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Division of the National Health Laboratory Service

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70th Anniversary

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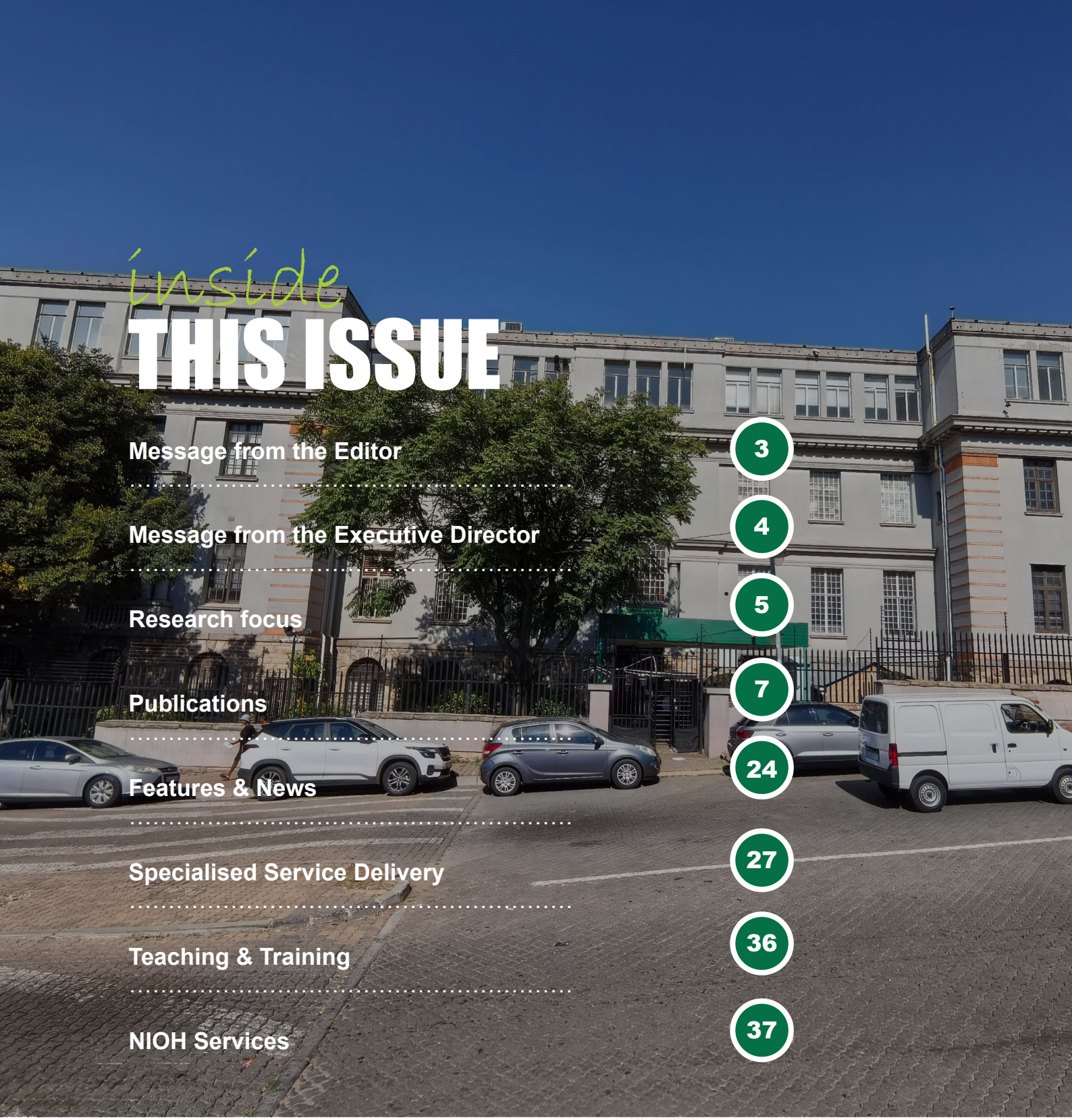

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Zinhle Mapumulo

MESSAGE FROM THE EDITOR

In 2026, the National Institute for Occupational Health (NIOH) marks a significant milestone in its history. It celebrates 70 years of advancing occupational health and safety in South Africa and beyond.

From its humble beginnings as the Pneumoconiosis Research Unit in 1956, the NIOH has evolved into an internationally recognised centre of excellence in occupational and environmental health and safety. Today, the Institute integrates cutting-edge research, specialised services, and capacity-building training to address the increasingly complex challenges of the modern workplace. This achievement reflects decades of unwavering commitment, scientific rigour, and collaboration.

In this issue, we journey through the pages of the NIOH's history and learn about the rich tapestry of scientific research and impact that has shaped the Institute into what it is today. Professor Spo Kgalamono, NIOH Executive Director, shares a reflective message on the Institute's past and present contributions to occupational health over the past seven decades.

She emphasises that the NIOH has been a cornerstone of the country's public health system, providing specialised diagnostic services, research, surveillance, and expert advice to prevent occupational diseases and injuries. Professor Nisha Naicker, Head of Epidemiology and Surveillance at NIOH, further expands on these points. Professor Naicker outlines some of the groundbreaking international research collaborations in which the NIOH has been involved, work that has earned the institute international recognition. These studies have significantly advanced scientific understanding of these conditions, the associated lung diseases, and prevention strategies.

Mr Simphiwe Yako and I take readers down memory lane, painting a picture of the NIOH's foundation and its deep-rooted legacy in scientific research in occupational health and environmental safety. The historical journey reveals how NIOH, evolved from focusing solely on miners' health to addressing the health and safety of workers across all sectors.

This issue also includes our regular features, including the latest scientific publications and the service delivery profile. In this edition, we profile the Epidemiology and Surveillance Section, giving you the opportunity to get acquainted with the services they provide.

Wishing you a productive year. Till next time!

Prof. Spo Kgalamono

NIOH CELEBRATES 70 YEARS OF PROTECTING WORKER HEALTH UNDER THE NHLS

The National Institute for Occupational Health (NIOH), a division of the National Health Laboratory Service (NHLS), marks 70 years of advancing occupational health and safety, reaffirming its critical role in safeguarding the health of South Africa's workforce.

Established in 1956, NIOH has been a cornerstone of the country's public health system, providing specialised diagnostic services, research, surveillance, and expert advice to prevent occupational diseases and injuries. As part of the NHLS, the Institute contributes to a national mandate of delivering equitable, high-quality laboratory and public health services that support evidence-based healthcare and policy.

Over seven decades, NIOH has built recognised expertise in identifying and managing workplace hazards, including chemical, physical, biological, and environmental risks. Through its accredited laboratories, specialist clinics, and surveillance programmes, the Institute has supported early diagnosis, prevention, and improved management of occupational diseases, strengthening worker health outcomes and productivity.

The NIOH's work has informed national standards, guidelines, and legislation, reinforcing South Africa's occupational health and safety framework. In line with NHLS priorities, the Institute has also played a key role in research translation, capacity development, and collaboration with government, academia, labour, and industry to ensure that scientific knowledge is applied where it is most needed.

As the world of work evolves, the NIOH continues to adapt, addressing emerging occupational risks, technological change, and the intersection between occupational and environmental health. These efforts reflect the NHLS commitment to innovation, responsiveness, and public service.

As the NIOH celebrates its 70th anniversary in 2026, it does so as a proud NHLS Institute, honouring a legacy of excellence while remaining firmly focused on protecting worker health and supporting a healthier, more productive nation.

Prof. Nisha Naicker

RESEARCH FOCUS

Since its establishment in 1956, the National Institute for Occupational Health (NIOH) has played a pivotal role in advancing occupational health research, policy, and worker care, not only in the country but also globally. The Institute has earned international recognition for its groundbreaking research studies on silicosis and tuberculosis among mineworkers, which significantly advanced scientific understanding of these conditions, their associated lung diseases, and prevention strategies.

The NIOH has expanded its scope beyond mining to address chemical, biological, physical, and ergonomic risks across diverse industries. This expansion has established it as a reliable collaborator for international organisations and research bodies addressing occupational health issues in low- and middle-income countries.

1. WHO Collaborating Centre for Occupational Health

Since 2005, the NIOH has been designated a World Health Organization (WHO) Collaborating Centre for Occupational Health, with renewals every five years that attest to its long-standing expertise and ongoing significance in occupational health [1]. Through its participation in the WHO Global Network of Collaborating Centres, the institute has contributed to global strategies on workers' health, the development of technical guidance, and capacity-building initiatives, particularly in resource-constrained settings within sub-Saharan Africa [1].

