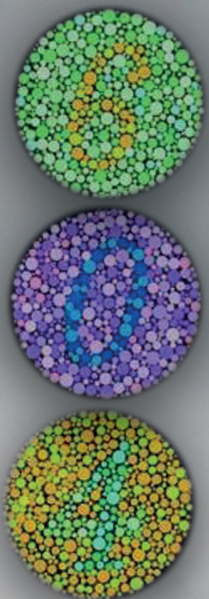


Occupational health

Vol 22 No 3 MAY/JUNE 2016

SOUTHERN AFRICA



Ethics in occupational health practice

An update on diagnostic tests for colour vision defects in individuals working in the aviation industry

Sick leave and work absence Part 1: Can sick leave be harmful to patients?



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Subscriptions:
Members: R297.00 per annum (includes VAT)
Non-members: R417.00 per annum (includes VAT)

Publisher:
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This journal is on the Department of Higher Education and Training's list of Approved South African Journals, and authors qualify for a subsidy for their affiliated tertiary institutions. It is also listed in African Index Medicus.



**Gill Nelson,
Editor-in-Chief**

There is a huge sadness in the offices of Technique Publishing that many others are also feeling – publishers, editors and regular contributors – as we mourn the loss of Jenny Gent after a sudden illness in April. Jenny was wholly responsible for the production of *Occupational Health Southern Africa* in the Durban office, from communicating with authors and other contributors, to formatting and laying out the pages, reminding everyone about deadlines, sending the hard copies to subscribers, assisting with website queries and complaints, and everything all imaginable. To me, she was a rock of support from the moment I became an editor in 2011. I echo all the sentiments on page 3, and my sincere condolences go to her husband, Mr Pieter Gent, her daughter, Diane, son, Roy, and their families, and her colleagues.



Jenny would have wanted the Journal to be published as usual, and that is what we have done. We have three Back-to-Basics papers in this issue – somewhat unusual – but all cover relevant and important topics. The importance of ethics in occupational health can never be over-emphasised, and Claudina Nogueira has written a comprehensive review on the topic. For those interested, the Uganda National Council for Science and Technology is hosting the 8th Annual National Research Ethics Conference in Kampala in July (see Events Page for more detail). An interesting problem in some workplaces that is seldom addressed is that of colour vision defects. Prissila Makunyane provides information about the different types of colour vision defects and diagnostic tests

From the Editor . . .

available, with reference to the aviation industry. Grobler and Lapere address the complexity of certifying sick leave, and explain how excessive sick leave can ultimately cause ill health and other adverse outcomes.

In the Society pages, SASOHN discusses the 90-90-90 global strategy to tackle treatment inequalities within the approach to HIV and AIDS; SAIOH provides important information for members regarding professional certification; and SASOM talks about recent meetings and ongoing collaborations, and pays tribute to Jenny Gent. Prof. Mary Ross, occupational health practitioner, researcher and leader, well-known to many of you, features in an interview with the MMPA.

On the international front, the Occupational Safety and Health Administration (OSHA) has, after 40 years, issued a more stringent rule on how much crystalline silica exposure is allowed on worksites.¹ The rule is effective from 23 June 2016 but timeframes for complying differ by industry, from one to five years. Amongst other things, the rule reduces the permissible exposure limit (PEL) for respirable crystalline silica to 50 $\mu\text{g}/\text{m}^3$, averaged over an 8-hour shift.

This comes too late for the thousands of gold mine workers in South Africa who were exposed to crystalline silica in the past. However, the recent class action victory in the South Gauteng High Court² means that compensation for disease should be coming their way soon, at least for those who are still alive (see Letter to the Editor on page 4 for more information).

Still on the topic of exposure in the workplace – the General Requirements for the Performance of Procedures for the Measurement of Chemical Agents (ISO/TC 146/SC 2) was updated on 10 May 2016. The Standard applies to gasses, vapours and airborne particles.

Mid-year examinations are upon us, and I wish those of you who are writing (as well as those who have set and will be marking the exam papers) good luck. Perhaps the holidays will allow you the much-needed time to finish writing a paper for submission to the Journal.

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2. Lewis P. GroundUp: Understanding the silicosis judgment. Daily Maverick, 16 May 2016. Available from: http://www.dailymaverick.co.za/article/2016-05-16-groundup-understanding-the-silicosis-judgment/#.V0bVH_I974Y (accessed 26 May 2016).

Tribute to Jenny Gent

I was privileged to know and work with Jenny over many years. First, during the time that I did proofreading and circulation tasks for Technews while rearing my children. Then later, when I was Editor of this journal from 2006 to 2012, during which time Jenny was the main Technique team member responsible for helping with the journal publication. This involved the conversion of content for publishing, layout, proofreading, getting approval of final proofs from authors, interaction with advertisers, correspondence, website maintenance, circulation, archiving, and many other tasks.

Jenny was a remarkable person – one who worked quietly, selflessly, efficiently and effectively, and who showed great intelligence, integrity, sincerity and compassion. Her commitment to the journal was readily apparent – she cared

about it! She respected our societies and their members, and treated them accordingly. Always to be relied upon, she would spot potential problems, find solutions and take pleasure in doing the work well. In essence, she was pivotal to our journal's success, and will be greatly missed.

Jenny's same good qualities were so evident when she talked of her family. They gave her life meaning – and her love for them was strong and unwavering. She demonstrated this during the times that her sisters and aunt were ill, going to great lengths to help in countless and often imaginative ways. And they returned that love, by creating poignant and happy experiences. She was immensely proud of her family's achievements and would do all she could to support them. Jenny has left a legacy and an example of love that will live on in all who had the honour of knowing her.

Linda Grainger

Jenny Gent – loved and missed by so many

“What a shock. I am lost for words. She was one of the nicest people to work with...”

“□ I had several, all positive, experiences in the final stages of getting material ready for publication. With looming printing deadlines Jenny was always the professional. Never did I experience anything but “polite calmness”. I think she was blessed with an “eagle-eye”, because she was so thorough in sorting out the proofs.”

“... such a tragedy! ... dear Jenny was always so kind and thoughtful and always wanted to know how I was getting on, often asking after my son and sister. She was such a pleasure to work with and never missed anything.”

“□ she truly was one of the most caring loving people. The joy she anticipated and enjoyed at Easter making an egg hunt for her grandson was so special... what a void she will leave on this earth.”

“She was indeed such a wonderful person to work with. I have fond memories of sitting with her in the “gardens” at Technique and as always discussing the next edition of the journal. She will be missed and will leave big shoes to fill.”

“Jenny took tremendous pride in the journal, and I know it gave her great professional satisfaction being instrumental in its production.”

“The Occupational Health SA journal and fraternity have lost a very supportive ally of the discipline. It was a pleasure to have known and worked with Jenny over so many years.”

“Jenny was such a friendly and competent person!”



Letter to the Editor

Silicosis class action

Georgina Jephson

Richard Spoor Inc. Attorneys, PO Box 303, Parklands, 2121, South Africa. e-mail: georgina@richardspoorinc.co.za

In a ground-breaking judgment on Friday 13 May 2016, the Johannesburg High Court certified a class action. The effect of the ruling is that tens of thousands of gold mineworkers with silicosis and TB living throughout southern Africa may bring damages claims on a class basis against 30 gold mining companies.

The court made no findings of liability of the gold mining companies, nor did it make any compensation awards. However, the judgment is significant in that it is the largest class action law suit in South Africa to date.

We (Richard Spoor Inc. Attorneys) have been appointed as the legal representatives of the silicosis class, together with the Legal Resources Centre and Abrahams Kiewitz. Abrahams Kiewitz has been appointed as the legal representative of the TB class.

The gold mining companies have three weeks to decide whether to appeal the decision. Until we know whether the decision will be appealed, it is not certain what the next steps in the litigation will be. However, the court has ruled that, unless you specifically opt out, all mineworkers with silicosis (including silico-tuberculosis) or TB, and the dependants of those who have died as a result of silicosis or TB, are members of the two classes in the class action.

Anyone who is diagnosed with silicosis may contact Richard Spoor Attorneys on 011 482 6081, Abrahams Kiewitz on 021 914 4883, or the Legal Resources Centre on 011 836 9831 for more information. Those who are diagnosed with TB only may contact Charles Abrahams on 021 914 4883.

Upcoming events

NATIONAL MEETINGS

DATE	MEETING	TOPIC	PLACE	MORE INFORMATION
4 – 6 Jul 2016	8th National Research Ethics Conference	Respecting Research Participants	Serena Hotel, Kampala, Uganda	E-mail: w.badanga@uncst.go.ug Website: http://www.uncst.go.ug
2 - 3 Sep 2016	MMPA 19th Annual Conference	TBA	TBA	E-mail: candiceu@mpas.org.za Website: www.mmpasa.org/wp
19 - 22 Sep 2016	PHASA Conference	Achieving the sustainable development goals: Transforming public health education and practice	East London	E-mail: deon.salomo@mrc.ac.za
26 - 28 Oct 2016	SAIOH Annual Conference	TBA	Mpumalanga	E-mail: info@saioh.co.za Website: www.saioh.co.za
2 - 4 Nov 2016	SASOHN 36th Annual Conference and AGM	Cruising the 7 Cs	Port Elizabeth	E-mail: office@sasohn.co.za Website: www.sasohn.co.za

INTERNATIONAL MEETINGS

DATE	PLACE	MEETING	MORE INFORMATION
18 -19 Jul 2016	Singapore	5th Annual Global Healthcare Conference (GHC 2016)	E-mail: secretariat@globalhc-conf.org Website: http://eventegg.com/ghc-2016/
31 Aug - 2 Sep 2016	Basel, Switzerland	44th International MEDICHEM Congress	E-mail: martin.kuster@novartis.com Website: http://www.medicchem.org/
5 - 7 Sep 2016	Barcelona, Spain	25th EPICOH Conference X2016	E-mail: epicoh2016@mondial-congress.com Website: www.epicoh2016.org
6 - 8 Sep 2016	Barcelona, Spain	8th International Conference on the Science of Exposure Assessment in Epidemiology and Practice	E-mail: epicoh2016@mondial-congress.com Website: www.epicoh2016.org
14 - 16 Sep 2016	Brussels, Belgium	International Conference on Sustainable Employability - Building Bridges between Science and Practice	E-mail: philippe.kiss@securex.be Website: http://www.incose.eu
19 - 21 Sep 2016	Manchester, UK	Occupational and Environmental Exposure of Skin to Chemicals (OEESC) Conference	E-mail: conferences@bohs.org Website: http://oeesc2016.org/
19 - 21 Sep 2016	Wuppertal, Germany	Work, Age, Health and Employment - Evidence from Longitudinal Studies - Interdisciplinary Conference	E-mail: wahe2016@uni-wuppertal.de Website: http://wahe2016.uni-wuppertal.de/
25 - 28 Sep 2016	Amsterdam, The Netherlands	4th WDPI Conference, Work Disability Prevention Knowledge	E-mail: events@vumc.nl Website: http://www.wdpi2016.org/
29 - 30 Sep 2016	Singapore	2nd Singapore International Public Health Conference & 11th Singapore Public Health and Occupational Medicine Conference 2016	E-mail: siphc@ams.edu.sg Website: http://www.phconference.org/

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Ethics in occupational health practice

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C Nogueira

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ABSTRACT

Good occupational health practice requires adherence to ethical guidelines which have been developed over time and have originated from various sources. In the process of addressing and rectifying the issue of occupational risks, the moral aspects cannot be avoided.

Ethics pertaining to the broad field of occupational health remains an ongoing interaction between many partners, and a subject with no clear boundaries and many dilemmas, requiring multi-disciplinary cooperation, consultation and participation.

In the context of the ever-changing world of work, this paper provides an overview of the definition and interpretation of ethics; the basic principles of biomedical ethics; the role played by codes of ethics, with special emphasis on the International Code of Ethics of the International Commission on Occupational Health; ethics with particular reference to occupational health practice; and the emerging issues, globally and in regional settings, that continue to present ethical challenges to occupational health professionals.

Keywords: ethics, codes, occupational health, professional conduct, ethical dilemmas

INTRODUCTION

The ever-changing world of work, particularly in terms of economic, social, environmental and health aspects, has given rise to many new challenges for workers and their representatives, employers, managers, health service providers, government authorities, professional associations and social partners alike. This scenario has called for a clear view on, and a continual assessment of, the ethics of occupational health professionals/practitioners (OHPs) and standards in their professional conduct. Particularly in a regional context, the protection and promotion of the health and safety of working populations across multiple sectors in Africa requires a much more prominent role to be played by ethics as it relates to the disciplines and professions that comprise occupational health (OH) practice.

