in Paarl.

At a cost of only 23c per child per day the biscuit constitutes a tasty, convenient snack with a long shelf life, suitable for every season of the year.

An important aspect of the study was the wholehearted involvement and support given by the inhabitants of Ndunakazi. Led by local school

principal, Michael Phungula, the community initiated the project with the MRC when two children in the village died of malnutrition.

The project is administered by MRC-trained members of the community and supervised by Mr Phungula who attended a course on the management of nutrition programmes in Indonesia.

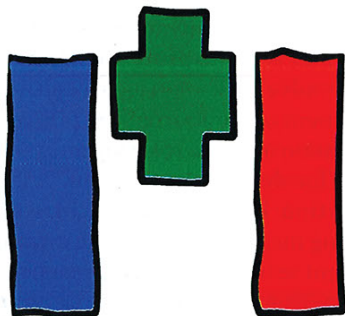
"The programme is just the start of a mini-revival in our village," says Mrs Eunice Gwala of the Ndunakazi clinic.

The Groups's social responsibility manager, Rob Bradbury, has suggested that small bakers could also be involved in the provision of the fortified biscuit to school feeding schemes throughout the country.

"SASKO has the infrastructure and quality control measures to supply an all-in-one baking mixture to local entrepreneurs who could in turn supply freshly baked cookies to the schools within their vicinity," says Mr Bradbury.

The effectiveness of the Ndunakazi project could be repeated in other parts of the country thereby improving the overall success rate of the State feeding schemes which dropped from 5.5 million pupils fed in August 1995 to 2.9 million in August 1996," he says.

Enquiries: Dr Spinnie Benadé, Medical Research Council, tel (021) 938-0283, Ms Nonnie Vorster, SASKO, tel (021) 807-5100.



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M & A launch new products

RinoFlow™ Micronized ENT Wash

RinoFlow aerosolises solutions intended for nasal irrigation and humidification of the upper respiratory tract. Phase 1 washes the nasal cavity and Phase 2 washes the paranasal sinuses. This helps relieve pain due to sinus congestion and hydrates the mucous blanket to facilitate mucociliary action.

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The Micronizer-Chamber ensures consistent particle size, velocity, pressure and flow of the aerosol stream to the nasal cavity and the sinuses.

Large-particle aerosol stream delivery ensures the aerosol will be deposited in the upper respiratory tract instead of in the lungs, and will not be exhaled.

Controlled pressure delivery allows no more than 1 psi of pressure to be delivered.

Controlled aerosol flow rate ensures comfortable and effective therapy.

The dual velocity of the aerosol delivery is designed for effective therapy.

A simple, durable compressor unit generates specified air pressure for the Micronizer-Chamber. It uses a

standard fuse and has an inlet filter that has to be changed only once a year.

All of these factors increase patient compliance and can lead to better outcomes.

Keystone DVS-III Driver Vision Screening Instrument

Designed for the rapid and accurate evaluation of large groups of people, this electromechanical vision test equipment is lightweight, portable and completely self-contained. Tests of visual acuity, depth and colour perception, heterophoria, peripheral vision and night-time visual skills can be administered in minutes.

The viewing head of the unit accommodates all types of spectacle frames and its closed configuration eliminates outside light and distraction. The instrument can be placed on any convenient table surface and adjusts in height to fit individuals from 5'0" to 6'5" comfortably.

The unit incorporates provision for up to eight different test patterns. Keystone can supply standard universal driver tests or will design special targets to meet individual customer requirements.

Using the compact control box, the examiner, who may be up to three feet away, is in full command of the screener. Signal lamps on this control unit indicate both the type of test and which eye is being screened. A key card showing the nature of each test and the correct answers clips to the face of the control box.

Pony graphic

This is a portable spirometer for spirometric parameters measurement. The wide display (66x77 mm) makes the user visualize in real time the flow/volume loop during the Forced Vital Capacity manoeuvre and the volume/time loop during Slow Vital Capacity and Maximum Voluntary Ventilation manoeuvre.

Eymasa audiometers

REDUS-70 and REDUS-80, the new audiometers from Eymasa, permit revision of hearing, complying with the ISO 6189 standard.

The technology and configuration of the Redus audiometers have been conceived for higher sensitivity and accuracy in their measurements. Automated audiometric testing is also possible, where the audiometer can be connected to a personal computer over an optional serial interface allowing software control of testing. The result of the test can be registered on the audiometric sheets supplied with the system or stored in a PC if the optional interface is used.

Further information from M & A Medical, tel (011) 917-3937/8/9.