For example, during the 2022-2023 period, members of the NIOH Safety and Health Environment (SHE) department were invited by the WHO to participate in the committee contributing towards compiling the guidance document titled: Caring for those who care: A guide for the development and implementation of occupational health and safety programmes for health care workers [2]. Other contributions include supporting the WHO's Occupational Health and Safety work through the HealthWISE programme [2].

This initiative initially provided training to Health Care Workers (HCWs) across all provinces in South Africa and was subsequently expanded. In addition to training, various research projects were carried out among health care workers and vulnerable workers, such as those in the informal economy, as part of the WHO Collaborating Centre. A notable output was the Systematic Review and Meta-Analysis of Health Services Use and Health Outcomes Among Workers in the Informal Economy. This has shown how the WHO collaborating centre partnership generated globally relevant evidence for occupational health policy and practice.

2. Regional and Global Partnerships

The NIOH has developed enduring collaborations with international occupational health institutions and professional bodies, including the International Labour Organization (ILO), the National Institute for Occupational Safety and Health (NIOSH), European Union partners, such as the NanoSolveIT international Consortium, French Centre for Research and Training in Environmental Geoscience, and regional partners within the Southern African Development Community (SADC) [3]. In addition, the NIOH staff have participated in many expert technical committees to address occupational exposure risks, e.g., the International Commission on Radiological Protection (ICRP), Nanoscience and Nanotechnology Gateway3, the Organisation for Economic Co-operation and Development (OECD), and the International Organization for Standardization (ISO) [4]. These collaborations have supported joint research, technical exchange, and training initiatives aimed at strengthening inspection systems, occupational hygiene capacity, and disease surveillance [3, 4].

3. Occupational lung disease surveillance

NIOH-led research and statutory surveillance under the Occupational Diseases in Mines and Works Act have generated critical evidence on trends in occupational lung diseases in Southern Africa. The longitudinal surveillance data have informed national policy, compensation systems, and international discussions and scientific literature on occupational disease burden in the mining sector, as well as provided evidence on the prevention and control of occupational respiratory diseases, which is of global significance [5].

4. Capacity building activities

Training and professional development have been central to the NIOH's international contribution. The Institute has hosted and supported WHO and ILO-aligned and regionally focused training programmes in occupational hygiene, occupational medicine, epidemiology, and surveillance, strengthening professional capacity across Southern Africa and beyond [2,4]. The NIOH has emerged as a regional centre for occupational health training, supporting the development of skilled professionals capable of addressing complex workplace hazards and strengthening national OHS systems. The NIOH has hosted academic scholars from various international universities to share knowledge and support local capacity development.

5. Contribution to OHS knowledge

Through international collaboration, especially with other academic institutions such as the University of British Columbia in Canada, NIOH researchers have contributed to influential technical reports, surveillance outputs, and peer-reviewed research addressing occupational disease burden, exposure assessment, and health systems strengthening. These outputs continue to inform policy debates and technical guidance at national, regional, and global levels [2, 4].

Future directions

As occupational health challenges become increasingly complex and globalised, the NIOH's international collaborations remain essential. Building on seven decades of scientific excellence and partnership, the institute is well-positioned to continue shaping occupational health research, policy, and practice locally, regionally, and globally.

References

1. World Health Organization. Global network of WHO collaborating centres for occupational health. Geneva: WHO; https://www.who.int/about/collaboration/collaborating-centres
2. National Institute for Occupational Health. Annual Review 2022/2023. Johannesburg: NIOH; 2023.
3. National Institute for Occupational Health. Annual Review 2021/2022. Johannesburg: NIOH; 2022.
4. National Institute for Occupational Health. Annual Review 2019/2020. Johannesburg: NIOH; 2021.
5. National Institute for Occupational Health. Occupational lung diseases in South African miners at autopsy: surveillance report Johannesburg: NIOH; various years.

RESEARCH PUBLICATIONS

Prof. Nisha Naicker

Assessing zoonotic disease exposure and occupational health and safety practices among veterinary services fieldworkers in north west province, south africa

Author(s): Mhlongo, S.; **Naicker, N.**; Singh, T.

Source: Int. J. Environ. Res. Public Health 2025, 22, 1577. https://pure.uj.ac.za/en/publications/antimicrobial-resistance-profiles-of-bacteria-isolated-from-house

Summary: Veterinary fieldworkers play a vital role in managing animal and public health risks but are routinely exposed to occupational hazards, particularly zoonotic diseases. This study assessed occupational health and safety (OHS) practices, zoonotic disease exposures, and contributing factors among veterinary services fieldworkers in South Africa's North West Province, a setting where such risks are poorly documented. A cross-sectional descriptive study was conducted among 137 fieldworkers, including animal health technicians, state veterinarians, and veterinary public health officers. Data were collected using a structured, self-administered questionnaire covering sociodemographic characteristics, zoonotic disease knowledge, exposure history, and OHS practices, and analysed using descriptive statistics in SPSS version 27. The findings indicated frequent occupational contact with animals, animal waste, and body fluids, often in the absence of consistent access to adequate personal protective equipment (PPE) and comprehensive training. Although most participants were aware of common zoonoses such as rabies and brucellosis, fewer than half reported receiving regular OHS training or vaccinations. Significant associations were observed between occupational category and PPE use, as well as between years of experience and knowledge levels. Overall, the study identifies important gaps in OHS implementation, training, and PPE provision, underscoring the need to strengthen occupational health systems to protect veterinary fieldworkers and public health.

Prof. Nisha Naicker

Water, sanitation and hygiene in rural Greater Letaba Municipality, South Africa

Author(s): Molewa, M.L.; Barnard, T.G.; and **Naicker, N.**

Source: Health SA Gesondheid 30(0), a2940. https://hsag.co.za/index.php/hsag/article/view/2940

Summary: Limited access to adequate water, sanitation and hygiene (WASH) services continues to affect health and well-being in low- and middle-income settings. This cross-sectional study assessed access to water and sanitation, hygiene practices, and the occurrence of diarrhoeal illness in the villages of Ward 2 in the Bolobedu region of the Greater Letaba Municipality, Limpopo Province, South Africa. A total of 120 households were selected using a multistage probability sampling approach, and data were collected through structured interviews and analysed using STATA 18.0. Although all households reported having access to toilets, predominantly pit latrines, access to improved water sources remained limited, with most households relying on communal taps. While the majority of households had handwashing facilities with soap and water, consistent handwashing after using the toilet was not universal. Diarrhoeal illness was commonly reported, with over two-thirds of households experiencing occasional episodes in the preceding year. Significant associations were observed between diarrhoeal prevalence and water storage practices, availability of handwashing facilities, and post-toilet handwashing behaviour. Overall, the findings indicate that despite universal sanitation coverage, gaps in water access and hygiene practices persist and contribute to diarrhoeal disease burden. The study underscores the need to strengthen hygiene promotion and safe water practices alongside infrastructure improvements in rural communities.

Dr Melitah Motlhale

Factors associated with COVID-19 vaccine acceptance among medical laboratory workers in South Africa

Author(s): Motlhale M.; Wilson K.; Jones D.; Chin G.; and Naicker N.**workers in South Africa**

Source: J Public Health Africa. 2025;16(1), a1291. https://www.phbsa.ac.za/occupational-cancer-mortality-south-africa-2011-2015/

Summary: During the COVID-19 pandemic, medical laboratory workers faced an elevated risk of infection compared to the general population, underscoring the importance of vaccination in this group. This study aimed to assess COVID-19 vaccine acceptance and hesitancy among medical laboratory workers employed by the National Health Laboratory Service (NHLS) in South Africa in 2022. A quantitative cross-sectional design was used, with descriptive statistics applied to identify reasons for vaccine acceptance and logistic regression analyses conducted to examine associations between vaccine acceptance and selected socio-demographic factors, reported as odds ratios with 95% confidence intervals. The prevalence of COVID-19 vaccine acceptance among NHLS workers was high at 82.8%. The most frequently reported reasons for accepting vaccination were the desire to protect family members (62.6%) and self-protection (50.2%), alongside perceptions of vaccine safety (40.7%). Vaccine hesitancy was primarily attributed to concerns about limited research on the vaccines (41.4%) and potential side effects (31.4%). Higher odds of vaccine acceptance were observed among workers aged 40–49 years and 50–59 years, while lower acceptance was associated with black participants. Overall, the findings demonstrate substantial vaccine uptake among medical laboratory workers and provide valuable insights into factors influencing vaccine acceptance and hesitancy, contributing to the broader evidence base informing vaccination strategies among healthcare workers.