There are many definitions of "ethics", for example:

- a system of moral principles
- the rules of conduct recognised in respect to a particular class of human actions or a particular group, culture, profession or individual, e.g. medical ethics
- the branch of knowledge dealing with moral principles
- the branch of philosophy dealing with values relating to human conduct, with respect to the rightness and wrongness of certain actions, and to the "goodness" and "badness" of the motives and ends of such actions
- the moral fitness of a decision or course of action

Although ethics is closely related to law and incorporated into law in various countries, ethics and law are not alike or interchangeable. In the South African context, aspects of ethics of health have been included in some legislation,

e.g. in the National Health Act (Act 61 of 2003)¹ and in the Bill of Rights of the Constitution of 1996;² in many respects, ethics imposes higher standards than legislation.³ Law and ethics have common characteristics but are not identical. Some behaviours that are legal may be unethical; nearly all behaviours that are illegal are unethical.

There are four basic principles of medical ethics, which have been provided as a framework for addressing ethics issues and resolving dilemmas. These four principles, attributed to Beauchamp and Childress,⁴ are accepted as being the most influential in the field of medical ethics, although there are other approaches to professional ethics (not considered in this paper). Each of the aforementioned principles addresses a value that arises in interactions between service providers and patients. These principles are to be judged and weighed against each other, with attention given to the scope of their application. They address the issues of fairness, honesty and respect for fellow human beings.

- *Respect for Autonomy*: Respecting the decision-making capacities of autonomous persons; enabling individuals to make reasoned informed choices. This principle is the basis of informed consent and respect for confidentiality
- *Beneficence (doing good)*: The healthcare professional should act in a way that benefits the patient. This includes the balancing of benefits of treatment against the risks and costs, and acting in the best interest of the patient
- *Non-maleficence (preventing harm)*: "First, do no harm" is the foundation of medical ethics. Avoiding the causation of harm; the healthcare professional should not harm the patient. All treatment involves some harm, even if minimal,

but the harm should not be disproportionate to the benefits of treatment

- **Justice:** Distributing benefits, risks and costs fairly; the notion that patients in similar positions should be treated in a similar manner (fairness and equality). The actions and ethical choices of the healthcare providers must be rational in every situation

Other values that are part and parcel of the aforementioned principles are:

- Respect for persons – the patient, and the person treating the patient, have the right to be treated with dignity
- Truthfulness and honesty – these values should form the basis of trust in the professional relationship between patients and practitioners. The concept of informed consent has increased in importance and become absolutely essential since the historical events of the Nuremberg trials⁵ and the Tuskegee syphilis experiment⁶ (during the Second World War, and in Alabama from 1932 to 1972, respectively), where doctors and scientists conducted cruel research and atrocious tests on human subjects without their knowledge or informed consent

Respect for persons and truthfulness are positive values when assessing and resolving conflicts. It is very common for OHPs to encounter ethical dilemmas in their daily tasks as these issues arise in many of their work scenarios, such as medical surveillance and monitoring, entrance medical examinations, worker rehabilitation, risk assessment, and health hazard evaluation and communication.⁷

CODES OF ETHICS

Ethical codes in healthcare provide norms to standardise the interactions between patients and their practitioners, and between fellow practitioners, thereby providing a framework and guidelines for morality in healthcare and health practice.³

Codes of ethics are means for attaining moral awareness and high ethical standards in practice, and competence in making value-based decisions. Codes act as forerunners of quality and professional standards, promotional instruments for participant organisations, and tools in training programmes. Codes provide a “common ground for developing professional excellence in a changing world”.⁸ However, codes of ethics are “commonly aspirational and well intentioned, but most often not enforceable by law, and the focus in most codes is set on individual health professional conduct, and less on the conduct of organisations”.⁷

Historically, Western medical ethics can be traced to guidelines on the duty of physicians in antiquity, such as the Hippocratic Oath. The first code of medical ethics, *Formula Comitis Archiatrorum*, was published in the 5th century.⁹ In the medieval and early modern period, valuable contributions were found in the Catholic, Islamic and Jewish intellectual traditions and teachings. The first modern code of medical ethics is attributed to Thomas Percival, an English

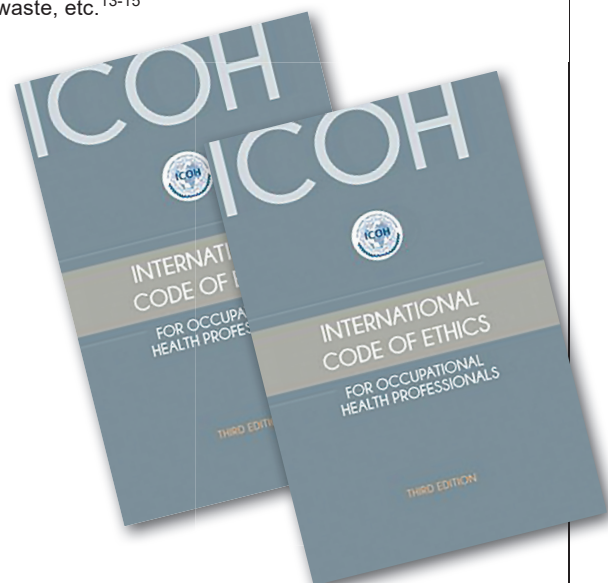
“An essential foundation in good OH practice is professional ethical awareness . . .”

physician and author who formulated the code in 1794, and wrote an expanded version in 1803 in which he coined the expressions “medical ethics” and “medical jurisprudence”.¹⁰

The World Medical Association (WMA) is the official professional body tasked with ensuring that the moral and ethical values protected in the Hippocratic Oath and its modern day version, the Declaration of Geneva, are put into practice in medicine. Although the codes and guidelines from the WMA are specific for medical practice, the scope is broad enough to be applicable to the various categories and disciplines of health practice.³ To establish and promote the highest possible standards of ethical behaviour and care by physicians, the WMA has adopted numerous policies that are recognised internationally as the global ethical standard for the topics they address.¹¹

Since the 1970s, the growing authority of ethics in contemporary medicine can be seen in the increasing use of Institutional Review Boards and Research Ethics Committees to evaluate experiments on human subjects, the establishment of hospital ethics committees, the expansion of the role of clinician ethicists, and the integration of ethics into many medical school curricula.¹²

The Health Professionals Council of South Africa (HPCSA) is a statutory body that has published ethical codes and guidelines for the healthcare professionals. These guidelines form an integral part of the standards of professional conduct against which a complaint of professional misconduct will be evaluated. The guidelines, obtainable from the HPCSA website, are available in a number of booklets, covering a range of ethics topics, including good practice, patient rights, ethical guidelines for health researchers, informed consent, patient records, reproductive health, good practice with regard to HIV, management of healthcare waste, etc.¹³⁻¹⁵



ETHICS AND OCCUPATIONAL HEALTH PRACTICE

The main concern of OHPs is the protection and improvement of the health of working populations. The main objectives of the OH disciplines are to:

- protect and promote the health at work of all people, by encouraging the adaptation of work to people, and of each person to his/her work (fitness for work)
- promote work systems and environments that minimise risks to the health and safety of the working population
- encourage work cultures which enhance health and wellbeing in the broadest sense, both individually and collectively

An essential foundation in good OH practice is professional ethical awareness and conduct in relation to customers, consumers, OHPs and other stakeholders in providing services, and in relation to professional responsibilities and work tasks.¹⁶

A wide range of disciplines is concerned with OH since it is at an interface between technology and health, involving technical, medical, social and legal aspects. OHPs include OH physicians and nurses; labour inspectors; occupational hygienists; occupational psychologists; and specialists involved in ergonomics, rehabilitation therapy, accident prevention and the improvement of the working environment, as well as in OH and safety research. The competence of these OHPs should be mobilised within the framework of a multi-disciplinary team approach.

“Some behaviours that are legal may be unethical; nearly all behaviours that are illegal are unethical”

Many other professionals from a variety of disciplines, such as chemistry, toxicology, engineering, radiation health, epidemiology, environmental health and protection, applied sociology, health and social insurance, and health education, may also be involved in OH practice.

The Code of Ethics of the American College of Occupational and Environmental Medicine (ACOEM) applies to health professionals who are engaged in the practice of occupational or environmental medicine, and addresses distinctive ethical issues that are characteristic and recurring in the practice of occupational and environmental medicine.¹⁷

The latest edition of Guidance on Ethics from the UK Faculty of Occupational Medicine (FOM)¹⁸ was published in December 2012. The edition is titled ‘Ethics guidance for occupational health practice’ as opposed to ‘Ethics guidance for occupational physicians’ which was the title of previous editions. This reflects the fact that, in the UK and many other countries, including South Africa, OH is practiced, in the main, by a multi-disciplinary team rather than a physician working independently, and it is expected that non-medical members of this team should be bound by the same ethical codes and guidelines.

The South African Society of Occupational Medicine (SASOM) has developed an ethics guideline for OHPs, which is available from the SASOM office.¹⁹

The objective of the Code of Ethics of the Southern African Institute for Occupational Hygiene (SAIOH), for the professional practice of occupational hygiene, is to set standards of professional and ethical conduct for certified members of SAIOH to enable them to act professionally and with integrity, at all times, for the benefit of workers, the public, employers, clients and the environment.²⁰ SAIOH’s Code of Ethics has been adapted from the Code of Ethics of the International Occupational Hygiene Association (IOHA) which is intended to cover all occupational/industrial hygiene associations that are members of IOHA.²¹

ICOH INTERNATIONAL CODE OF ETHICS FOR OCCUPATIONAL HEALTH PROFESSIONALS

One of the most widely accepted and used codes, which is distinct from the codes of ethics for medical practitioners, is the International Code of Ethics for Occupational Health Professionals, of the International Commission on Occupational Health (ICOH).²² Being the oldest scientific association in the field of OH, founded in 1906, and with more than 2000 members in 93 countries, ICOH is an NGO recognised by the United Nations, which has a close working relationship with the International Labour Organization and the World Health Organization.

The main reasons for the development of the Code by ICOH are:

- An increased recognition of the complex responsibilities of OH and safety professionals towards workers, employers, general society, public health, labour, social security, and judicial authorities
- A global increase in the numbers of OH and safety professionals brought about by the establishment of OH services (mandatory and voluntary)
- The broad field of OH requires a multi-disciplinary approach for successful implementation, incorporating various professionals from many different fields²²

The Code applies to OHPs and OH services across sectors (acting in their individual capacities and as part of organisations providing services to clients and customers) tasked with responsibilities in enterprises, and in the public and private sectors, in terms of safety, hygiene, health, medicine and the environment, in relation to the workplace.

Since its inception, the Code has been adopted and implemented across the globe by various bodies and organisations, e.g. the governments of Argentina and Italy, in UN organisational statements, and in the private sector.

The objectives of the most recent review of the Code (third edition, 2014) were primarily to strengthen the existing guidelines and the practical application of the Code; to provide clarity on its interpretation; to expand applicability to OH research; to increase the relevance for the different

types of working populations across various sectors; and to ensure the Code would be a valuable training tool for OHPs. As part of the update of the Code, an African Working Group (AWG) was affiliated to the ICOH Code Review Group in 2010. Some of the key issues identified by AWG during the review process, in terms of impacts on ethical OH practice in the African context, were diversity, language, stigma and power in the workplace, the place of autonomy in negotiating consent in settings in the developing world, consequence of globalisation, and the weak distinction between workplace and domestic exposures in many African communities. In addition, many workers are engaged in the informal sector which falls outside of any formal regulations.^{23, 24}

The Code is a living document and continues to be widely referred to in OH and related fields, including the development of national and organisational codes, as well as for educational purposes. Although the principles which were laid down in the first edition of the Code remain valid today, these require ongoing updating and rephrasing to reinforce their relevance in the changing environment where OH is practiced.

The following basic principles underpin the Code:

- The purpose of OH is to serve the protection and the promotion of the physical and mental health and social wellbeing of workers (individually and collectively)
- OH practice must be performed according to the highest professional standards and ethical principles
- OHPs must contribute to environmental and community health
- The duties of OHPs include protecting the lives and health of workers, respecting human dignity, and promoting the highest ethical principles in OH policies and programmes
- These duties must include integrity in professional conduct, impartiality, and the protection of the confidentiality of health data and of the privacy of workers
- OHPs are experts who must be afforded full professional independence in the execution of their functions
- OHPs are expected to acquire and maintain the necessary competence for their duties
- OHPs require conditions that will allow them to carry out their tasks according to good practice and professional ethics

The Code is intended to serve as a guide, and to set a reference level for the assessment of performance of OHPs; be used in conjunction with other codes; to promote teamwork, cooperation and multi-disciplinary approaches in OH; and to provide a framework for documenting and justifying departures from accepted practice. The Code is not intended to cover all implementation areas or aspects of conduct between OHPs and their working partners, nor to replace other codes and infringe on professional ethics that might be specific to certain professions (e.g. medicine).