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Bosman Johnson and Valkenberg go crazy on-air

Bosman Johnson FCB has created a radio campaign for Valkenberg Psychiatric Hospital that relies on dark humour to prompt listeners to contribute to the institution's fund raising drive.

Valkenberg is Cape Town's oldest psychiatric hospital and home to 1 in 80 Capetonians at some stage in their lives. The patients rely on the wide variety of professional help offered by the hospital and most patients are treated and released back into society after 21 days. Unfortunately, Government has cut back on funding and the hospital has had to turn to the public for support.

In order to generate public awareness of the hospital, Bosman Johnson FCB has donated an advertising campaign in the form of radio, print and direct mail to get people laughing all the way to the bank (to make a deposit to

Valkenberg). The following are three versions of six, 15-second spots that are currently being flighted on various radio stations in Cape Town.

Ad 1: Amnesia

VO 1: Used to forget things but now I uh er, mmmmm...

VO 2: Remember, Valkenberg still needs money. Donations are welcome at um, err...

Ad 2: Narcolepsy

VO 1: Used to suffer from narcolepsy, but now I (Zzzzzz)...

VO 2: If Cape Town doesn't wake up, Valkenberg won't survive. Donations are welcome at um, err...

Ad 3: Delusions

VO 1: I used to have delusions of grandeur but now I'm just going to save the world.

VO 2: You can save Valkenberg by making a donation at any Standard Bank.

"In order to obtain a reaction from the public we decided to break down

the barriers by using humour. Mental illness is not a laughing matter, but it is a common problem that a large percentage of our population has to deal with. We decided to laugh at the situation in a positive light, instead of ignoring it," say copywriter, Sasha Saunders.

Thanks to the campaign, Safmarine has taken a big interest in Valkenberg and have plans to gather key decision-makers of large corporations in Cape Town and encourage them to help support the hospital.

Valkenberg appreciates the positive response from the public so far, and believe that anyone not interested in donating to the hospital must be crazy.

Further information from Nikki Levy, Bosman Johnson FCB, tel (021) 797-3702, fax (021) 762-2747, e-mail nikki@bjvvn.co.za.

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Respirator vs surgical mask: how to reduce risks

Tuberculosis (TB) is back and in a bigger and far worse way than ever. Since 1985, there has been a steady growth in the number of new TB cases reported annually, some of which are displaying characteristics of multi-drug resistant (MDR) strains of *Mycobacterium tuberculosis*. Also of particular concern are people infected with HIV who are at high risk of developing active tuberculosis.

The traditional form of protection from air borne contaminants for health care workers has been the surgical mask. However, the filtration properties of the surgical mask may not be adequate in certain cases, such as areas where there is a high concentration of infectious droplets in the air. The surgical mask also lacks the proper face fit required to seal the wearer's nose and mouth against



3M 1860 respirator

contaminants. Acceptable for most health care applications, its use should be queried in certain areas such as infection control.

A respirator has been designed to provide effective air filtration combined with a face fit to prevent

penetration of contaminants. The use of a N95 type respirator is recommended by the Occupational Safety and Health Administration in the USA and meets the Centres for Disease Control (CDC) guidelines for preventing the transmission of TB. A N95 respirator, such as the 3M 1860 respirator, provides a filter efficiency of at least 95% against particulate matter down to a size of 0.3 microns (μm). The particle size of the Droplet nuclei containing *M tuberculosis* has been estimated to be between 1 μm and 5 μm .

The 3M 1860 respirator can be re-used until the filter becomes damaged, breathing becomes difficult or until the respirator becomes contaminated with blood or other body fluids. The unit meets the FF2 South African standards, is inexpensive, features a soft inner shell for user comfort and is resistant to fluids.

Enquiries: Ina Bothma, Health Care Division, 3M, tel (011) 922-2219, or Faith Molotsi, Health Care Division, 3M, tel (011) 922-2466.

Guidelines for authors

Contributions

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.

Authors are requested to inform the Editor about submissions to other journals and are required to transfer copyright of their articles to the Journal when accepted for publication.

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Articles may be submitted in the following categories:

Original and Review Articles: Should follow the format of: introduction, methodology, results, discussion and references. Less than 2 500 words.

Original and review articles must include a short abstract of less than 150 words and will be refereed. Manuscripts will be submitted to referees as confidential without naming the author, and referees shall remain anonymous.

Opinions or short reports: These are short reports, less than 1000 words.

Case Studies: Less than 1000 words

Letters to the Editor: Less than 400 words.

Authors are solely responsible for the factual accuracy of their work and for ensuring their work does not infringe copyright.