Dr Wells Utembe

Issues around the deterministic reference dose for lead and human safety concerns regarding its continued utilization

Author(s): Utembe, W.

Source: https://www.sciencedirect.com/science/article/abs/pii/S2468202025000336?via%3Dihub

Summary: Lead (Pb) continues to be a contaminant of public health concern throughout the world. Determining the safety thresholds for lead has proven challenging, as more adverse effects have been observed at lower doses than previously accepted safe levels. Indeed, in 2010, the WHO decided to withdraw the provisional tolerable weekly intake (PTWI) for lead after concluding that it could no longer be considered protective to health. Moreover, various international and national organisations have desisted from issuing exposure guidance values for lead, including the PTWI and the reference dose (RfD). However, the continued and widespread use of the WHO PTWI for lead, despite its withdrawal, is worrisome, as it may lead to misleading conclusions and recommendations. Using a predetermined risk level, benchmark dose (BMD) and probabilistic approaches (ie, approaches that consider variabilities) offer a viable solution for the risk assessment of lead.

Similarly, the USEPA has recommended the use of blood lead concentrations and biokinetic models (ie mathematical models that describe the uptake, distribution, metabolism (breaking down) and excretion of chemicals) while the WHO recommends the identification of source of lead exposure and appropriate actions to reduce from any individual with blood lead concentration ≥ 5 ug/dl (observed or predicted).

Prof. Nisha Naicker

Strengthening environmental health services delivery through improving data management in South Africa: insights from environmental health managers

Author(s): Masimula, S.S.; Senekane, M.F., and **Naicker, N.**

Source: Front. Health Serv. 5:1665259. doi: 10.3389/frhs.2025.1665259

Summary: In the delivery of environmental health services (EHS), routinely collected data plays a critical role in identifying environmental threats to human health and informing appropriate public health interventions. This study explored the perspectives and roles of environmental health managers in improving data management practices within municipal EHS delivery in the KwaZulu-Natal province of South Africa. A qualitative phenomenological approach was adopted, with data collected through semi-structured interviews conducted with ten environmental health managers between February and April 2024. Interview transcripts were analysed using ATLAS.ti. The findings highlighted the diverse roles and responsibilities of managers in strengthening data management systems, promoting data quality, and facilitating insight-driven decision-making. Participants indicated that effective use of data has the potential to enhance the impact of EHS delivery and contribute to improved health outcomes in communities, despite persistent institutional, capacity, and technical challenges.

The study further identified gaps in current data management practices, underscoring the need for a coordinated and holistic approach to reviewing and modernising environmental health data systems in South Africa. Overall, the findings emphasise the pivotal role of environmental health managers in leading transformation, applying change management strategies, and fostering a culture of data use within their organisations to support more effective and responsive environmental health service delivery.

Prof. Nisha Naicker

Antimicrobial Resistance profiles of bacteria isolated from households in greater Letaba Municipality, South Africa

Author(s): Molewa, M.L.; Heine, L.; Barnard, T.G.; **Naicker, N.**

Source: Hygiene 2025, *5*, *55*. https:// doi.org/10.3390/hygiene5040055.

Summary: Environmental surfaces play an important role in the transmission of pathogens, with bacterial survival influenced by environmental conditions and microbial interactions. This study investigated microbial contamination and antimicrobial resistance profiles of bacteria isolated from indoor household surfaces where cockroach activity was observed in the Greater Letaba Municipality, South Africa. Swab samples were collected from kitchen countertops and food storage areas, and bacterial isolates were identified using standard microbiological techniques. Antimicrobial susceptibility testing was performed using the Vitek® Automated 2 system. Of the 120 surface samples collected, 68% showed bacterial growth, yielding 190 bacterial isolates. Gram-negative bacteria predominated, accounting for 93% of isolates, including species of Klebsiella, Pseudomonas, Enterobacter, Escherichia, Serratia, Stenotrophomonas, Pantoea, Raoultella, and Salmonella. Notably, 98% of Gram-negative isolates exhibited multidrug resistance, with particularly high resistance to gentamicin, fluoroquinolones, and amikacin. All Gram-positive isolates were Enterococcus species, of which 78% demonstrated multidrug resistance. These findings indicate widespread contamination of household surfaces with antibiotic-resistant bacteria in settings with cockroach infestation. The presence and dissemination of multidrug-resistant organisms in domestic environments pose a significant public health concern, highlighting the need for improved household hygiene, pest control measures, and strategies to limit the spread of antimicrobial resistance within communities.

Dr Jitcy Joseph

Knowledge, practices, and health effects of exposure to chalk particles in classrooms among public secondary school teachers in the Johannesburg region

Author(s): Mbazima, S.J.; Fagbohun, O.F.; Moolla, R.; Anand, K.; & **Joseph, J.S.**

Source: International Journal of Environmental Health Research, doi:10.1080/09603123.2025.2594110

Summary: A cross-sectional study involving 239 teachers from 44 public secondary schools was conducted using an online questionnaire. Most teachers (95%) had never received training on exposure to chalk particles, and 76% did not take precautionary measures. Teachers opened windows (20%), frequently washed their hands (16%), and opened doors (15%) to reduce exposure. Despite the lack of training, most teachers (88%) recognised that exposure to chalk particles poses health risks. Most teachers (51%) knew that exposure to chalk particles could occur through inhalation, ingestion, and dermal routes. Chi-squared results indicated no significant differences ($p > 0.05$) in teachers' age, sex, and work experience regarding their knowledge of exposure to chalk particles. A work experience of 25–30 years was linked to knowledge (AOR: 1.04, CI: 0.27–4.17, $p < 0.05$). Coughing (19%), throat discomfort (16%), nasal congestion (11%), and headaches (10%) were the most prevalent health symptoms. Work experience of 5–10 (AOR: 3.58, CI: 1.64–8.27, $p < 0.05$), 15–20 (AOR: 4.76, CI: 1.77–15.25, $p < 0.05$), and 25–30 (AOR: 3.69, CI: 1.23–13.77, $p = 0.03$) years was associated with experiencing health symptoms. Due to a lack of training and awareness, teachers unknowingly implemented measures to reduce exposure to chalk particles.

Dr Melitah Motlhale

Occupation and female breast cancer mortality in South Africa: A case–control study

Author(s): Motlhale, M.; Ramatsoma, H.; Maabela, T.; Wilson, K.; Naicker, N.

Source: Int. J. Environ. Res. Public Health 2025, 22, 1878. https://doi.org/10.3390/ijerph22121878

Summary: Breast cancer is the most frequently diagnosed cancer and a leading cause of cancer-related mortality among women in South Africa, making it a critical public health concern. This study addresses an important gap by examining occupation as a determinant of breast cancer mortality at a national level. Using national mortality data from 2011–2019, the findings demonstrate that occupation is an independent risk factor for breast cancer mortality. Elevated mortality risks were consistently observed across multiple occupational groups, including professionals, managers, clerks, technicians, service workers, and craft and related trades workers, with particularly high risks identified in certain sub-occupations such as building and related trades, legal, social and cultural professionals, and business and administration professionals. These findings provide strong evidence that workplace-related factors and occupational exposures contribute to breast cancer outcomes. From a public health perspective, this work is significant as it is the first national study in South Africa to establish occupation as a potential independent predictor of breast cancer mortality. The results highlight the need to incorporate occupational history into breast cancer risk assessment, prevention, and screening programmes, with targeted interventions for high-risk occupational groups. Furthermore, the study underscores the importance of prioritising research into occupational exposures and working conditions to strengthen the evidence base for breast cancer prevention, control, and policy development.

Prof. Nisha Naicker

Macro-environment determinants of occupational injury and illness reporting: a comparison between low- and middle-income workers in South Africa

Author(s): Mudenha, W.F.; Singh, T.; Musenge, E.; and **Naicker, N.**

Source: Occup Health Southern Afr. 2025; 31(4):188-200. doi: 10.62380/ohsa.2025.31.4.2

Summary: Mining, construction, and manufacturing rank among the world's most dangerous industries, with South Africa's Occupational Health and Safety Act and Mine Health and Safety Act mandating incident reporting; however, under-reporting persists. Prior studies emphasised workplace micro-factors, overlooking macro-environmental influences such as economic, political-legal, demographic, socio-cultural, and technological factors. This cross-sectional mixed-methods study in Gauteng, South Africa, surveyed 273 low- and middle-income workers (70.8% response rate) from six companies via structured questionnaires, which were analysed using SPSS/Stata (Cronbach's alpha, factor analyses, Chi-square, OLS regression; $p<0.05$). Seven OHS expert interviews added qualitative insights via thematic/narrative analysis and triangulation.