Some examples of the duties and obligations of OHPs

are described below; more examples and extensive information are available in the Code:²²

- *Knowledge and expertise* – OHPs must strive to be familiar with the work processes and the working environment, to visit workplaces, and to consult workers and management. OHPs need to remain well informed in the scientific and technical aspects of occupational hazards and the minimising of the relevant risks
- *Information, communication and training* – OHPs must contribute objectively and intelligibly to the information for workers and management on the hazards to which they might be exposed. In communicating about the risks, OHPs are required to address issues such as language barriers and cross-cultural differences
- *Health surveillance* – The OH objectives, methods and procedures of health surveillance must be clearly defined, and the surveillance carried out with informed consent from workers. The relevance and validity of these methods and procedures should be consistent with available scientific evidence and relevant good practice
- *Biological monitoring and investigations* – Preference must always be given to non-invasive methods and examinations that do not involve any danger to the health of the workers concerned. Biological tests must be chosen for their validity and relevance for the protection of the health of the workers concerned, with due regard to their sensitivity, specificity and predictive value
- *Protection of community and environment* – With a view to contributing to environmental and public health, OHPs must initiate and participate in identifying, assessing and advising for the purpose of prevention in terms of occupational and environmental hazards which might result from operations or processes in the workplace
- *Contribution to scientific knowledge* – OHPs must report objectively to the scientific community and to the public health and labour authorities on new or suspected occupational hazards, and on the associated new and relevant preventive methods. OHPs have a duty to make their research results publically available. They are accountable for the accuracy of their reports, and must conduct their research work on a sound scientific basis and by strictly following the ethical principles relevant to health and medical research

Similarly, some of the conditions of execution of the functions of OHPs are described below; more information is available in the Code:²²

- *Competence, integrity and impartiality* – OHPs must always act primarily in the interest of the health and safety of workers, based on scientific knowledge and technical competence. OHPs must refrain from any advice, judgement or activity which might endanger the trust in their integrity and impartiality
- *Professional independence* – OHPs must, under no circumstances, allow their judgement and statements to be influenced by any conflict of interest, particularly when

“Codes of ethics are means for attaining moral awareness and high ethical standards in practice and competence in making value-based decisions”

advising the employer, the workers or their representatives in the undertakings on occupational hazards and situations which present evidence of danger to health and safety

- *Equity and non-discrimination* – All workers should be treated in an equitable manner without any form of discrimination in terms of their condition, gender, social aspects, or convictions. OHPs must build a relationship of trust, confidence and equity with the parties to whom they provide occupational health services
- *Medical confidentiality* – Individual medical data and the results of investigations must be recorded in confidential medical files that are to be kept secured under the responsibility of the OH physician or the OH nurse; the information in the medical files can only be used for OH purposes. Access to medical files and their transmission and release are governed by national laws and regulations on medical data, and relevant national codes of ethics for health professionals and medical practitioners
- *Promoting ethics and professional conduct* – OHPs must seek the support and cooperation of employers, workers and their organisations, as well as of the competent authorities, professional and scientific associations, for implementing the highest standards of ethics in OH practice. OHPs must undergo a professional audit of their activities, to ensure continuous improvement of professional performance

Professional codes of ethics aim at guiding and regulating professional conduct. General challenges in using these codes are related to interpretation, multiplicity of codes, problems of their legalisation, and the drawbacks caused by their inability to resolve ethical dilemmas.⁸

Many areas continue to be critical in terms of ethical dilemmas faced by OHPs, such as confidentiality and disclosure of information, genetic screening and hazard communication.²⁴

In certain instances, dual loyalties present particular challenges to maintaining conventional adherence to confidentiality. This happens when confidentiality may not apply (e.g. when data are used for audit and quality control purposes), or when confidentiality may be broken (e.g. at the patient's request and with informed consent, or in the patient's best interest). Sometimes, whistle-blowing is necessary, e.g. when there is a need to correct unethical behaviour, or when OH physicians cannot conceal information which is necessary to protect the health and safety of workers.²⁴ In the case of genetic screening, many questions arise related to need, relevance, accuracy, acceptability and consequence.^{25,26} In terms of hazard communication, various ethics codes speak to the issue of the OHP disseminating information to affected employees, e.g.

the ICOH Code calls for “engagement with workers and their representatives in providing unbiased information on hazards and risk”.²² However, there is very limited guidance on what level of detail should be provided, what information should be included, and how it should be presented and interpreted.²⁴

In the face of these dilemmas, ethical codes alone do not suffice. They need to be supplemented by other processes, such as peer review and audit, quality assurance, and appropriate continuing medical education.²⁴

ETHICS IN OCCUPATIONAL HEALTH RESEARCH

OH research, by its very nature, i.e. research on workers as a vulnerable group, should strive to be as ethical as possible. The research needs to meet international norms and practices, and also local requirements. For OH research, the four basic principles of medical ethics have a special significance because workers are often vulnerable or potentially coercible populations. In addition, researcher and scientific integrity are further considerations to ensuring ethical research practices.²⁷ The ethics of medical research come into question most obviously where investigations entail risks or disadvantages to individual participants that are not clearly outweighed by associated personal benefits.²⁸ “In order to support health research in developing countries that is both relevant and meaningful, the focus must be on developing health research that promotes equity and on developing local capacity in bioethics.”²⁹

CONCLUSION

Ethical issues, when responded to appropriately, can lead to an enhancement of professional reputation, personal credibility and patient service. When responded to inappropriately, they may lead to a disciplinary inquiry into the conduct of the OHP. There are many learnings about ethics and the advantages of ethical programmes. Many OHPs face ethical dilemmas in the execution of their daily duties, and need the experience and insight to address these, with fair and moral outcomes for all concerned. The benefits of ethical practice and decision-making are available not only to OHPs and the allied professionals, but also to employers, practitioners, managers and workers involved in OH and safety practice.³⁰

Many new complexities have arisen, brought about by legislation in relation to ethical duties to incapacitated or disabled employees, or medical boarding, for example. Practical frameworks for ethical decision-making can be used as aids in recognising these ethical dilemmas and for responding appropriately.^{31,32}

Quite often, the practical aspects of OH place OHPs in difficult positions in terms of conflicts of interest.³³ The ethics guidelines available to OHPs today tend to not address the issue of dual loyalties; hence, human rights standards have served as starting points for developing recommendations for individual professional conduct, in combination with parallel accepted methods, to deal with the contention of dual obligations.³⁴

"Within the occupational environment, the employer/employee relationship, by its very nature an unequal, power-biased one, impacts all activities. Unless the professionals responsible for delivering OH services to workers take due care, respect for the autonomy of their patients is at risk. Patient autonomy in occupational medicine is relative rather than absolute but ought to be afforded due respect."³⁵

A moral standard should be that the practice of OH be more reliant on a firm culture of prevention. The best case scenario would be for codes of ethics to integrate and harmonise the needs of individuals and communities in stipulating ethics guidelines. "There is a need to consider an African Charter on Bioethics as a complementary and strengthening addition to existing codes for the region."³⁶

DECLARATION

Claudina Nogueira is a member of the ICOH Task Group on Ethics and Transparency, and Editorial Group of the third edition of the ICOH Code of Ethics; she declares no conflict of interest.

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LESSONS LEARNED

Ethics in Occupational Health:

- Is an interaction with many partners, in an inclusive manner
- Is a subject with no clear boundaries, and many dilemmas
- Involves more than ethical guidelines and codes, for good practice
- Is a dynamic process involving the OH community and organisations concerned with safety, health and the environment, as well as worker and employer organisations
- Requires multi-disciplinary cooperation, consultation and participation
- Calls for ongoing updating and rephrasing
- Remains relevant in the changing OH environment (in line with changes in working conditions, social demand, societal political and social developments, globalisation, technical advances, etc.)

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An update on diagnostic tests for colour vision defects in individuals working in the aviation industry

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ABSTRACT

Background: Colour vision is a function of the visual system and is important in visually-demanding environments such as aviation. There is no international consensus on minimum colour vision standards or on colour vision assessment protocols for use in aviation.

Objective: To provide an update on colour-vision tests approved by the International Civil Aviation Organization and to highlight the importance of choosing appropriate colour-vision tests that can be used with confidence to detect colour-vision deficiency, to classify the type of deficiency involved, and to quantify the severity of loss.

Methods: Available English literature was reviewed. The articles reviewed focused on the colour-vision tests recommended by the International Civil Aviation Organization.

Findings: Comparisons of conventional colour-vision tests revealed the enormous variability and inconsistency of outcomes. Novel techniques of colour-vision assessment referred to as precision tests provide more description of the class and severity of colour vision loss. These techniques go a long way towards establishment of an objective and less variable colour-vision assessment within aviation.

Conclusion: There is a clear need for the development of an internationally recognised system of colour-vision assessment that is less variable and can be used to accurately classify the class of colour deficiency and severity of loss of vision. There is an even greater need to establish the level of residual colour vision that can be classed as safe within well-defined working environments to ensure that applicants who can carry out safety-critical, colour-related tasks, as well as normal trichomats, are not discriminated against on the basis of their colour deficiency.

Keywords: colour-vision defects, colour assessments, precision tests, International Civil Aviation Organization, pseudo-isochromatic tests

BACKGROUND

Human beings and other primates possess three distinct classes of retinal cone photoreceptors. These cones contain either short wave (S), medium-wave (M), or long-wave (L) sensitive photo-pigments. These S, M and L-photopigments have overlapping spectra with peaks of maximal absorption at 420, 530 and 560 nm, respectively. The 30 nm difference between the L and M cones is accounted for by the differences in amino acids positions. The trichromatic colour perception relies on interplay among outputs from these three cone photoreceptor classes.¹

Colour vision is an important attribute and of utmost importance in a visually-demanding work environment such as that in which aviators work. Many of the features and cues in their environment, e.g. cockpit lights, maps, external airborne lighting, air traffic control instruments and radar screens, are colour-coded. Aviation personnel, especially pilots and air traffic controllers, need to be able to distinguish colours on charts and control panels, and on the terrain.

COLOUR-VISION DEFECTS

Colour-vision defects occur when there is a deficiency or absence of one or more of the cone types. There are various grades of colour-vision defects, ranging from mild to severe. Subjects with protanopia, deuteranopia and tritanopia are referred to as dichromats (see Table 1). Subjects with protanomaly, deuteranomaly and tritanomaly are called anomalous trichromats.

Because of the extensive use of colour information in many visual environments, it is of greater interest to establish accurately how reduced colour discrimination can affect visual performance, with emphasis on safety-critical tasks. Comparison of results from conventional tests has revealed enormous variability and inconsistency. Consequently, individuals with mild colour-vision defects failed normal trichromacy tests and were therefore prevented from becoming pilots. Individuals with mild colour-vision defects often fail normal trichromacy tests as do some normal trichomats (individuals with three classes of cone receptors; considered normal), and are therefore prevented from choosing certain

Table 1. Expression of cone-specific pigments in colour vision

Condition	Photo pigment expression		
	L-cone	M-cone	S-cone
Protanopia	Missing	Normal	Normal
Protanomaly	Malfunctioning/defective	Normal	Normal
Deuteranopia	Normal	Missing	Normal
Deuteranomaly	Normal	Malfunctioning/defective	Normal
Tritanopia	Normal	Normal	Missing
Tritanomaly	Normal	Normal	Malfunctioning/defective

career paths. These individuals with mild colour-vision defects might well be able to perform tasks that are critical to safety in aviation, as might normal trichromats, when presented with the same colour signals.²

In an attempt to include these individuals in aviation, some authorities either relaxed the pass limits on colour-vision screening tests or used less demanding colour-vision tests. These attempts compromised the required trichromatic performance in the most safety-critical tasks that are colour-coded.¹

No consensus exists on standard medical requirements and colour-vision protocols in aviation internationally. Conditions under which colour-vision tests are done and the interpretation thereof vary from country to country. Different International Civil Aviation Organization (ICAO)-affiliated countries have set different requirements and use different tests for colour-vision testing. These inconsistencies make it possible for an applicant to fail colour-vision testing in one country and pass it in another.³ These challenges are further compounded by the fact that significant variability in colour vision exists within normal trichromats, with much greater variability in individuals with congenital colour deficiency.²