Preparation of Manuscripts

Manuscripts should be typed double spaced, using only one side of the paper. Number pages consecutively and leave wide margins. A separate title page should contain the title, the author's full names, and details relevant to correspondence. References should also be listed on a separate page. If possible, a word count should be included and diskettes are welcomed and will be returned.

Authors should submit one original article and two copies of each manuscript. Scientific measurements should be expressed in S.I. units. Abbreviations and acronyms should only be used if absolutely necessary and must be defined on first use.

Illustrations, tables and graphs should be submitted on separate sheets as black and white prints. They should be clearly identified, tables should carry Roman numerals, I, II, III etc. and illustrations Arabic numerals 1, 2, 3 etc. X-ray films should not be forwarded, but glossy prints submitted.

References should be set out in the Vancouver style and only approved abbreviations of journal titles should be used.

Journal references, e.g.

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.

Book references, e.g.

1. Thompson L.A history of South Africa. Newhaven and London: Yale University Press, 1990.

They should be inserted in the text as superscript numbers and listed at the end of the article in numerical order (not alphabetically). The accuracy of references is the author's responsibility. 'Personal communication' and 'unpublished observations' may be cited in the text, but not in the reference list.

Alterations to proofs must be limited to misprints or factual errors. Major alterations or new material cannot be accepted. Proofs not returned within two weeks will be regarded as approved.

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The GA2002, is reliable and simple with repeatable functions which are imperative for any vibration measurement. This meter will instantly store results with a single key stroke, providing a vast range of applications from machine maintenance to construction vibration.

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Further information from Castle Instrument Rentals, Roberts Safety & Medical Products, tel (031) 72-7213 or fax (031) 72-7310.


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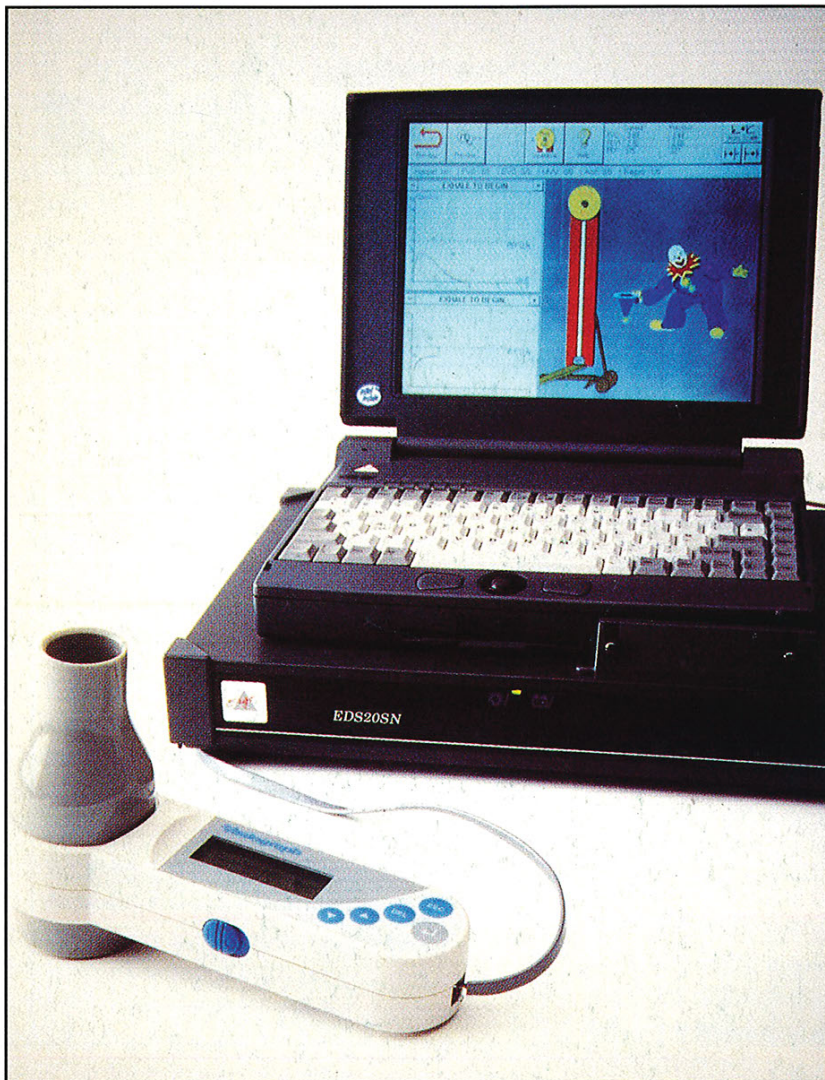
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