Participants were mostly male (88.2%), black African (87.6%), low-income (63.3%), and ≤Grade 12 educated (76.9%). Over 94% were willing to report, aided by employer support and accessible systems. However, macro barriers hindered action: economic fears (job loss, income cuts, denied promotions), social issues (language/racial dynamics), and demographic factors (age vulnerability). Experts noted cultural norms, migrant challenges, and "Zero Harm" incentives. Regression analysis linked higher reporting to post-secondary education, middle income, manufacturing, and OHS training. Despite laws, macro-factors undermine reporting; targeted interventions are essential.

Dr Kerry Wilson

Cancer risk in the workplace: Using mortality data for occupational cancer surveillance

Author(s): Wilson, K.; Ramatsoma, H.; and Motlhale, M.

Source: https://www.phbsa.ac.za/occupational-cancer-mortality-south-africa-2011-2015/

Summary: Analysis of causes of death in routine mortality records is an important source of information on the burden of disease in many countries. When surveillance is limited or specific information is unavailable in other databases, mortality data are the only source of disease burden and trends. Thus, despite the recognised limitations in the quality of some records, analysis of the causes of death provides key insights into the health of the population. Occupational health surveillance is particularly limited locally and internationally, and thus mortality data is used to identify occupation-associated diseases, higher-risk occupations or industries, and trends. The methodology of this analysis calculates Proportional Mortality Ratios (PMRs) for each occupation group or Mortality Odds Ratios (MORs). These are used rather than the gold standard, being Standardised Mortality Rates, as there is no information on the number of people employed in each industry or occupation group in South Africa. The results of these analyses should be interpreted as indications of patterns in the cause of death in specific occupation groups. These differences may be due to occupational exposures, lifestyles influenced by occupation, or chance. The results indicate where further research is warranted to use limited resources effectively.

Dr Kerry Wilson

Occupation groups associated with an increased risk of lung cancer mortality in South Africa

Author(s): Wilson, K.; Motlhale, M.; Ramatsoma, H.; and Naicker, N.

Source: https://www.phbsa.ac.za/occupational-cancer-mortality-south-africa-2011-2015/

Summary: Lung cancer is the leading cause of cancer mortality globally and in South Africa. Although tobacco smoking is the primary risk factor, occupational exposures also play a significant role in lung cancer risk. However, evidence on occupational lung cancer in South Africa remains limited. This study analysed lung cancer mortality patterns by occupation and industry using national vital registration data from Statistics South Africa for the period 2011–2015, when occupational information was available. A total of 17112 lung cancer deaths were recorded, of which 71% occurred in men, and the highest proportion was observed among individuals aged 60–64 years. Information on smoking history was incomplete, with data available for only 57% of working-age deaths. Mortality odds ratios (MORs) were calculated after adjustment for available non-occupational risk factors. Several occupational groups demonstrated significantly elevated odds of lung cancer mortality compared with deaths lacking occupational information. Increased MORs in both men and women were observed among managers, science and engineering professionals, business and administrative professionals, clerks, customer service workers, metal and machinery trades, and stationary plant and machine operators, including miners. Sex-specific increases were also identified, with elevated odds among construction and electrical trades in men, and among health, education, sales, protective services, and agricultural labourers in women. These findings highlight the need for further investigation of occupational carcinogenic exposures and reinforce the importance of effective implementation of occupational health and tobacco control legislation.

Dr Melitah Motlhale

Bladder cancer mortality by major occupational category in South Africa, 2011–2015

Author(s): Motlhale, M.; Ramatsoma, H.; Naicker, N.; and Wilson, K.

Source: https://www.phbsa.ac.za/occupational-cancer-mortality-south-africa-2011-2015/

Summary: Bladder cancer is the ninth most common cancer in the world, and is ranked 13th in terms of mortality rate in 2020. The main risk factors for bladder cancer are tobacco smoking and occupational exposures (including working with aniline dye, aromatic amines, cables, and rubber in the electrical and glass manufacturing industries). This study aimed to identify occupations associated with an increased risk of bladder cancer mortality in South Africa. We conducted a cross-sectional study using Statistics South Africa mortality data (2011-2015) to describe the sociodemographic characteristics of persons aged 15–69 years who died of bladder cancer. We estimated the proportional mortality ratios (PMRs) to identify occupations associated with increased risk of bladder cancer mortality. Most deaths due to bladder cancer in South Africa during the period 2011–2015 were in males (65%). The highest proportional bladder cancer mortalities were recorded among those aged 50–69 years.

The main industries with significantly elevated PMRs for bladder cancer-related deaths were manufacturing, construction, wholesale, retail, motor repair, accommodation and food, and transport in men; and construction and educational services in women, compared with the general population. There is a need for policies and practices to reduce occupational risk factors.

Mr Hlologelo Ramatsoma

Oesophageal cancer mortality by occupation in South Africa: A five-year review from 2011 to 2015

Author(s):): Ramatsoma, H.; Motlhale, M.; Ramodike, J.; Naicker, N.; and Wilson, K.

Source: https://www.phbsa.ac.za/occupational-cancer-mortality-south-africa-2011-2015/

Summary: Oesophageal cancer ranks as the 11th most commonly diagnosed cancer worldwide and is the second leading cause of cancer-related deaths in South Africa. The two primary histological types, adenocarcinoma and squamous cell carcinoma, are strongly associated with lifestyle factors such as tobacco use, alcohol consumption, and obesity. Beyond lifestyle, occupation also contributes significantly to risk, with specific job categories globally linked to higher mortality. However, limited research exists on these associations within South Africa. To address this gap, Statistics South Africa (Stats SA) data from 2011–2015 were analysed for deaths among individuals aged 15–69 years. The study examined sociodemographic characteristics and calculated proportionate mortality ratios (PMRs) to identify high-risk occupations. Results showed oesophageal cancer accounted for 0.5–0.6% of all deaths across the five years. Males experienced higher mortality (0.7%) compared to females (0.5%), with individuals aged 55 years and older most affected (1.2%). The Eastern Cape province recorded the highest proportional mortality (1.0%). Elevated risks were found among male skilled forestry workers, building and trade workers, and machine operators, while female cleaners and helpers were also vulnerable. The findings emphasise targeted interventions, workplace safety measures, and improved occupational data collection to reduce incidence and mortality.

Ms Munyadziwa Muvhali

Allergic and non-allergic skin conditions among workers exposed to various substances in different mining industries: The value of patch-testing

Author(s): Muvhali, M.; and Fourie, A.

Source: Current allergy and clinical immunology. 38 (4). 1-9. https://orcid.org/0009-0002-6184-842X

Summary: Mine workers are exposed to many substances that can harm the skin, including air conditioners, solvents, chemicals, minerals, mining dust, and other materials. These exposures can cause different skin problems, especially allergic contact dermatitis (ACD) and irritant contact dermatitis (ICD).

In this study, patient records from the National Institute for Occupational Health (NIOH) skin disease clinic were reviewed. These records were for mine workers seen between 2010 and 2023. Of 142 records, nine were excluded, leaving 133 for analysis. The data were analysed using Microsoft Excel. The average age of workers was 39 years, and most were between 30 and 39 years old (35%). Most workers were male (87%). Most patients came from platinum mines (64%), followed by coal mines (13%). About 29% of workers reported a history of atopy (allergies). Irritant contact dermatitis (41%) was the most common diagnosis, followed by allergic contact dermatitis (32%). The main substances causing skin reactions were metals (41%), mine dust (30%), and explosives (29%). The hands were the most affected body part (33%), followed by the arms (18%). Almost all workers (98%) reported using personal protective equipment (PPE) such as gloves, boots, masks, or respirators. The European Standard Series (ESS) was the most commonly used patch-test series. The most common allergens found were nickel sulphate (13%) and potassium dichromate (9%). Even with safety measures in place, mining environments still contain many substances that can irritate or damage the skin. It is therefore important to find the exact cause of skin disease and determine whether it is work-related. This study shows that patch testing is very useful for diagnosing occupational skin disease, especially among workers exposed to multiple chemicals and materials. Patch testing should be a routine part of assessing skin disease in high-risk workplaces such as mines.

Dr Wells Utembe

Classification of dermal sensitizers under the globally harmonized system of classification and labelling of chemicals (GHS): A critical review of the principles and current challenges, Toxicology and Industrial Health Journal

Author(s): Utembe, W.; and Andraos, C.