A question is often asked by aviation personnel as to how severe a colour-vision defect should be before an individual is considered unable to operate safely in the aviation environment. In the text book, Adler's Physiology of the Eye – Clinical Application, the author cautions healthcare workers to not over-diagnose colour-vision defects and consequently exclude individuals from occupations that they could manage.⁴

In the executive summary of the aircraft accident report of Fedex Express flight 1478 in Tallahassee Florida 2002, by the National Transportation Safety Board, one of the cited contributing factors was the first officer's colour-vision deficiency. The safety concerns in this report focused on, among other things, certification of pilots with colour-vision deficiency.⁵ The need for the development

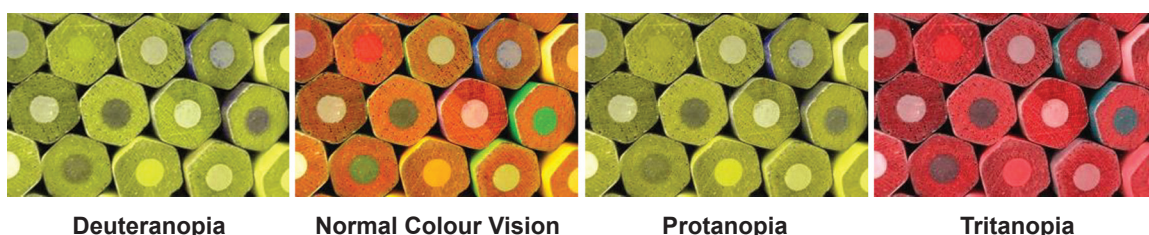
of an internationally accepted, defensible, objective and standardised set of colour-vision tests that can accurately classify and quantify severity of colour-vision defects was addressed by Milburn et al. in their paper entitled "Pilot colour vision – research and recommendations".⁶ Linda Werfelman also addressed the same need in her article that summarised Dougal Watson's study of colour-vision testing in aviation in 78 countries.³ In the eleventh edition of the text book, Adler's Physiology of the Eye, Adler states that performance of a battery of tests is preferable over performing one type of colour-vision test to provide the most complete assessment of colour-vision defects.⁷

The need for a better understanding of colour-vision requirements was also addressed by the United Kingdom Civil Aviation Authority (UKCAA), supported by the United States FAA together with City University London, when this collaborative team embarked on a study to find the minimum colour-vision requirements for modern flight crew, and designed the 'Colour Assessment and Diagnosis' (CAD) test.⁸

The aim of this review is to give an update on colour-vision tests that are approved by ICAO and to highlight the importance of choosing appropriate colour-vision tests that can be used with confidence to detect colour-vision deficiency.

METHODS

The search words 'colour vision', 'colour-vision testing in aviation' and 'ICAO-approved colour vision tests' were used on the Internet. All colour-vision tests that were not approved by the ICAO were excluded from this review. Various ophthalmology text books were also consulted. The literature reviewed was written in English and much was published in peer-reviewed journals. The articles focused on colour-vision test methods that have been developed in the last century and recommended by the ICAO. The advantages and limitations of these tests are addressed



“Colour-vision defects occur when there is a deficiency or absence of one or more of the cone types”

in this paper. Newly-developed precision tests used in assessing colour vision are presented. Recommendations are also discussed.

DISCUSSION

The role of colour vision in aviation

Because of the demands on visual acuity and colour perception, and the increased need for aviation safety and advancement in aircraft technology, the need to accurately classify the class of colour vision defect and to quantify the severity thereof in applicants with colour deficiency is of utmost importance. The complexity of aerodromes also plays an important role in colour-vision testing.

The aims of colour-vision testing are grouped into three broad categories:

- Screening for the presence of a congenital or acquired colour vision deficiency
- Diagnosis of the type and severity of colour vision deficiency
- Assessment of the importance of the colour vision deficiency in a particular vocation, employment or occupation

In aviation, colours that are most widely used in cockpits of both civil and military aircrafts, on the flight deck, in the aircraft cabin, on external airborne lighting, in air traffic control instruments, and on radar screens, are red, green, yellow, orange, blue, cyan, magenta and white.

Three types of tests are used in aviation:

- Pseudo-isochromatic plates
- Colour lantern tests
- Anomaloscopes

The fourth and the most recently developed tests are called precision tests and include the CAD, Waggoner's Computerized Colour Vision Test (Waggoner CCVT), and the Cambridge Colour Test (CCT).

Pseudo-isochromatic plates

These plates are used as screening or primary tests. Pseudo-isochromatic plates are the simplest to use and are based on the principle of colour confusion and colour saturation.⁹ The plates are usually presented in book form and require verbal identification of a coloured figure. The design of plates for yellow-blue (YB) defects is particularly difficult due to large variations among normal observers and the rareness of YB colour defects.

There are many types of pseudo-isochromatic plate tests available; the well-known ones are the Ishihara plates, the Dvorine plates and the American Optical Hardy, Hand and Rittler (AO-HRR) plates. The Ishihara test (IT) is the most widely accepted screening test for congenital

red-green (RG) defects. The IT was first published in 1917 and since then has been reprinted in many different editions.⁸

Limitations of pseudo-isochromatic plates

Errors of interpretation related to pseudo-isochromatic plates may be a result of weak or varying chromatic signals, resulting in poorly defined contours. This form of error can occur if the plates are stored in bright sunlight, resulting in fading of the plate colours. Individual factors, such as advanced age, length of observation time, and the intensity of the background lighting in the examination room, have been reported as causes of errors.⁸

A study aimed at investigating the possibility of attaching appropriate weights to each IT plate as a measure of severity of colour vision defect was conducted in City University, London.⁸ The results demonstrated inconsistencies wherein some colour-deficient individuals passed the test as if they were normal trichromats. Moreover, when no errors were allowed during testing, 19% of subjects with normal trichromatic vision also failed. The conclusion was that IT plates are able to detect very mild colour-vision defects but cannot quantify them.⁸

In a study that compared results obtained from IT and other isochromatic plates, inter-subject variability and inconsistency was demonstrated even though, in principle, the tests are similar.¹⁰

The City University study conclusion is confirmed in Adler's Physiology of the eye – Clinical application: 8th edition. In this book it is stated that RG defects can be easily detected with the pseudo-isochromatic plates, but classification thereof is difficult. It is further stated that the illumination of the plates must be carefully controlled when testing is done.⁴ In the text book, Basic and Clinical Science Course 1991-1992, Section 11 Retina and Vitreous, of the American Academy, it is stated that pseudo-isochromatic plates have unfortunately not always been reliable in detecting acquired colour vision defects.⁹

Lantern tests

These are used to determine whether the subject can detect and correctly name the colours of signal lights. Lantern tests have a high practical value in aviation because they employ supra-threshold signal lights that are used in aviation and maritime environments.^{2,4} Lantern tests, together with anomaloscopes, are classified as secondary tests. The lantern tests that are approved by the ICAO are the Farnsworth Lantern test (falant), the Spectrolux, the Beyne lantern, the Optec 900 test, and the Holmes Wright which has two versions: Holmes Wright A and B.

Anomaloscopes

Anomaloscopes provide the most accurate method to test the severity of colour-vision defects. Anomaloscopes are able to

distinguish between dichromats and anomalous trichromats, and use the principle of colour matching in diagnosing colour-vision deficiencies. The anomaloscope's mode of action is based on the Rayleigh match: a mixture of red and green light sources has to be matched with a yellow light source. Through the matching range, it is possible to discover all different types of RG colour-vision deficiency. Some of the advanced anomaloscopes include the Moreland match (blue-green) to test for tritan defects but these are said to be difficult to use because of the differences in macular pigmentation and the lens colours in individuals. These differences lead to a wide distribution of acceptable settings when testing for blue wavelength detection.⁴

Limitations of lantern tests and anomaloscopes

Adler states that accurate diagnosis of colour-vision defects is difficult because tests that are easy to do can give inaccurate results, whereas the more accurate tests require rigorous training for the examiner.⁴ A study to compare results obtained from testing 55 subjects with colour-vision defects and 24 subjects with normal colour vision was conducted. The IT, the Nagel anomaloscope and three lantern tests were used as Joint Aviation Authorities (JAA)-approved test methods. The results convincingly showed that currently approved tests do not yield consistent results in passing and failing the same individuals. These approved conventional tests do not assess the nature and severity of colour vision defects. There was poor correlation of outcomes of the different tests and they did not give reliable information about safe minimum colour vision required for flying.¹⁰

Precision tests

1. The Colour Assessment and Diagnosis (CAD) Test

The South African Civil Aviation Authority has selected the CAD test as the precision test of choice. This test was enhanced and optimised for use in aviation when the UKCAA supported by the United States FAA, together with City University London, embarked on a project to establish minimum colour vision requirements for commercial pilots. The CAD employs a carefully calibrated visual display and consists of coloured stimuli which are embedded in a background of dynamic luminance contrast noise. The coloured stimulus moves along each diagonal direction and the subject indicates the direction of motion of the coloured stimulus. The CAD test cannot be learnt and has high sensitivity. It provides automatic classification of colour vision deficiencies and separates normal subjects from congenital and acquired colour-deficient subjects, with 100% sensitivity and 100% specificity.²

The CAD has two programmes, namely, the 'fast screening' option and the full RG and YB CAD test programmes which establish the class of colour vision loss and whether the candidate passes (colour-safe) or fails (colour-unsafe) within selected environments.



In the UK, the CAD test is used in occupational medicine for certification in departments of aviation, the fire service, the police and the department of transport for train drivers. The CAD is also used in clinical settings for early detection and monitoring of eye diseases such as sight-threatening diabetic retinopathy. For research purposes, the CAD has been valuable for studies in chromatic mechanisms, ophthalmology and neurology, and in drug trials.

“Comparison of results from conventional tests has revealed enormous variability and inconsistency”

2. Waggoner Computerized Colour Vision Test (Waggoner CCVT)

The Waggoner CCVT is used for colour-vision screening and testing for individuals of all ages and was created by Terrace L Waggoner together with his colour-deficient son, TJ Waggoner. The test provides automatic screening and test results by having the subject look at a coloured test plate and selecting an answer from a table of symbols or numbers that appear after the test plate has disappeared. The length of testing time ranges from two to 17 minutes, depending on whether it is used for screening or diagnostic purposes. Test plates are standardised, allowing each subject the same maximum exposure time, and are randomised each time the test starts, to prevent memorisation.¹¹

3. The Cambridge Colour Test (CCT)

The test was developed by John Mollon and colleagues to determine discrimination ellipses in colour-deficient subjects, by probing chromatic signals along colour confusion lines. Ellipses measured in these individuals are characteristically oriented and enlarged. The test uses the Landolt C stimulus defined by two test colours that are to be discriminated, on an achromatic background.¹²

RECOMMENDATIONS

Milburn and colleagues examined whether individuals with colour vision deficiency, as well as individuals with

“The South African Civil Aviation Authority has selected the CAD test as the precision test of choice”

normal colour vision, could discriminate job sample tests, and made the following recommendations:⁶

- a. The Richmond HRR (4th edition), the Waggoner HRR, the Waggoner pseudo-isochromatic plates, Ishihara Compatible (PIPIC) plates, the Ishihara 38, 24 and 14 plates with HRR YB plates, or the Optec 900 with HRR YB plates should be used as screening tests to classify the colour-vision defect
- b. The Waggoner CCVT or the CAD should be used as secondary precision tests. The precision tests quantify the colour-vision deficiency and identify 83% of subjects with colour vision defects who pass all job tests
- c. Colour-vision screening should be limited to a single attempt per medical examination because testing multiple times increases measurement errors
- d. HRR YB plates should be added to the RG-only tests because numerous eye conditions can cause YB colour-vision defects
- e. Tests with limited trials should be removed because they can be memorised
- f. All pilots that fail any of the screening tests need to pass a precision test to be cleared without restrictions

Linda Werfelman highlighted Watson's findings that, in 78 countries studied, the colour-vision assessment process begins with primary screening, with most countries using the IT. If the subject is unsuccessful during primary screening, secondary screening is undertaken, using lantern tests. Secondary screening may be followed by further investigation. Applicants are then licensed appropriately.³

CONCLUSION

Colour vision is of great importance in visually-demanding work environments. Challenges of inconsistency and variability of results have been demonstrated. It is recommended that a standardised list of tests that are internationally accepted to diagnose and quantify colour vision, be compiled. Novel techniques of colour vision assessment, called precision tests, have been designed for this purpose. Further studies are, however, needed to analyse each of these tests for each class of colour vision.