Source: Toxicology and Industrial Health Journal. TIH-25-0122.R2

Summary: The Globally Harmonized System (GHS) is the international standard for labeling chemicals and informing workers about health risks, such as skin allergies. However, the current way these chemicals are tested to produce these labels has several gaps. First, current tests focus on the amount of a chemical it takes to cause a new allergy, but they often ignore the much lower amounts that can trigger a reaction in someone who is already allergic. This means current labels might not be strict enough to protect sensitive individuals. Second, while a skin allergy can take months or years of steady exposure to develop, most laboratory tests only assess short-term effects. This can result in chemicals being labelled as safe when, in fact, they are not. Additionally, the GHS system assumes that one develops a skin allergy only by touching a substance, overlooking that breathing certain chemicals can also cause a skin reaction. Finally, current tests do not account for photosensitisers, i.e., chemicals that become toxic only when exposed to sunlight. To truly protect workers, we must move beyond these limitations and account for long-term exposure, breathing risks, and the effects of UV light, etc.

Dr Jeanneth Manganyi

A new bivariate respirator fit test panel representing Black South African respirator users

Author(s):): Manganyi, J.; Rees, D.; Brosseau, L.M.; and Wilson, K.

Source: Annals of Work Exposures and Health, 2025, 00, 1–9. https://doi.org/10.1093/annweh/wxaf083

Summary: Respirators made in South Africa and elsewhere for use by South African workers are commonly tested against non-South African respirator fit test panels (RFTPs) such as those for the United States and the Chinese population. A respirator fit test panel is developed using face size (face width and face length) distributions representative of the intended respirator users. Our study evaluated the applicability of these panels to Black South Africans. Face width and face length of Black South African respirator users were overlaid on the NIOSH and Chinese bivariate RFTPs to determine their applicability by checking distribution within the panels. Our study showed that the NIOSH and Chinese bivariate panels do not adequately represent the Black South African population, and that respirators designed and tested using these panels are likely to result in an undesired fit for Black South Africans. Thus, a new bivariate panel representative of Black South Africans was developed. The final Black South African bivariate panel contains more than 97% of the study population with a more even distribution of subjects within the cell and panel boundaries. The newly developed bivariate panel should be validated in future studies.

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Venue: Online

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For more information, please contact
NIOH's Waterborne Pathogen Unit: Immunology@nioh.ac.za


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SAIOH Annual Conference 2026 in collaboration with the NIOH
Date: 28 Sept - 1 Oct 2026
Venue: Thaba Eco Hotel, Johannesburg
Theme: Building Stronger Partnerships for Healthier Workplaces
The NIOH celebrates 70 years of excellence and impact in 2026
SAIOH
NATIONAL INSTITUTE FOR OCCUPATIONAL HEALTH
Division of the National Health Laboratory Service

Seven decades of advancing occupational health, safety, and wellbeing

By Simphiwe Yako and Zinhle Mapumulo

In 2026, the National Institute for Occupational Health (NIOH) marks 70 years of commitment to protecting and advancing the health, safety, and wellbeing of workers in South Africa. Over seven decades, the Institute has evolved from a modest Pneumoconiosis Research Unit into a nationally and internationally recognised centre of excellence in occupational and environmental health and safety. Today, the Institute integrates cutting-edge research, specialised services, and capacity-building training to address the increasingly complex challenges of the modern workplace.

The origins of the NIOH are deeply rooted in South Africa's mining history, a sector that shaped the country's economy while exposing generations of workers to severe occupational health risks. Mining activity in South Africa dates back to 1867, when diamonds were discovered near Kimberley in the Northern Cape. This was followed by the discovery of gold on the Witwatersrand in 1886, a pivotal moment that accelerated industrialisation and transformed the country's social and economic landscape.[1]

As mining operations on the Witwatersrand expanded rapidly, the human cost of industrial progress became evident. Miners developed debilitating respiratory diseases, most notably silicosis, often referred to at the time as "miners' phthisis."[2] Miners had to dig for gold locked in quartz veins, a rock that also contains high concentrations of silica. When inhaled over time, fine silica dust causes irreversible lung damage, leading to severe illness and premature death.[3] These realities underscored the urgent need for scientific investigation and institutional intervention.
In response to growing concerns about occupational disease, the South African Institute for Medical Research (SAIMR) was established in 1912 as an independent body by the Government of the Union of South Africa and the Witwatersrand Native Labour Association, on behalf of the Transvaal Chamber of Mines. Its mandate was to conduct research on the prevention and treatment of human disease. By the early 1920s, SAIMR had begun investigating the clinical and pathological aspects of dust-related lung diseases, laying the groundwork for occupational health research in South Africa.[2]

A major turning point came with the promulgation of the Silicosis Act of 1946, which introduced compensation for miners with pulmonary disability. This landmark legislation created an urgent need for a coordinated research into occupational lung disease. In response, SAIMR, in collaboration with the Department of Mines,

established the Pneumoconiosis Research Unit (PRU) in 1953. By 1956, following recommendations from the Department of Mines, the PRU was incorporated into a newly created entity under the Council for Scientific and Industrial Research (CSIR),

firmly positioning it as the direct predecessor of what would later become the NIOH.[2]

The PRU was structured as a multidisciplinary institution, comprising four divisions: Pathology, Statistics, Dust and Engineering, and Physiology.[4] This integrated approach provided a strong scientific foundation for future growth. The Pathology division, administered by SAIMR, also cemented a lasting partnership between the emerging occupational health institute and South Africa's broader medical research community – a collaboration that continues today through the National Health Laboratory Service (NHLS).

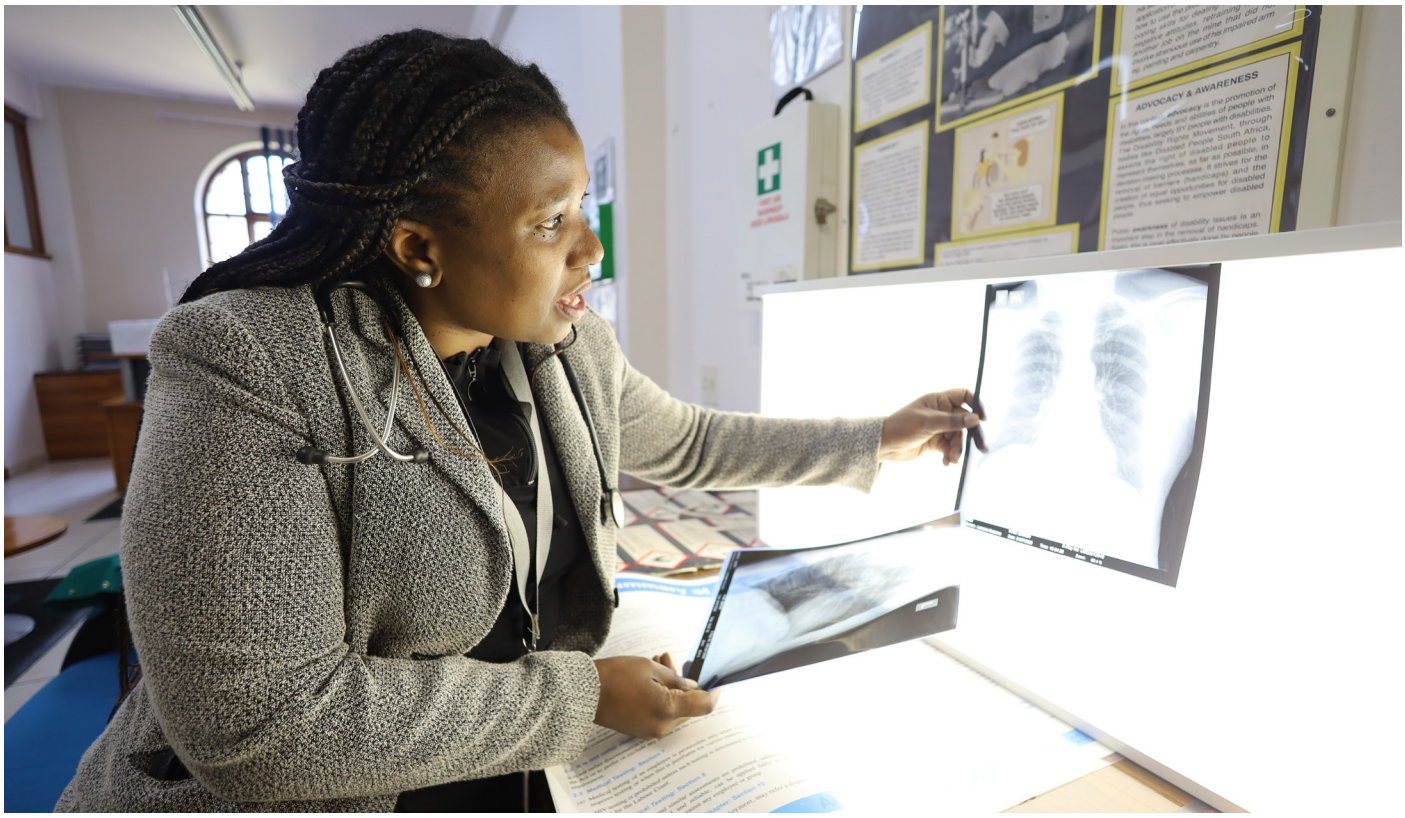
By the late 1960s, it was increasingly evident that occupational health challenges extended far beyond the mining industry. In 1971, the PRU was reconstituted as the National Research Institute for Occupational Diseases (NRIOD), with an expanded mandate to address workers' health and safety across all sectors of the economy.[2] This transition enabled the institute to undertake research, conduct field investigations, and provide diagnostic and advisory services to improve workplace conditions and support both labour organisations and employers.