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LESSONS LEARNED

- Aviators can fail colour vision testing in one country and pass in another due to inconsistencies and variability of results and interpretation of the conventional tests
- The commonly used pseudo-isochromatic tests can diagnose colour-vision defects with high sensitivity, but poor specificity. In general, these tests cannot be used to quantify severity of colour vision loss
- Multiple tests and varied protocols yield inconsistent results which are difficult to interpret
- Precision tests, even though more time-consuming, offer the most reliable means of detecting the presence of congenital deficiency and of quantifying the severity of loss. These tests are also useful in healthcare and eye-related clinical use

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Sick leave and work absence

Part 1: Can sick leave be harmful to patients?

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ABSTRACT

A growing body of evidence indicates that sick leave might be harmful. Research has shown that not working is associated with deterioration in physical and psychological health, an increase in the rate of suicide, interpersonal relationship problems, loss of identity, financial hardship, and poorer quality of life. Potential effects of loss of work include poverty, social deprivation and social isolation, poor physical and mental health, and increased mortality. A sickness certificate will allow a person to be exempted from work while he or she recovers from the effects of illness or injury. However, the longer someone is off work, the less likely he or she is to ever return. Frequent sick leave should therefore be considered to carry significant health risks.

Keywords: sick leave, certification, impairment, disability

INTRODUCTION

Medical doctors issue sick leave certificates on a daily basis to patients in South Africa, for a variety of medical conditions. It is unlikely that any of these practitioners would consider the issuing of a sick leave certificate as potentially harmful to their patients, unaware that there is a growing body of evidence indicating that sick leave could have unintended harmful effects on the individual taking sick leave.¹

It is important that doctors in South Africa become aware of their critical roles in managing the problems associated with sick leave certification, and re-examine the basics of sick leave. This may lead to a more judicious approach to the issuing of sick leave certificates.

This back-to-basics article revisits some of the issues related to sickness certification with the intention to create awareness of the potential unintended harmful effects of prolonged absence from work.

FUNCTION AND SCOPE OF A SICKNESS CERTIFICATE

For many doctors, the issuing of sick leave certificates may be a source of great frustration.² It has been argued that issuing these certificates poses a dilemma for the practitioner in balancing patient advocacy with the perceived 'benefit gatekeeper' role.³ Doctors have to maintain a good relationship with their patient, and their therapeutic role requires the patient's trust. If a general practitioner questions the initiation or continuation of requests for sickness certificates, it could undermine the trust between the patient and the doctor.² Furthermore, doctors rarely have all the information required about their patient's occupation or workplace, absenteeism policies, relevant legislation, the role of the health risk managers, the insurance industry process and benefits, impairment assessment, and the role of the occupational therapist in vocational rehabilitation.⁴

The doctor issuing the medical certificate should be totally convinced about the benefit to the patient of being booked off work. For example, the employee may be so ill that he/she

cannot work (e.g. pneumonia), is physically unable to be at work (e.g. fracture in traction), requires rest for health management (e.g. driver with deep venous thrombosis), presents a risk to self or others (e.g. uncontrolled epilepsy or mental illness under certain conditions), has an illness that is aggravated by work (e.g. asthmatic welder), or requires health management that impairs work attendance (e.g. chemotherapy sessions).⁵

SICKNESS CERTIFICATES IN SOUTH AFRICA

An employee may present a sick leave certificate to his or her employer in order for him/her to be exempted from work whilst recovering from an illness or injury. The certificate, functions as the entry and exit gate to health-related income support and, in essence, provides access to financial benefits whilst not working.²

According to the Basic Conditions of Employment Act,⁶ a medical certificate must be issued and signed by a medical practitioner or any other person who is certified to diagnose and treat patients, and who is registered with a professional council established by an Act of Parliament. According to section 22 of the Basic Conditions of Employment Act, it is apparent that there are two requirements for a medical certificate to be valid: it must state that the employee was unable to perform his or her normal duties as a result of illness (or injury), and must be based on the professional opinion of the medical practitioner or other professional as defined in the Act. A sickness certificate is therefore presumed to be based on medical facts known to the doctor, and should outline the functional limitations that result from the medical condition.

Routine check-ups, examinations, tests, collecting medicine from the pharmacy, and visits to optometrists, gynaecologists, physiotherapists, etc. do not qualify for sick leave. Sick leave is to be used only when the employee is medically unfit to perform his or her normal duties.⁷

In South Africa, the Health Professions Council of South Africa's Ethical and Professional Rules of the Medical and Dental

“The doctor issuing the medical certificate should be totally convinced about the benefit to the patient of being booked off work”

Professions Board provides doctors with guidance to the writing of sickness certificates.⁸ According to rule 15(1)(g), ‘Certificates of Illness’ should include “whether the patient is totally indisposed for duty or whether the patient is able to perform less strenuous duties in the work situation”. Rule 16 states that “A practitioner shall grant a certificate of illness only if such certificate contains the following information: (a) the name, address and qualification of such practitioner; (b) the name of the patient; (c) the employment number of the patient (if applicable); (d) the date and time of the examination; (e) whether the certificate is being issued as a result of personal observations by such practitioner during an examination, or as a result of information which has been received from the patient and which is based on acceptable medical grounds; (f) a description of the illness, disorder or malady in layman’s terminology with the informed consent of the patient: Provided that if such

patient is not prepared to give such consent, the practitioner shall merely specify that, in his or her opinion based on an examination of such patient, such patient is unfit to work; (g) whether the patient is totally indisposed for duty or whether such patient is able to perform less strenuous duties in the work situation; (h) the exact period of recommended sick leave; (i) the date of issue of the certificate of illness; and (j) the initial and surname in block letters and the registration number of the practitioner who issued the certificate”.

THE COST OF SICK LEAVE IN SOUTH AFRICA

Absence due to sickness has increased sharply in South Africa over the past decade.⁹ The economic costs of work absence place a significant burden on national economies.⁴ In South Africa, the cost of sick leave runs into billions of Rands every year. In 2013, at a given point in time, 3.7% of workers were on sick leave, whereas a decade earlier, in 2001, 0.7% of workers were absent from work due to sickness. In 2013, the loss of output due to absenteeism totalled R4.29 billion in direct costs. According to the Adcorp Employment Index report of August 2013, 3.96 million workers were absent due to sickness during the year, compared to 700 000 in 2000. This represents an increase of 466%, despite the fact that the number of people employed remained essentially the same over this period.¹⁰

SICKNESS CERTIFICATION IN OTHER COUNTRIES

It is not only in South Africa that doctors are wrestling with the problematic issue of sickness certificates. Sickness certification has been under the spotlight for the past 10 years or more in a number of European countries, including Norway,¹¹ Sweden¹² and the United Kingdom¹³ where regulations for the issuing of sick leave are being modified in order to make medical practitioners aware of the benefits of work and reverse the ‘sick note culture’.

In Norway, sick leave fell by a formidable 20% after the Norwegian authorities launched their reform plans which, in essence, involved increasing the amount of administrative work for doctors when issuing sickness certificates.¹¹

From 2000 to 2009 there was a 70% increase in requests for sickness certificates in Australia, prompting the release of a position statement by the Australasian Faculty of Occupational and Environmental Medicine entitled ‘Realizing the Health Benefits of Work’. The document urged doctors to acknowledge the fundamental principle that work is generally good for health and wellbeing, and that long-term work absence, disability and unemployment have a negative impact.⁴

CAN SICK LEAVE BE HARMFUL?

Two of the pillars of the ethical practice of medicine are non-maleficence and beneficence.¹⁴ When it comes to the issuing of sick certificates, these two pillars need to be considered more carefully as research has shown that there are instances where sick leave might be outright harmful to our patients.¹ In particular, the principle of non-maleficence reminds us that medical practice involves risk and potential harm and we should never expose our patients to such harm unnecessarily.

SUGGESTED PRO FORMA MEDICAL CERTIFICATE	
Dr's letterhead (name, qualifications, address, contacts, etc.) plus MP nr + practice number	
<small>* Delete if not applicable. This medical certificate is based on the requirements set by the Basic Conditions of Employment Act, the Labour Relations Act and the Employment Equity Act.</small>	
PATIENT PARTICULARS Full names and surname:	
MEDICAL EXAMINATION Date and time of examination:	
This certificate is issued as a result of *personal observations by the practitioner during an examination and/or *information or both received from the patient and which is based on acceptable medical grounds.	
EXTENT OF ILLNESS/INCAPACITY The patient will not be able to perform * some / * all of his/her duties based on medical reasons.	
<i>Note that a diagnosis and further details may only be provided with the patient's informed consent (see reverse side of this certificate).</i>	
DURATION OF INCAPACITY S/he will be * unable / * partially able (as set out above) to fulfill their duties for the period starting on _____ and ending on _____.	
* REASONABLE ACCOMMODATION (IF APPLICABLE) S/he will require reasonable accommodation in the form of _____ in accordance with the above incapacity (e.g. amended duties, amended work schedule, changed workplace, etc.)	
* FOLLOW-UP MEDICAL EXAMINATIONS (IF APPLICABLE) S/he will be required to visit me for follow-ups on the following dates: _____ Or at regular intervals of *once a month / *once a year / *..... for the following year ending on _____	
SUPPLEMENTARY INFORMATION A copy of the SA Medical Association (SAMA) Guidelines and enquiries in relation to medical certificates is available from the SAMA head office on request.	
Signature: Dr XYZ _____	_____ Date
PATIENT INFORMED CONSENT	
I am a patient of doctor _____ who has discussed with me the nature of my illness, disorder or malady. I am aware of the fact that I have the right to confidentiality. I hereby *consent / * not consent , to the release of information regarding my illness, disorder or malady to my employer/teacher/lecturer should they so request from dr XYZ.	
Patient Signature _____	Witness _____
Date _____	
SAMA © 2015	

Pro forma medical certificate as suggested by the South African Medical Association, amended February 2015

“Absence due to sickness has increased sharply in South Africa over the past decade”

Income maintenance payments can be disincentives to resuming work.¹⁵ The availability of income replacement benefits may act as an incentive for workers with marginal disabilities to drop out of the workforce and seek these benefits instead, particularly where there is relatively loose control of the gateway to such benefits. Income replacement benefits might act as a financial barrier to returning to work once the patient has recovered, or to finding part-time work, which would result in the discontinuation of his or her income replacement benefits, leading to the so-called ‘benefit trap’.¹⁶ The receipt, or potential receipt, of disability benefits, may also act as a disincentive to rehabilitation.¹⁷

Loss of work and unemployment can thus have a disastrous effect on an individual. Whatever the cause, the effects of loss of work can include poverty, social deprivation and social isolation, poor physical and mental health, and increased mortality.¹⁸ Research has shown that not working is associated with deterioration in physical and psychological health, an increase in the rate of suicide, interpersonal relationship problems, loss of identity, financial hardship and poorer quality of life.¹

Work absence also tends to perpetuate itself: the longer someone is off work, the less likely he or she is to ever return. A study conducted several years ago showed that if a person is off work for 20 days, the chance of ever returning to work is 70%; after 45 days of work, the chance is 50%; and after 70 days, the chance is 35%.¹⁹

It is not surprising, therefore, that the American Medical Association encourages physicians to advise their patients to return to work at the earliest date compatible with health and safety, encouraging physicians, through their care, to facilitate a patient's early return to work after sickness absence.²⁰ According to their estimates, 50% of people off work for eight weeks will not return to work, and 85% of people off work for six months or more will never return to work on a sustained basis.²⁰

CONCLUSION

Evidence suggests that we, as the medical profession, need to change in relation to how we think about health and work. Long-term work absence may not have the immediate appearance of a life and death matter but research demonstrates that it is associated with a range of poor health outcomes and an increased mortality rate.⁴

Sick certificates have an immediate effect on the economy of the country. Thoughtless re-issuing of sick certificates without consideration of the medical reasons as to why inactivity is necessary, may be outright harmful to a patient. Given the complexities involved, it is vital that doctors improve their knowledge of the field and that we show leadership on this issue with a view of having a more judicious and responsible approach to issuing sickness certificates.

In summary, work is mostly good for people, and work absence is not.² Sickness certificates should be issued cautiously as the practice might involve significant health risks.¹

LESSONS LEARNED

- Certificates of illness are legal documents and practitioners should be familiar with the ethically prescribed format in South Africa
- Work absence is associated with a progressive deterioration in physical and psychological health
- The longer someone is off work, the less likely he or she is to return to work
- Doctors and other healthcare practitioners in the field of occupational health should show leadership in changing attitudes towards prescribing sick leave

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Cannabis use, metabolism and testing

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The prevalence of cannabis use by employees in South Africa is not documented. Internationally, published figures vary widely, although it is accepted as being the most widely abused illicit drug in most locales.¹ A systematic review of 16 international studies, looking at psychoactive substance use amongst long-distance truck drivers, found widely varying results for cannabis use (0.2-29.9%).² Anecdotally, there is widespread suspicion of cannabis use, with multiple samples being analysed in occupational health practices and sent to laboratories for screening and/or confirmation.