In 1979, following recommendations from the Erasmus Commission, the NRIOD was transferred to the Department of Health and became the National Centre for Occupational Health (NCOH). This move was intended to integrate occupational health into a national health system and establish a coherent framework for research, training, and service delivery. However, the broader policy environment did not fully support this vision.[2]

As Prof David Rees explained in the Occupational Health Southern Africa September 2006 issue: "It was the intention of the Erasmus Commission that the NCOH would be part of a coherent national occupational health system governed by the Department of Health. As it turned out, overall control of occupational health did not go to the Department of Health, and the NCOH operated in a fragmented system and in the absence of a national occupational health policy. At the same time, international isolation of South Africa gained momentum, and the NCOH, previously very much part of a worldwide network, became increasingly cut off from scientific and professional contacts."[2]

For more than a decade, the NCOH, like many South African institutions, navigated significant structural and political challenges. Relief came with the advent of democracy in the early 1990s, which ushered in renewed commitment to health system reform. Among the most significant developments was the establishment of the Minister of Health's Committee on Occupational Health, whose report, known as the Abdullah Report, was released on 7 January 1996. The report provided a framework for delivering occupational health services at the appropriate national, provincial, and district levels within the public sector.

The following year after the Abdullah Report was released, the NCOH underwent a comprehensive restructuring process aimed at strengthening institutional effectiveness and aligning its operations with emerging occupational health priorities.4 A new organisational framework was approved to ensure that the centre's work supported the development of robust occupational health services across the country.



This process ultimately led to the reconstitution of the institute as the National Institute for Occupational Health (NIOH). Importantly, the reform reflected a growing recognition of the changing nature of work, including the increasing relevance of ergonomic risks, psychosocial hazards, and the need to retain workers in the labour force as central concerns in modern occupational health practice.

The passage of the National Health Laboratory Service Act (Act 37 of 2000) marked another defining moment in the NIOH's history.

The NCOH, now NIOH, became a specialised division of the NHLS, focusing on occupational and environmental health. Its mandate was to develop and support occupational health services and strengthen its research and training programmes in support of local, provincial, and national stakeholders.

Over the years, the NIOH has made significant strides in fulfilling this mandate. These efforts have firmly positioned the Institute as a respected leader in occupational health, recognised nationally and internationally for excellence in research, service delivery, and training.

The NIOH's journey is one of resilience, adaptation, and enduring impact. From its origins in mining pathology to its current multidisciplinary mandate, the Institute has consistently responded to the needs of South Africa's workforce.

References

1. https://www.gov.za/about-sa/history
2. Rees DJ, Ross MH, Davies JCA, Occupational Health Southern Africa 2016 p5-7 chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.occhealth.co.za/_assets/articles/166/631.pdf
3. https://www.tshiamisotrust.com/about/origins/#:~:text=The%20history%20of%20silicosis%20in%20South%20Africa%20dates%20from%20the,significant%20respiratory%20damage%20if%20inhaled.
4. JCADavies, Occupational Health Southern Africa, 2006, p11-19 chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.occhealth.co.za/_assets/articles/166/622.pdf

The evolution of Occupational Health

By Dr Kerry Wilson

Occupational health has evolved in response to modes of production, shifting societal values, and advances in scientific understanding.

Occupational Health started with early descriptive observations of workers' diseases and mortality. These clinical observations preceded germ theory and the understanding of disease mechanisms. Classical references to respiratory ailments appear in the writings of Hippocrates and Pliny the Elder, but these observations remained largely anecdotal. These were followed by similar clinical observations in the late 1500's such as those by Agricola G (1556) and Paracelsus T (1565)
In 1700, Bernardino Ramazzini's De Morbis Artificum Diatriba established occupational health as a distinct field. This book provided systematic documentation of diseases associated with over 50 occupations. These diseases ranged from exposure to toxic chemicals to muscular strain from physical activity. But the book went further, recommending preventive measures for many of the diseases. Thus, he is recognised as the father of Occupational Health. Ramazzini insisted that doctors ask all patients about their occupation, a measure still not implemented today.

Over time, society came to reject the idea that dangerous work was inevitable. In the United Kingdom, the Factory Acts of the 1800s were among the earliest statutory interventions to regulate workplace conditions, marking a critical shift toward public responsibility for workers' health and safety (British Nursing Institute). Following this, compensation systems were established under the British Workmen's Compensation Act 1897 and, in South Africa, the Workmen's Compensation Act (WCA) of 1914 was the first formal legislation to address workplace injuries. The 1917 amendments extended coverage to include specific industrial diseases. These advances were fundamentally reactive, focusing on compensation and minimal standards rather than prevention.

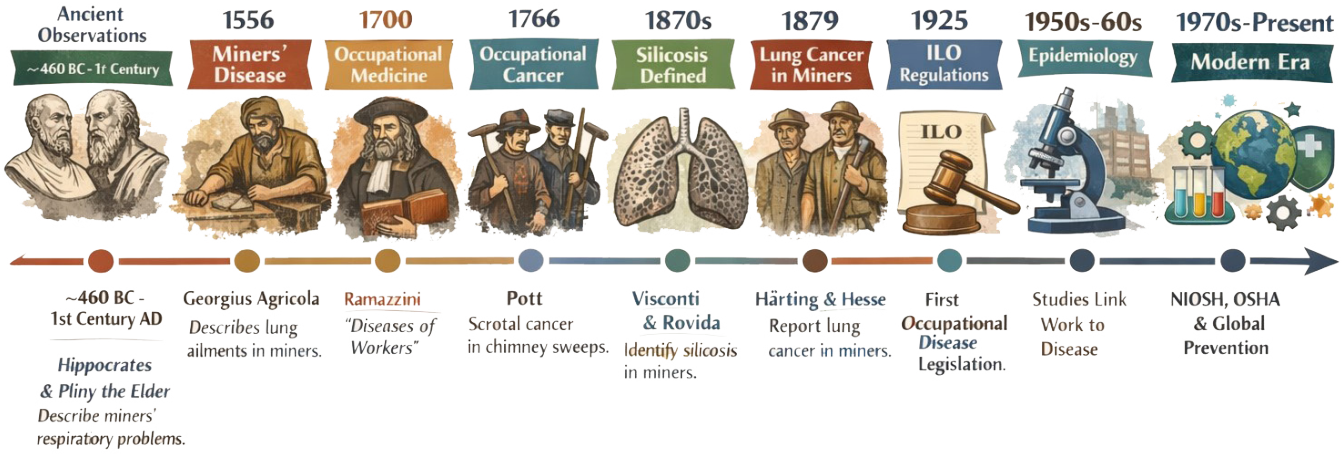
The maturation of occupational health from the 1920s was accompanied by the development of industrial hygiene and exposure science (Carter T, 2004). At the same time, epidemiological methods and exposure measurement established the causes of some occupational diseases (Passey RD 1922, Pirchan and Sikl, 1932) and occupational exposure limits were developed. (Borak and Brosseau 2015)

The founding of international institutions such as the International Labour Organisation and the World Health Organisation reinforced the idea that safe and healthy working conditions were a fundamental human right (ILO). South Africa ratified its first ILO convention in 1921, COO4.

Globalisation, digitalisation, and precarious employment have altered exposure profiles in ways that challenge traditional surveillance systems. Psychosocial hazards—once peripheral to occupational health—have become concerns. In conclusion, the history of occupational health is marked by significant milestones that reflect both

scientific advancement and societal change. Understanding where the discipline has come from clarifies where it must go. Occupational health will remain relevant if it continues to evolve in step with work itself, guided by science, ethics, and a commitment to the health and dignity of workers.