Cannabis use is detected by means of a random urine specimen. The screening test employs immunoassay technology. The antibody is directed against the active metabolite, 9-carboxy-delta-tetrahydrocannabinol (THC) and other metabolites. Confirmation of positive testing is done by means of gas chromatography mass spectrometry (GC-MS). The cut points used are in line with those used in the USA (50 ng/mL for immunoassay).

Single or "once off" use produces levels that are usually detectable for up to 36 hours. Serum levels rise and fall more quickly and are not recommended currently. In chronic smokers, cannabis is stored in fat from where it is slowly released, resulting in positive tests for four to six weeks after cessation. Towards the end of this period, the elimination

half-life becomes variable and levels can fluctuate widely.

Passive smoking is highly unlikely to cause detectable levels outside of very controlled artificial testing situations.¹ However, the 'passive smoking defence' is used frequently as an explanation for the presence of a positive cannabis test. In such cases, a repeat sample 24 hours later is recommended, as there should be very little storage in body fat as a result of true passive smoking exposure.³

Patients often attempt to adulterate samples by adding water to dilute the urine sample. Creatinine measurement on the same sample is a good measure to detect such attempts. Very dilute samples cannot be commented on, and a repeat sample is suggested. Eye-drops containing benzalkonium chloride and a borate buffer can be used to cause a false negative urine immunoassay screen; however, these samples will still test positive on GC-MS.¹

Oral fluid (saliva) testing has become increasingly important. Early reports in small controlled trials show very high levels of diagnostic accuracy, with detection times up to 22 hours after cannabis smoking in chronic users.⁴ Hair samples are often used in forensic situations, providing incontrovertible evidence of cannabis use. However, this has been shown to be false at times; THC and other metabolites can be found in the hair of non-users and





Relevant points regarding urine cannabis use

Cannabis metabolites urine cut-points	50 ng/mL (immunoassay screen) 15 ng/mL (GC-MS confirmation)
Urine detection time	Single use → 3 d Moderate use (4 times/week) → 5-7 d Daily use → 10-15 d Chronic heavy smoker → 4-6 weeks
Causes of false positive results	Efavirenz, hemp oil, NSAIDs, proton pump inhibitors
Causes of false negative results	Dilute samples, eye drops

may be transferred via hands, sebum/sweat or smoke from smokers.⁵

CONCLUSION

Cannabis remains a very commonly abused drug and many employers and, increasingly, schools have a zero-tolerance policy. Currently, urine remains the sample matrix of choice. Both false positive and false negative results may be obtained, and all results must be interpreted in the appropriate clinical context. Confirmatory testing by means of GC-MS is available.

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Occupational Health Workshop: Red Sands Country Lodge, Kuruman

The Asbestos and Kgalagadi Relief Trusts sponsored a CPD-accredited Occupational Health Workshop at Red Sands Country Lodge on the evening of 14 March 2016. There were 33 attendees – mainly doctors and nurses, with an assortment of allied health science practitioners such as occupational therapists and radiographers. The session was ably chaired by occupational medicine practitioner, Dr Louis Ellis, who is also a local GP and the local SASOM chairperson.

Professor Gill Nelson from the Wits School of Public Health spoke first. In her role as Editor-in-Chief of the *Occupational Health Southern Africa* journal, she explained the importance of the Journal in furthering the discipline of occupational health in our region, and expressed the aspiration and plea that the Journal become owned by its readers.

Prof. Nelson then described her research into the health effects of manganese exposure. This is important because the Hotazel mining region is one of the largest producers of manganese worldwide, and also has 80% of the world's manganese reserves. She is involved with USA partners

in three large studies. The first is looking, post-mortem, at the brains of ex-manganese mineworkers to see how these might differ from the brains of other ex-mineworkers. To do this, they obtain consent from the miner before he dies or from his family after death, to remove his brain, preserve it and send it to the USA for analysis. There they do magnetic resonance imaging of the brain before doing special stains to see what effect manganese exposure might have on cell counts. Preliminary findings show a trend toward abnormalities of inflammation in parts of the brain that control the ability to move smoothly. The second study, also in the Hotazel region, is a prospective cohort study and involves following up manganese miners over time to see if they develop any movement disorder symptoms related to parkinsonism, which can be caused by manganese poisoning. The third study involves the communities surrounding a manganese smelter, also looking to see if there are any motor function or cognitive problems in those who live in the vicinity of the smelter. The pilot study, conducted in a convenience sample of 100 individuals, found a high prevalence of parkinsonism



Back: Phiroshaw Camay, Gill Nelson, Jim teWaterNaude, Louis Ellis
Front: Lady Jood, Zodwa Ndlovu *Courtesy of Victor Mulangisi, Kathu Gazette, Northern Cape*



Lady Jood and Phiroshaw Camay *Courtesy of Jim teWaterNaude*

(18%), using the Unified Parkinson Disease Rating Scale motor subsection part 3 (UPDRS3), and a correlation between motor function and cognitive control.

Dr Lady Jood, the current Asbestos Relief Trust chairperson and an occupational medical practitioner in Kuruman, spoke on the post-mortem service in the John Taolo Gaetsewe district. This statutory service gives deceased miners and ex-miners a last chance to see if they have a compensable medical condition which might have been missed or was too subtle to pick up while still alive. She described the history of the service in the district, emphasised sections of the applicable laws, and detailed the processes a family needs to follow to obtain an autopsy for a deceased loved one.

Ms Zodwa Ndlovu, a lecturer from the Wits School of Public Health, spoke on what information scientists like her are able to learn from the autopsies conducted on deceased miners and ex-miners, apart from the compensation benefits. Some 110 000 miner-autopsies have been performed countrywide since 1975, and these have shown high rates of silicosis and tuberculosis, mainly from gold mining, as well as emphysema. The rate of asbestos-related disease autopsies was highest in miners from the Northern Cape. She also stated that, as long as we explain properly to people the reasons why autopsies need to be done, there is usually little resistance to consenting to the procedure.

Dr Jim teWaterNaude, public health medicine specialist, gave a talk on how best to do quality lung function testing. The main message was ensuring that the patient blows into the handle as fast and fully as he or she can for a full six seconds. A maximal effort in the first second of the test

sets the tone for the next five seconds, when they have to 'blow themselves empty'. In most cases, the better the first second, the better the test. Dr teWaterNaude provided plenty of examples of poor test results and engaged the audience by asking them to identify the problems in each one.

The final speaker was the Kgalagadi Relief Trust Chairperson, Mr Phiroshaw Camay. He spoke on the need for an asbestos memorial in Kuruman. He took the audience on an insightful and thoughtful journey as to why memorials are erected, what they mean to people, and what modern trends are in countries like Australia, Spain, Scotland and Canada. He provided insight into the constitutional provisions which enjoin all South Africans 'to unite in diversity'. The South African National Heritage Resources Act provides guidelines on what principles should be followed when creating a memorial, including that each generation has a moral responsibility to act as trustees of their heritage, that resources need to be managed by the local communities and that, if memorials are created, they have lasting values in their own right. Heritage resources also contribute significantly to research, education and tourism. It is the Asbestos and Kgalagadi Relief Trusts' stated intention to facilitate a process of creating an asbestos memorial in Kuruman.

At the end of the evening, it was agreed by all that the CPD event of the Trusts should be an annual event.

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Ergonomics regulations for a reformed workplace

The Department of Labour (DoL) has a mandate to protect workers against occupational diseases and injuries arising from workplace hazards and risks, including ergonomic risk factors. Industry has a plethora of preventable injuries and diseases that cause loss of life, disablement, loss of income, and reduced productivity, negatively affecting families and communities. Many of these injuries and diseases are reported to the Compensation Commissioner for financial compensation.

According to the International Ergonomics Association (IEA), ergonomics is the scientific discipline concerned with the fundamental understanding of interactions between humans and other elements of a system; and is a profession that applies theory, principles, data and methods to design in order to optimise human well-being and overall system performance.¹ Linking ergonomics explicitly to specific business strategies and business goals, as suggested by the IEA definition, will contribute to the shared goals of business performance. This is achieved by ensuring that companies operate at their full potentials, that employees are provided with a safe and healthy working environment, and their quality of life is not negatively affected. South Africa is straddling both First and Third World economies. South African companies associate ergonomics with occupational health and safety and not with business performance, hence, it does not form part of their primary business strategies.

The DoL has identified ergonomics risk factors as a threat in South Africa. This can be seen through the issuing of Circular Instruction 180 regarding the compensation for Work Related Upper Limb Disorders (WRULDs),² and the embedding of the concept of ergonomics in certain sections of the Occupational Health and Safety Act, No.85 of 1993³ as well as in Facilities Regulations⁴ and Construction Regulations.⁵ The DoL understands that employees are the central factor in all activities of work life and that no economic progress can take effect without them being looked after as their health and performance are key factors for productivity.

In 2013, the DoL established a tripartite (Business, Labour and Government) technical committee to develop Ergonomics Regulations which were finalised in 2015 and will be released for public comment in 2016. These regulations will be accompanied by a code of practice and technical guidelines with the goal of ensuring that the Regulations are concise and practical, and focused on a programme approach to manage physical and cognitive ergonomics in the workplace. The development of these regulations was part of the proactive approach taken by the

DoL to ensure that ergonomic risk factors are addressed by employers during the implementation of their occupational health and safety management systems. These regulations will contribute to the healthy, safe work environment as required in Section 24 (1) of the Constitution of the Republic of South Africa⁶ and Section 8 of the Occupational Health and Safety Act.³ This will also ensure the promotion of good business practices and ethics with regard to occupational health and safety (OHS) values, yielding positive results for South Africa.

In preparation for implementation of the Regulations, DoL inspectors are being subjected to rigorous training which is coupled with practical work to ensure that they are able to advise, inspect and enforce issues relating to ergonomics in various workplaces. This capacity-building programme will ensure that ergonomics risk assessments conducted at the companies are properly scrutinised to ensure their alignment to activities that are being carried out in that particular workplace.

Companies are urged to begin a process of identifying ergonomic risks at their workplaces in order to mitigate the challenges they may encounter when the Regulations are eventually promulgated. Information will be made available to employers and employees to assist them in the application of the legislation.

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Save the date for KITE 2017 – KZN’s leading industrial exhibition

KZN Industrial Technology Exhibition (KITE) 2017 will be held once again at the Durban Exhibition Centre, from 26 to 28 July, and promises to bring high calibre visitors focused on sourcing new technology and services. With 2015 attendance figures showing that 97% of visitors were from KwaZulu-Natal, the exhibition provides an extremely targeted marketing opportunity for local companies.

Now in its 35th year, this leading industry trade exhibition has grown in size and renown, both in KwaZulu-Natal and across southern Africa. Evidence that KITE is a popular choice amongst discerning industry professionals is the feedback received from the high calibre visitor base and previous exhibitors. According to Mahendra Gangai of MAGNET: “The show has provided a great foundation for us to showcase our diverse range of products and skills that we have on offer. It is a good foundation for networking.”

KITE is not only a portal for industry-leading technology and services, but is also a platform for knowledge sharing. This is evidenced in the on-stand interactions between exhibitors and visitors, but similarly in the free-to-attend seminar theatre sessions which have proved to be a huge drawcard for visitors keen on learning about the latest technology, trends and legislation.

“We are thrilled that we will be launching an Industrial Indaba in 2017 to run alongside the existing trade show. This is the culmination of our ongoing relationships with government, associations and industry partners, and we feel that KITE 2017 is the perfect launch pad for the Industrial Indaba,” says Charlene Hefer, KITE Portfolio Director at Specialised Exhibitions.

Another new feature for KITE 2017 is the inclusion of a Propak Africa Pavilion. This premier tri-annual exhibition is Africa’s largest showcase of packaging, food processing and labelling technology and services, which clearly complements the exhibitor offerings at KITE. “Including the Propak Pavilion was a natural evolution for the KITE exhibition as there is a fair amount of synergy and overlap between the two exhibitions. We have conducted extensive research and this is clearly an initiative that wins favour with both our current exhibitors and our visitor base in KZN. In addition, it provides the Propak exhibitors with an increased footprint opportunity in the KZN region,” says Hefer.

“Exhibitors at KITE 2017 will not only benefit from the ability to expand their potential customer database at the exhibition, but will also be able to leverage the marketing programme instituted by Specialised Exhibitions. This targeted horizontal and vertical marketing initiative provides extended brand exposure for exhibitors in the run-up to the show, during the show and after the event has taken place,” says Hefer.