Timeline of Occupational Disease Recognition



References

British Nursing Institute: evolution of occupational health nursing. https://bns.institute/community-health-nursing/evolution-occupational-health-nursing/
Borak J, Brosseau LM. The Past and Future of Occupational Exposure Limits. J Occup Environ Hyg. 2015;12 Suppl 1(supl):S1-3. doi: 10.1080/15459624.2015.1091263. PMID: 26366622; PMCID: PMC4685575.
Carter T. British occupational hygiene practice 1720-1920. Ann Occup Hyg. 2004 Jun;48(4):299-307. doi: 10.1093/annhyg/meh033. Epub 2004 May 17. PMID: 15148054.
Agricola, G. (1556). De Re Metallica.
Passey RD. Experimental soot cancer. Br Med J. 1922;ii:1112–1113
Paracelsus T. Von der Bergsucht oder Bergkranckheiten drey Bücher. 1567
Pirchan, A., and H. Sikl. 1980. Cancer of the lung in the miners or Jachymov (Joachimsthal). Am. J. Cancer 4:681–722, 1932
Ramazzini, B. (1940). De Morbis Artificum Diatriba [Diseases of Workers] (W. C. Wright, Trans.). University of Chicago Press. (Original work published 1700).

Implementation of the Physical Agents Regulations

By Ms Karen du Preez

The Physical Agents Regulations (PAR) was promulgated on 6 March 2025 under the Occupational Health and Safety Act 85 of 1993 (OHS Act), and will come into effect on 6 September 2026, effectively replacing the Environmental Regulations for Workplaces (ERW).1,2,3 The PAR provides long-awaited Occupational Exposure Limits (OELs) and guideline levels applicable to some of the physical agents not previously covered in the ERW.

The PAR defines a physical agent as a source of energy which may result in injury or disease after exposure, and includes cold, heat, vibration, non-ionising radiation and illumination. As indoor air quality is directly impacted by sources of energy, it is included in the PAR.

The Regulations specify requirements with regard to providing information, instruction and training to employees that may be exposed to physical agents, the duties of persons that may be exposed, risk assessment, exposure monitoring, medical screening and medical surveillance. It further instructs on the prevention or control of exposure, the provision of personal protective equipment and facilities where applicable, and the maintenance of all implemented control measures.[1]

The PAR instructs employers and self-employed persons to conduct a risk assessment in workplaces where any person may be exposed to physical agents. The risk assessment needs to be conducted by a competent person as defined in the PAR, and needs to consider how each physical agent can affect men, women, young employees and vulnerable employees. Suitable control measures specific to each applicable category must be recommended, and the employer must develop a documented action plan for the implementation of these recommendations.[1]

The employer must ensure that medical screening and medical surveillance as described in the PAR is implemented under the guidance of an occupational medical practitioner, if the risk assessment identified the need, or where vulnerable employees are concerned.[1]

Where the risk assessment identified potential exposure at or exceeding the limit values, or outside recommended ranges, representative exposure monitoring needs to be done by a competent person to quantify exposure, and the results need to feed back into the risk assessment.

This implies that the risk assessment should always be the starting point of occupational exposure management, and is a prerequisite for exposure monitoring.

The definition of a competent person in terms of exposure monitoring, has an additional requirement related to qualifications applicable to the specific physical agents to be monitored.[1] The competent person must be able to select appropriate methodology for monitoring applicable to each exposure scenario, interpret monitoring results accurately, and recommend suitable control measures.

Personnel competence forms an integral part of the requirement for South African National Accreditation System (SANAS) accreditation under ISO/IEC 17020: Conformity assessment – Requirements for the operation of various types of bodies performing inspection.[4] SANAS accreditation under ISO/IEC 17020 is a prerequisite to obtain certification from the Department of Employment and Labour (DEL) as an AIA for Occupational Health and Hygiene.[5] Competence as defined by SANAS includes education, training, technical knowledge, skills and experience. Personnel competence, as declared by the AIA, is verified by SANAS during assessments.

Although the PAR does not specify that exposure monitoring must be done by an AIA, it places a duty on the employer to ensure that they secure the services of a person duly competent in the full scope of work contracted. By obtaining the services of a reputable SANAS accredited AIA, the employer can be confident that work within the AIAs scope of accreditation should be performed by a person registered with the Southern African Institute for Occupational Hygiene (SAIOH), who was declared competent by the AIA, as verified by SANAS. Through the implementation of a comprehensive, documented quality management system, work not included in the AIAs scope of accreditation are likely to follow the same quality management principles. The employer may further request the AIA to confirm competence for the specific work required prior to securing their services.

1. Department of Employment and Labour, Republic of South Africa. Occupational Health and Safety Act: Physical Agents Regulations. South African Government; 2024.
2. Department of Employment and Labour, Republic of South Africa. Occupational Health and Safety Act No 85 of 1993, as amended by the Occupational Health and Safety Amendment Act No 181 of 1993. South African Government; 1993.
3. Department of Employment and Labour, Republic of South Africa. Occupational Health and Safety Act: Environmental Regulations for Workplaces. South African Government; 1987.
4. South African National Standard (SANS) 17020:2012. Conformity assessment – Requirements for the operation of various types of bodies performing inspection. Ed 2. South African Bureau of Standards; 2012.
5. Department of Employment and Labour, Republic of South Africa. Requirements for approval as an Approved Inspection Authority: Occupational Health and Hygiene. South African Government; 2024.

Lung cancer in the workplace

What: Certain occupations carry a higher risk of exposure to lung cancer risk factors, including hazardous substances and environmental pollutants.

Who: The Public Health Bulletin South Africa cancer series highlights occupations with increased exposure risks.

Occupations at higher risk: Workers in metal machinery and trades, as well as stationary plant and machine operators (including miners), face elevated exposure to lung carcinogens. Certain technical, engineering, and industrial roles may also carry increased risk depending on environmental conditions and safety measures in place.

So what? Employers and workers' unions should advocate for stronger workplace health and safety reforms to reduce occupational exposure. These include:

- Improved ventilation and dust control
- Mandatory use of personal protective equipment (PPE)
- Regular health screenings
- Strengthened occupational health surveillance

Read more about the cancer series here.

SERVICE DELIVERY

By Ms Karen du Preez

Profiling the NIOH Epidemiology and Surveillance Section

The NIOH Epidemiology and Surveillance Section offers a comprehensive suite of Epidemiological and Biostatistical services designed to support high-quality, evidence-based research, including the delivery of customised training programmes. These services are tailored to address the diverse needs of academic researchers, public health professionals, research institutions, and industry stakeholders, ensuring relevance, rigour, and impact across various sectors.

1. Epidemiological Services

Our section provides epidemiological support throughout the entire research life cycle, including guidance on selecting the most suitable study design (e.g., cross-sectional, cohort, or case-control) based on research objectives and feasibility. Our services include assistance with drafting and refining research protocols to ensure scientific rigour, ethical integrity, and regulatory compliance. The section provides support for the development and strengthening of epidemiological surveillance systems to monitor diseases, exposures, and health events. The section conducts robust risk factor analyses to identify and quantify associations between exposures and outcomes. In addition, our team designs and validates high-quality data collection instruments, including questionnaires, interview guides, and REDCap-based digital tools. And guides ethics submissions and compliance with national and institutional requirements.

2. Biostatistics Services

Our biostatistics team provides analytical services to ensure methodological rigour and statistical validity across research projects. This includes determining optimal sample sizes and power to achieve adequate precision, developing statistical analysis plans aligned with the study design, objectives, and data types, and applying appropriate descriptive and parametric and non-parametric inferential statistical methods, such as Student's and Welch t-tests, Pearson's chi-square tests, and Kruskal-Wallis test, to answer your research questions.

Advanced regression and predictive modelling are offered, including linear, logistic, Poisson, and Cox regression, as well as survival analysis using Kaplan–Meier curves and Cox proportional hazards models for longitudinal data. Support extends to data management and cleaning, advanced modelling and simulation using multivariate, longitudinal, hierarchical, and Bayesian approaches, and expert use of Stata statistical software for code development, analysis, and training. Clear, publication-ready interpretation and reporting of results is also provided, including visualisations, tables, and statistical commentary for research reports, manuscripts, or funder submissions.

3. Teaching and Training

The Epidemiology and Surveillance section offers teaching and capacity-building services in epidemiology and biostatistics to NIOH, NHLS, and academic institutions such as the University of Johannesburg, the University of Witwatersrand, and the University of Pretoria, as well as to various research teams, public health professionals, and industry stakeholders. The section's training programmes are designed to strengthen foundational knowledge and applied skills, using real-world datasets, case studies, and hands-on epidemiological and statistical software exercises.