The 2015 edition of KITE hosted 110 exhibitors from a spectrum of industries. The event provided its 5 156 visitors with an unrivalled opportunity to interact with the leading manufacturers and suppliers of high quality brands.

Boasting a visitor profile that focuses predominantly on senior management (32%) and technical/engineering specialists (41%), the exhibition clearly draws relevant target markets. Demographics indicate that 31% of visitors were in the manufacturing sector while 27% were involved in engineering.

KITE continues to bring visitors the latest products, services and trends across a number of industry sectors, including construction equipment and material, electronic components, energy solutions, environmental solutions, heavy machinery, hygiene products and services, industrial equipment and components, IT and telecommunications manufacturing equipment, materials handling, monitoring, process control and sensors, security equipment, workwear and protective equipment, plant and facility equipment, safety equipment and machinery, tools, and industrial services.

To book a stand or discuss a sponsorship package, contact Loftie Eaton or Mark Anderson on +27 (0)41 585 8274 or +27 (0)10 003 3063, or e-mail loftiee@specialised.com or marka@specialised.com. For more information on KITE 2017, visit the website at www.kznindustrial.co.za.

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SAIOH news

REPORT FROM SAIOH'S PRESIDENT AND THE PROFESSIONAL CERTIFICATION COMMITTEE

It is with great sadness that SAIOH received the tragic news of the untimely passing of Jenny Gent from Technique Design, the company responsible for publishing the *Occupational Health Southern Africa Journal*. Jenny will be dearly missed and fondly remembered by all at the SAIOH office and SAIOH Council, who often worked closely with her in publishing articles on behalf of SAIOH, over many years. Jenny's passing leaves a void that will not be easily filled; she was most pleasant and cordial, always willing to assist and to go beyond the call of duty whenever required. We offer our sincere condolences and deepest sympathies to Jenny's family, friends and colleagues.

In the previous issues of the *Journal*, we focused on SAIOH's new office bearers and SAIOH's strategic direction for the future. The time is now right to report on the new SAIOH registration and assessment process for Professional Certification. Ms Julie Hills, the chairperson of SAIOH's Professional Certification Committee (hereafter referred to as the PCC), jointly with members of the PCC, have put in a lot of effort and hard work in revising and improving the registration and assessment process.

REPORT FROM SAIOH'S PROFESSIONAL CERTIFICATION COMMITTEE ON THE NEW REGISTRATION AND ASSESSMENT PROCESS FOR PROFESSIONAL CERTIFICATION

During 2014 and 2015, members of the SAIOH Professional Certification Committee (PCC) worked tirelessly to upgrade the assessment system. Gaps in knowledge, lack of support materials for members, and the resulting failure rates in the written and oral assessment process prompted the changes. New tools and guidelines have been introduced to support knowledge and competence growth for SAIOH members, both during and after registration, at the various professional levels.

Several new processes have been implemented and it is imperative that all members make themselves aware of the changes and new requirements. These are being implemented during 2016 and will be a requirement for Continued Professional Development (CPD) claims, from January 2017.

All guides and support materials are available to download from the SAIOH website or can be requested from the PCC administrator.

REGISTRATION AND UPGRADE REQUIREMENTS

1. The skills definitions, self-assessment tool and user guide

The first and most important changes are the introduction of the skills definitions and the self-assessment tool and user guide. The tool is basically a detailed syllabus of the skills

and levels of knowledge and practical competence required at each level of registration. All SAIOH members must use the tool to complete the self-assessment form and keep an electronic copy of the form in their electronic Personal Learning Portfolio (PLP) files. This tool aids developing members to understand their suitability for assessment and provides a gap analysis for identification of weaknesses requiring further work or learning to meet minimum entry requirements. For registered occupational hygienists, this tool provides supporting evidence for their annual CPD claims.

2. Mentorship guidance and support

SAIOH has produced a mentorship guide to support a volunteer system for both internal supported trainees and unsupported trainees looking for guidance. Natural supervisor/manager relationships and internal skills development systems are acceptable, and records kept as part of this relationship for SANS 17020 requirements naturally fulfil the requirement. Unsupported trainees may request support of a mentor via the SAIOH administration. SAIOH is building a register of volunteers willing to mentor unsupported candidates; however, careful selection of mentors is hindered by the need to avoid bias or conflicts of interest in the assessment process, where potential mentors are trained PCC oral assessors. This is under review and will be finalised shortly. The Mentorship guide provides ideas, identification of information, and advice to both the mentor and the mentee, and should be used to support the relationship.

The results from the self-assessment tool described in point 1 aid the mentor to understand weaknesses and knowledge gaps, and to formulate the most effective action plan. Paperwork and agreements can be kept in the PLP file and used to support CPD claims, as both mentors and mentees can claim CPD points where the relationship is formalised.

It is, however, important to note that mentorship is not training or education! It is support and guidance of the mentee.

3. The Personal Learning Portfolio (PLP)

The PLP is a detailed record-keeping system for proof of mentorship, training, experience and development. Each member must have an active PLP file and update records accordingly. The PLP becomes the evidence file for CPD claims as well as an advisory tool for the PCC assessors in understanding candidate work history and practice when applying for registration, and may, in future, replace the need for oral assessments.

The PLP guide lists minimum required content, including, but not limited to:

- Copy of the candidate skills assessment record
- Internal and external training records
- Proof of attendance at meetings and conferences

Examples of record templates to be completed by candidates and their managers, mentors or trainers, are provided in the appendices of the PLP guide. Present record systems used by AIAs as part of their SANS 17020 Quality Management System (QMS) can be substituted for the suggested templates where these are available. It is not intended for the system to create additional work.

4. SAIOH guidance and learning tools

SAIOH is not an educator; it is not the Institute's responsibility to teach occupational hygiene to its members! The assessment failure rate has, however, identified gaps in knowledge and the need for support materials and guidance on information sources and how these can be accessed. Basic tutorials, information links, articles and reading materials relating to both core and periphery skills are constantly being added to the SAIOH website. New guidance notes on preparing for both written and oral assessments have been developed and are available on the website; these are sent out to all candidates prior to assessment. New quizzes are in the process of development and will be rolled out during 2016 (CPD points are allocated for completion of these!).

5. Continued Professional Development (CPD) requirements

Revision of the CPD points claimable during 2015 led to some problems; the PCC is currently working to ensure that the points system is fair and easily understood. It is important that all form of practice and skills development potential are

recognised, and that members feel that the process is fair and user-friendly. The new process involves specific teams reviewing various types of practice, including practical occupational hygiene, lecturing, conducting legal compliance inspections, etc., and both internal and external training, and development, are included. The final draft will be sent to all active PCC members for comment, in due course.

Proof of evidence for points claimed will be documented in the members' PLP files as part of the new process.

From the President, and on behalf of SAIOH, our sincere thanks and appreciation go to Julie and the members of the PCC, who assisted in revising and improving the registration and assessment process for Professional Certification of Occupational Hygiene practitioners. It needs to be emphasised that this initiative is also in line with SAIOH's strategic objectives, in developing and fostering growth of the occupational hygiene profession in southern Africa. Please do not hesitate to contact Julie should you have any enquiries regarding the new registration and assessment process. I offer my sincere thanks and appreciation to Julie for this report.

Report by

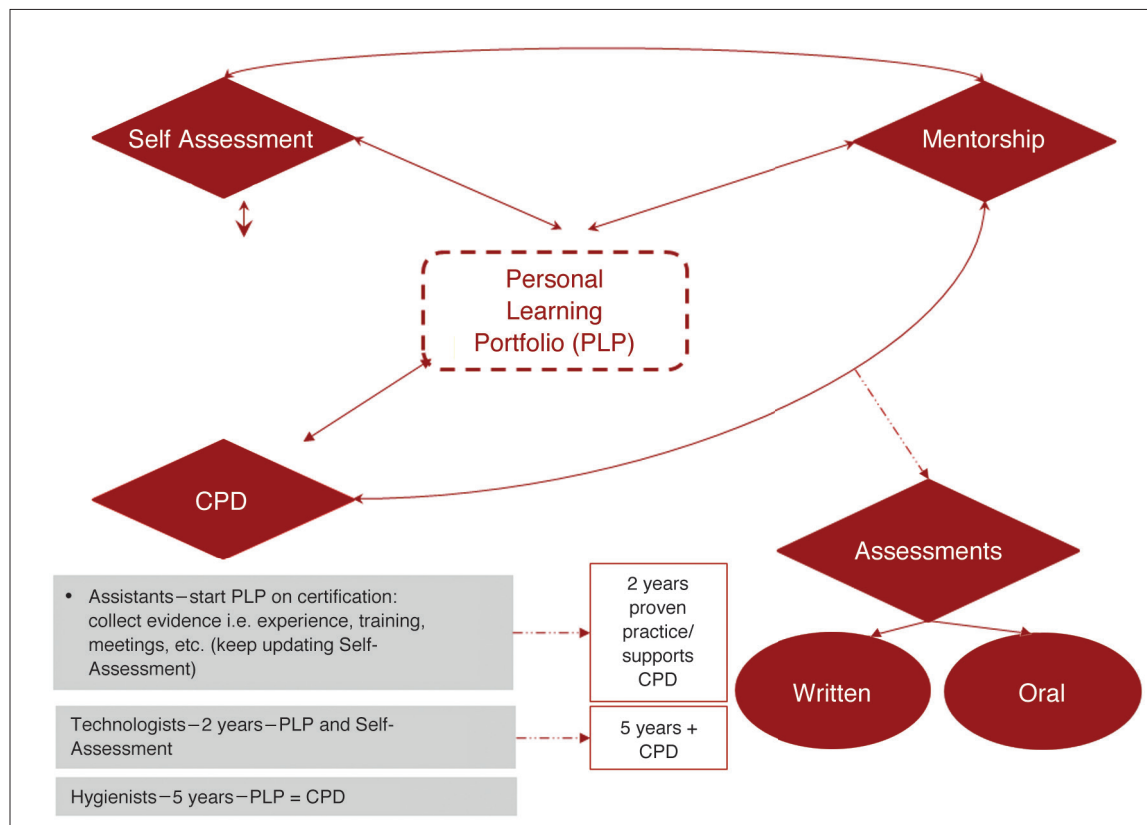
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Schematic of the new SAIOH assessment tools and guidance relationship



SASOHN news

CAN SOUTH AFRICA AFFORD NOT TO MAKE 90-90-90 AN ATTAINABLE TARGET?

UNAIDS released a statement article in 2014 termed “90-90-90 an ambitious treatment target to help end the AIDS epidemic”.¹ 90-90-90 is a global strategy to tackle the treatment inequalities that currently exist within the global approach to HIV and AIDS. The vision laid out is hoped to demonstrate what can be achieved if global solidarity moves towards evidence based, equitable action within multi-spectrum partnerships in both local and international contexts.

It has been recognised that, in order to end the HIV epidemic by 2030, HIV treatment will need to be provided to all who are infected. The ambitious but believed to be achievable target has been termed: “The 90-90-90 treatment target.”

- By 2020, 90% of all people living with HIV will know their HIV status. *Diagnosed*
- By 2020, 90% of all people diagnosed with HIV infection will receive sustained antiretroviral therapy. *Treated*
- By 2020, 90% of all people receiving antiretroviral therapy will have viral suppression. *Virally suppressed*

Through achieving the targets by 2020, it is conceivable that a global end to AIDS is attainable by 2030, with all of the coinciding health and economic benefits that would be anticipated.

Programmes designed to assist in achieving these targets need to be grounded in fundamental principles of human rights, mutual respect and the holistic inclusion in the treatment model. This can only be achieved if both the “care provider” and the “care receiver” are mutually goal-aligned. Coercive approaches have been found to be counterproductive, as they tend to drive people away from services they need rather than encouraging participation.

Marrazzo et al.² reported that the integration of biomedical and behavioural interventions in prevention care for people living with HIV and those at risk of contracting HIV provides many benefits. Practitioners should make use of the basket of strategies available by choosing strategies relevant to the individual employee.

The core of HIV preventive care rests on the basic principal of reducing the risk of new infections. The backbone of prevention remains: medical male circumcision, elimination of mother-to-child transmission, condom usage, pre-exposure anti-retroviral (ARV) prophylaxis, post-exposure prophylaxis, and harm reduction programmes for people who inject drugs. Effective programmes utilise a “combination prevention” method where more than one of the prevention methods are utilised at the same time.

It has been recognised that it is necessary to reach out to people who are at high risk of HIV infection but are undiagnosed, and support them to get tested. Then to assist those who have tested HIV positive to access treatment and care early on in the disease process, and to keep them engaged in care. It is equally important to re-engage and manage the defaulters who have fallen out of programmes due to the lack of adherence to ARVs.