The training offerings cover introductory to advanced courses in epidemiological study design, data collection, and analysis, complemented by biostatistics workshops covering descriptive statistics, hypothesis testing, regression, and survival analysis. Participants also receive hands-on software training in Stata V.19.5 (StataCorp, College Station, Texas, USA), Microsoft Excel, and REDCap. The training includes creating and managing questionnaires for research projects in public health and occupational health, as well as for epidemiological data collection. In addition, our team provides short courses and modular training tailored for in-service professionals, postgraduate students, and research interns.

4. Applied Epidemiology Services for Corporate Stakeholders

The section provides specialised epidemiological services tailored to the operational needs of companies (e.g., mining companies) and other workplaces. These services support evidence-informed decision-making, compliance, and strategic planning in occupational health.

We provide comprehensive support for occupational health data management, including analysis of routine workplace data such as exposure records and medical surveillance information to identify risks and trends. Our services cover the design, evaluation, and improvement of occupational health surveillance systems, as well as interpretation, visualisation, and reporting of key indicators such as absenteeism, incidents, and environmental monitoring data. We also guide organisations in selecting compliant occupational health information systems to support effective and proactive workplace health management.

Contact Information

To discuss your research needs or request a quotation, please contact:

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0117126427
Epidemiology and Surveillance
National Institute for Occupational Health
Division of the National Health Laboratory Service
25 Hospital St, Constitution Hill, Johannesburg

SAVE THE DATE

National Institute for Occupational Health

Biennial Research Day 2026

Date: 26th November 2026
Theme: From Exposure to Evidence: Transforming Occupational Health Through Research
Venue: Johannesburg

For more information, please contact
Research.relations@nioh.ac.za

NATIONAL INSTITUTE FOR OCCUPATIONAL HEALTH
Division of the National Health Laboratory Service

MENTAL HEALTH AT WORK WEBINAR

Hosted by: NIOH Occupational Medicine Section

CPD ACCREDITED

Date: Friday, 27 March 2026 | **Time:** 08:30 – 16h00 | **Venue:** Online | **Price:** R900
CPD Points: 6 general & 1 ethical
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Aim: To protect and promote mental health at work

Key Discussion Topics
Mental Health at Work: Scale and impact of mental health challenges at work

Governance & Decent Work: Occupational health programmes and legislative frameworks

Prevention & Management: Common conditions, risk factors, early detection and response strategies

Protection & Investment: Building sustainable workplace mental health programmes

Target Audience
Occupational Health Program managers/ coordinators | Occupational Medicine Practitioners/Specialists | SHERQ Managers | HR managers | Organised labour Organisations | Wellness Managers | EAP managers/ coordinators

For more information, please contact Sr Buffel / Dr Ndaba: OccuMedicine@nioh.ac.za

#mentalhealthatworkmatters

Time	Topic	Speaker/Presenter
08h15-08h30	Registration	
08h30-08h45	Welcome	Prof S Kgalamono (NIOH-Executive Director)
08h45-09h30	Overview of mental health in the workplace	Dr Itumeleng Ntatamala (WC Department of Health & UCT)
09h30-10h15	Legislation governing mental health in the workplace	Ms Bulelwa Huna (DOEL)
10h15-10h30	Q & A	Mr Ashraf Ryklief (NIOH)
10h30-11h00 | Break & Tea/Coffee		
11h00- 11h15	Online Individual exercise (Assessment)	Sr Goitsimang Buffel/ Dr Ndaba (NIOH)
11h15- 12h00	Formulating workplace mental health programs	Dr Tshepo Sedibe (DeBeers)
12h00- 12h45	The Spectrum of mental health conditions in the workplace	Expert psychiatrist
12h45-13h00	Q & A	Mr Ashraf Ryklief (NIOH)
13h00-13h45 | LUNCH		
13h45- 14h15	Medical surveillance and screening tools for mental health	Dr Reginald Setlhakgoe (Private practice & Wits SPH)
14h15- 14h45	Compensation for mental health conditions in SA	Dr Lucas Mosidi (RMA)
14h45- 15h30	EAP- supporting mental health programs in the workplace	Mr Alon Lits (Private Practice)
15h30-15H45	Q & A	Mr Ashraf Ryklief (NIOH)
15H55-16H00	Closure	Dr Mpho Rakgoale (NIOH-Centre Head: Occupational Medicine)

#mentalhealthatworkmatters

NIOH SERVICES

Section	Services	Contact person
Analytical Services	Analytical Services provides a broad range of users with analytical services expertise in occupational hygiene, biological monitoring, and some clinical laboratory tests.	Head of Section Dr Puleng Matatiele Tel: 011 712 6477 Email: PulengM@nioh.ac.za
Immunology & Microbiology	The Immunology and Microbiology section consists of three units: Occupational Allergy, Waterborne Pathogens and Bioaerosol. The Occupational Allergy Unit provides diagnostic tests to identify workplace agents that cause respiratory and skin diseases. The Occupational Skin Disease Clinic also offers consultations with a dermatologist. Waterborne Pathogens Unit (WBPU) conducts monthly microbiological testing of potable water from workplaces to ensure compliance with the SANS 241 drinking water standard. It also analyses non-potable water samples to ensure they meet microbiological safety standards for their designated occupational use. The Bioaerosol Unit identifies bacteria and fungi in environmental air samples taken from the workplace and performs efficacy testing on air disinfection devices, such as ultraviolet germicidal irradiation (UVGI). In addition, the unit performs risk assessments for Hazardous Biological Agents (HBA) in different workplaces.	Head of Section Ms Edith Ratshikhopha Tel: 011 712 6475 Email: EdithR@nioh.ac.za
Information Services and Training	**Archive** Documenting and preserving the institutional memory and create access points to the rare and unique information resources showcasing how the institute has evolved over time. These records stretch as far as 1912, they include personal papers, conference papers, registers, obsolete instruments, photographs etc.	Mr Simphiwe Yako Tel: 011 712 6518 Email: simphiwey@nioh.ac.za
Pathology Division	**Training laboratory technical staff:** The laboratory performs practical training of technical laboratory staff enrolled as medical laboratory scientists, and laboratory technologists in the histopathology disciple.	Ms Busisiwe Mkhonza Tel: 011 712 6519 Email: BusisiweM@nioh.ac.za

Section	Services	Contact person
Toxicology and Biochemistry	**United Nations Globally Harmonised System of Classification and Labelling of Chemicals (UNGHS)** The Toxicology Department facilitates the UNGHS workshop to train individuals who handle hazardous chemicals in their workplaces in the identification and management of chemical hazards according to GHS classification criteria.	Dr Wells Utembe Tel 0117126741 Email: wellsu@nioh.ac.za
Occupational Medicine	**Advisory services** Advisory services on the prevention and management of occupational diseases and disorders offered to organizations within the SADC region.	**Occupational Medicine Specialist referral clinic:** Mr Jacob Senamolela Tel: 011 712 6462 Email: JacobSe@nioh.ac.za
Occupational Hygiene	**Occupational Hygiene Training Association (OHTA) Modules** The Occupational Hygiene Section is an approved OHTA trainer, and provide training on the following modules: Foundation level: • OHTA201 Basic principles in Occupational Hygiene Intermediate level – core modules: • OHTA501 Measurement of Hazardous Substances • OHTA503 Noise – Measurement and its effects • OHTA505 Control of Hazardous Substances • OHTA507 Health effects of Hazardous Substances Intermediate level – optional modules: • OHTA502 Thermal Environment. • OHTA504 Asbestos and other fibres. • OHTA506 Ergonomics Essentials.	Dr Jeanneth Manganyi Tel: 011 712 6406 Email: JeannethM@nioh.ac.za
Epidemiology & Surveillance	**Trianing and services:** Epidemiology and Biostatistics Training: • Basic and Advanced courses. • How to use routine surveillance data to improve the health of workers. • How to use REDCap Protocol development for research on Occupational exposures and Health outcomes. • Development of REDCap tools and other data collection tools. • Research on work exposures and health outcomes in the workplace.	Asanda Jekwa Email: AsandaJ@nioh.ac.za

Section	Services	Contact person
	Services: • Analyses of routine medical surveillance data. • Developing analysis plans for surveillance data. • Literature Reviews on occupational health topics. • Evaluation of Surveillance systems. • Advice and guidance around developing a surveillance system or advice for selecting a service provider for surveillance tools. • Designing or conducting occupational health screening surveys along with staff satisfaction and mental health surveys in your workplace. • Evaluation of training programs in occupational hazards, health and safety.	

NATIONAL INSTITUTE FOR OCCUPATIONAL HEALTH

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