UNAIDS suggests the following four areas of focus to manage the envisioned 90-90-90 strategy:¹

- Quality outcomes: the cascade of care needs to meet the ultimate goal of viral suppression
- Therapeutic and preventive benefits: where the focus is not only on the prevention of morbidity, but also on the prevention of further transmission of the virus
- Equity-based approach: where the treatment gap is closed for high risk and vulnerable groups in society. These include children, sex workers, men who have sex with men, injectable drug users, and transgender women
- Speed: to outpace the epidemic, effective comprehensive prevention would halt further transmission, and thereby stop the spread of the disease

Many occupational health clinics facilitate confidential HIV screening, ensuring that the care provider targets employees who are resistant to testing in order to identify 90% of employees who are HIV positive. Studies show that those most vulnerable to HIV are not being tested.³⁻⁵ Those that provide support for the chronic care and management of HIV positive employees need to ensure that 90% of those who are HIV positive are on treatment, and that 90% of those on treatment achieve viral suppression.

Occupational health services are well positioned to contribute to the 90-90-90 target and, in doing so, assist in South Africa's contribution to this global initiative. Understanding the window of opportunity and the position we currently occupy is vital to achieving the goal of preventing any new infections by 2030 – a goal we cannot afford not to achieve.

For further information, see <http://www.unaids.org/en/resources/documents/2014/90-90-90>.

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SASOM news

IN MEMORY OF JENNY GENT

Our dear friend, Jennifer Teresa Gent, passed away suddenly after an operation, on 16 April 2016. The SASOM Chairman, Executive Committee and members send sincere condolences to her husband, Mr Pieter Gent, daughter Diane, son Roy, and their families. Also to her colleagues who will miss her tremendous contribution to the success of *Occupational Health Southern Africa*. Jenny worked for Technique Design since 1991, and, from 2003 in the production of *Occupational Health Southern Africa*; later she also worked in subscription services. I met her over the telephone and through emails with the bi-monthly orders of the journal for SASOM members. She was always concerned and friendly and accommodated late registrations and queries in her usual cheerful manner. The same efficiency and respect shone through when she prepared articles or the questionnaire for publication. SASOM members could approach her for access to the Journal on-line and with problems of delivery of the Journal. Jenny responded in her usual friendly way and would go the extra mile to help. Benazir Bhutto wrote that being nice is a sign of courtesy, manners, grace and the ability to make everyone feel at home, but that does not mean that a woman cannot be tough. Jenny Gent was the epitome of Benazir's words. Rest in peace, Jen.

NATIONAL HEALTH INSURANCE (NHI) AND THE OCCUPATIONAL AND ENVIRONMENTAL HEALTH AND SAFETY (OEHS) REFERENCE GROUP

The NHI and OEHS Reference Group met on 21 April 2016 and discussed the way forward from the inefficient and inequitable health system in South Africa. It has been established that about 84% of the population depends on the state for access to healthcare, in comparison to 16% that have access to private healthcare. The NHI is developing a package of care which is being tested in 11 NHI pilot districts. Occupational health services (OHS) in private companies and state-owned institutions offer preventive care in South Africa, and the NHI invites these services to contribute to an affordable general healthcare system in future.

A follow up meeting to discuss perspectives and thoughts of the representatives from NIOH, different occupational health societies and legal advisors, took place on 11 May 2016.

MEETINGS WITH THE DEPARTMENT OF LABOUR REGARDING DIFFICULTIES WITH INJURY-ON-DUTY CLAIMS

Occupational health practitioners have had meetings with the Department of Labour about the difficulties experienced with claims for injuries-on-duty. Occupational Health and Hygiene Technical Assistant, Mr Clement Lekgetho, requires an estimate of the number and types of problems experienced by occupational health practitioners. A report form was sent by email to SASOM and SASOHN members to complete and return to Mr Lekgetho before 6 May 2016. At the time of writing this report no feedback or indication of the way forward had been received.

THE COUNCIL FOR HEALTH SERVICE ACCREDITATION OF SOUTHERN AFRICA (COHSASA)

COHSASA is the only internationally accredited quality improvement and accreditation body for healthcare facilities based in Africa (see: <http://www.cohsasa.co.za> for details). The Council aims to improve quality in healthcare through inspections of healthcare facilities in southern Africa, and the application of quality standards. The inspection reports are evaluated by the technical committee. Members of this committee, including Prof. Daan Kocks, have regular teleconferences to discuss the findings in reports on different facilities in southern Africa. The findings are then combined in a Technical Committee report which identifies deficiencies and creates quality improvement plans for each facility. The SASOM guideline, Occupational Health Audit, has been forwarded to the Council to highlight important quality standards in occupational health facilities.

SASOM ANNUAL CONGRESS

A report on the proceedings at the SASOM Annual Congress which takes place on 10 and 11 June 2016, will appear in the next issue of the Journal.

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MMPA's interview with Professor Mary Ross

Professor Mary Ross is an experienced occupational and public health medicine specialist, and has spent many years practising in the public, private and academic sectors. Her career path has spanned occupational health service management, programme development, research, teaching, consultant to the mining industry and the World Health Organization (WHO), member of several boards, and contributing editor of two journals. Professor Mary Ross has achieved phenomenal success and a justified reputation for depth of knowledge and experience in her chosen field that is inspiring to all who know and work with her.

Professor Ross has over 60 peer reviewed publications to her name and is a Fellow of four Colleges in the United Kingdom and Australia. In her work as an independent contractor she has conducted a WHO investigation into neglected tropical diseases in five African countries, a health impact assessment for a biofuel plant in West Africa, and a review of medical and hazard surveillance linkage for silicosis.

Professor Ross currently has international appointments as regional advisor for the Faculty of Occupational Medicine (UK), member of the WHO advisory group for the International Health Regulations, and Chair of the working group on occupational infectious agents for the International Commission for Occupational Health. She has developed global policies (including pandemic influenza policy), strategy, standards, guidelines, assurance frameworks, health indicators and medical surveillance with data collection system for worldwide occupational medical services, as well as a peer group system for implementing international best practice and reporting.

Professor Ross is an honorary professor at the University of the Witwatersrand where she coordinates the Travel Medicine course which she established in 2000 and the Tropical Public Health Medicine course, serves on the Human Research Ethics Committee, and supervises research in her areas of expertise.

She has been involved for many years as an active member of the Mine Medical Professionals Association which is recognising her contributions to occupational health in the mining industry with honorary membership of the Association. The MMPA recently spoke to Professor Ross about her life and career, and touched on some of the highlights.

Q: You have spent a good part of your working life in the mining industry. What was your first job in this sector and with which company did you start?

A: I have been involved in occupational health in the mining industry for 20 years, first doing research as a registrar, then supervising research as a senior lecturer at the University of the Witwatersrand. I entered the industry in 1999 as the first occupational health programme manager for the Mine

Health and Safety Council. Following five years there and establishing the occupational health research programme, I moved to be Executive Director of the National Institute for Occupational Health (NIOH) until 2007 when I became Group Medical Consultant for De Beers and established the global occupational medical service.

Q: How many years were you in the mining industry and what were some of your career highlights during this time?

A: I have continued consulting to various mining companies since retrenchment in 2009, as well as public health and travel medicine consultation and teaching. Some of the highlights since 1999 have been:

- The development of the occupational health research programme for the Mine Health and Safety Council to have equal standing to the safety research programme, and support of a large number of research groups building up national expertise. The programme initially started with the conventional occupational health research in respiratory and hearing problems but expanded to cover musculoskeletal disorders, information systems and even HIV by the time I left in 2004. Issues in mining occupational health were profiled at research launches and through MMOA (later MMPA) conferences. Within the programme, I also developed a strong postgraduate research programme which funded and supported postgraduate diploma, masters and PhD students, some of whom I had the pleasure of also supervising through my honorary position in the School of Public Health at the University of the Witwatersrand.
- The handbook on occupational health in the South African mining industry for which I was one of the editors was one of the most successful projects in promoting the field of occupational medicine in the mining industry worldwide
- As Executive Director at the NIOH, I led the 50th anniversary celebrations which highlighted the origins of the NIOH in the mining industry and the discovery of the link between exposure to asbestos and mesothelioma – believed by many to be the most important development in occupational medicine in the 20th century. I also introduced a mining track into the congresses of the International Commission for Occupational Health (ICOH) as Scientific Chair for ICOH 2009, following which I was elected to the ICOH Board for two triennia. A major achievement during that period was organising the funding and design arrangements for the new pathology facilities at the NIOH to fulfil obligations under the Occupational Diseases in Mines and Works Act
- As Global Group Medical Director for De Beers, I developed and supported integrated occupational, travel medicine and health promotion programmes, and assisted personnel to do operational research. One of the occupational health nurses has recently obtained a Masters degree based on her work in

these occupational health services and she has written a chapter for a nursing textbook – helping in the development of talent is a definite highlight for me.

Q: What changes did you see occurring during this time with regard to primary healthcare, counselling, extended healthcare (e.g. to include miners' families and communities), and compensation, offered by the mine owners to their workers? What disease/accident pattern changes did you see over the years?

A: Occupational health services used to be completely separated from primary care on the mines. The downturn in the economy provided stimulation to do more for less and thus the integration of wellbeing plus prevention and promotion aspects of primary care into the health surveillance occupational health programmes. There has also been the development of public-private partnerships in the mining community, so collaboration with state health services has extended programmes such as HIV and TB prevention and management to families and into surrounding communities. A major achievement in the mining industry, particularly in the gold sector, has been the decline in occupational tuberculosis which was fuelled by the multiplicative effects of HIV and silica exposure. As the safety statistics improved, it was realised that TB was causing more mortality than accidents in the mining industry so this is a welcome improvement, largely associated with improved HIV treatment. Noise-induced hearing loss has also declined with the improvement in noise reduction and hearing protection. Along with these diseases declining, occupational health professionals are identifying other issues such as musculoskeletal disorders which were not previously diagnosed as being occupationally associated. Unfortunately, there has also been an increase in chronic diseases such as hypertension and obesity.

Q: Give a brief overview of your academic achievements, including papers delivered, international conferences attended, published research, etc.

A: My undergraduate degrees (BSc Hons and MBChB) were obtained in the UK and Zimbabwe from the University of Birmingham. I have fellowships in public health medicine, occupational health, and travel medicine from various Colleges and Faculties in South Africa, the UK and Australia. I have done research, published papers and delivered papers in all these fields at numerous international and national conferences.

Q: What was your first job after graduating, and what were your responsibilities?

A: My first job following internship in Zimbabwe was as a medical officer in anaesthetics in Pretoria.

Q: You sit on the Board of the National Health Laboratory Service. How long have you been a Board member?

A: I was appointed to the NHLS Board in September 2015 by the Minister of Health.

Q: What are the main responsibilities of the Board towards occupational health practitioners and the industry?

A: The NIOH is an institute within the NHLS and it provides various services to occupational health practitioners, all industries, and conducts research and training. One of the functions is provision of the post-mortem service for all miners and ex miners who work or worked in controlled mines as legislated by the Occupational Diseases in Mines and Works Act.

Q: What are looming health challenges in the South African mining industry and globally?

A: The chronic non-communicable diseases including stress and other mental disorders are presenting an increasing challenge to the whole population, not only in the mining industry.

Q: Outside of work, what hobbies or pastimes do you have? What do you feel passionate about?

A: I love travelling so my passion and hobbies are associated with exploring other places. I have been very fortunate in having travelled to exciting and far flung places for work and conferences. My daughter now lives in Japan and my son in the UK so I have an excuse to keep travelling to see them and their families. I also look forward to having more time to read and do needlework, both of which have been neglected for many years. My four-year-old grandson has promised to teach me Japanese which would be a major undertaking!

Q: Please tell us about your family?

A: My husband is an engineer who has recently retired from many years as a quality manager and then consultant. My son, Stephen, is an actuary working in London and married to an accountant; they have a one-year old daughter. My daughter, Joanna, is married with two sons and teaches English in Japan. Her husband travels globally for a Japanese steel company.

Q: Are you still involved in occupational health issues?

A: I have recently participated in a career conference for the Faculty of Occupational Medicine in the UK with several other fellows. It was very stimulating as we all had such different backgrounds and experience and I think it is this great variety of opportunities following qualification that opens any door one wants to go through and any specialty within occupational medicine, from psychiatry to surgery, if one is so inclined.

The MMPA wishes Professor Ross every success in her future endeavours which we hope will include further contributions to mining occupational health.

*Interview by Anne van Vliet
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