

**IN THE LABOUR COURT OF SOUTH AFRICA
HELD IN JOHANNESBURG**

Case No.: J427/2020

In the matter between:

**ASSOCIATION OF MINEWORKERS AND
CONSTRUCTION UNION**

Applicant

and

**MINISTER OF MINERAL RESOURCES
AND ENERGY**

First Respondent

CHIEF INSPECTOR OF MINING

Second Respondent

**MINISTER OF CO-OPERATIVE
GOVERNANCE AND
TRADITIONAL AFFAIRS**

Third Respondent

MINERALS COUNCIL SOUTH AFRICA

Fourth Respondent

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SIGNED AT JOHANNESBURG ON THIS THE 20th OF APRIL 2020.

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(Please contact us on email or cellphone during lockdown)

Ref: Roos/Kahn/AMCU Covid-19

TO: **REGISTRAR OF THE ABOVE HONOURABLE COURT**

Johannesburg

Urgent Roll Section

Ms F Ntuli

Email: fntuli@judiciary.org.za

Cell: 082 778 6295

AND TO: **MINISTER OF MINERALS RESOURCES AND ENERGY**

First Respondent

Department of Mineral Resources and Energy

C/o State Attorney

Johannesburg Office

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Second Respondent

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SERVICE BY EMAIL

AND TO: **MINISTER OF COOPERATIVE GOVERNANCE**

AND TRADITIONAL AFFAIRS

Third Respondent

Department of Cooperative Governance and Traditional Affairs

C/o State Attorney

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AND TO: **MINERALS COUNCIL OF SOUTH AFRICA**

Fourth Respondent

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SERVICE BY EMAIL

RICHARD SPOOR INC

ATTORNEYS



Your reference:

Our reference: AMCU/Spoor/Kahn

Date: 20 April 2020

Directed to: Ms F Ntuli
Registrar
Labour Court – Johannesburg

PER EMAIL: fntuli@judiciary.org.za

Dear Ms Ntuli,

Re: REQUEST FOR URGENT ENROLLMENT: AMCU // MINISTER OF MINERAL RESOURCES AND THREE OTHERS

- 1 Today, the Association of Mineworkers and Construction Union (“AMCU”) seeks to issue, serve, and file an urgent application against the Minister of Mineral Resources and three other respondents regarding the regulation of mines during the lockdown.
- 2 The directive issued by the Judge President in respect of access to the Labour Court during the period of lockdown dated 14 April 2020 requires parties to explain “in full detail why the matter is considered to be so urgent that it must be considered in this period of lockdown.” We seek to do so in this letter. We record that we are on standby to answer any queries you may have telephonically or by email.
- 3 AMCU is a registered trade union with over 200 000 members, approximately 100 000 of whom are mineworkers.
- 4 On 16 April 2020, the Minister of Mineral Resources announced that coal mines would be permitted to operate at full capacity and all other mines may operate at 50% capacity.
- 5 As there are a half million mineworkers across South Africa, this means that over 250 000 mineworkers will soon return to work.
- 6 Returning mineworkers will face intense risks of Covid-19 infection.

RICHARD SPOOR INCORPORATED
REGISTRATION NUMBER: 2011/011048/21

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JOHAN LORENZEN / ASSOCIATE • ELGENE ROOS / ASSOCIATE • DASANTHA PILLAY / ASSOCIATE • FARHAN CASSIM / ASSOCIATE • MARTIN MGIBA / ASSOCIATE
JULIE BROSENS / CONSULTANT (CONVEYANCER) • ELISHA KUNENE / CANDIDATE ATTORNEY • CATHERINE MARCUS / CANDIDATE ATTORNEY

- 7 Despite this risk, the Minister of Mineral Resources and Energy and the Chief Inspector of Mines have decided not to exercise their powers under the Mine Health and Safety Act 29 of 1996 to impose binding obligations on employers to protect mineworkers from the Covid-19 pandemic. The regulations concerning mining that have been passed by the Minister of Co-operative Governance and Traditional Affairs are woefully inadequate to ensure that mineworkers are protected from Covid-19.
- 8 AMCU believes that this failure will jeopardise the health of a quarter million mineworkers, as well as their host communities. AMCU's belief is supported by an expert opinion from four Professors who are leading authorities in the sphere of public health and occupational medicine in South Africa.
- 9 AMCU's repeated efforts to engage with the Minister and Chief Inspector have been ignored or rebuffed.
- 10 As a last resort, AMCU brings this urgent application to review and set aside the Minister and Chief Inspector's decisions to not impose binding obligations under the MHSA (or their failure to decide whether to do so), together with alternative relief. It seeks, in the alternative, to review and set aside the regulations enacted by the COGTA Minister under the Disaster Management Act 57 of 2002.
- 11 AMCU also seeks preliminary relief to ensure that employers are notified of the application and able to join should they so choose, and to direct that the main application can be heard on Zoom or a similar digital video system. The applicant's attorneys undertake to set up the Zoom or similar system, so that the Court and other parties will simply have to dial in via a link in an email.
- 12 The relief AMCU seeks is directly related to the implementation of the lockdown and whether or not the Covid-19 pandemic will be defeated. If the matter is not heard urgently during the lockdown, the harm AMCU and its experts warn of will have occurred by the time the matter is heard. That harm will be irreparable. Not only will mineworkers have contracted Covid-19, but they would have passed the disease onto their communities. The health and lives of many thousands of mineworkers is at stake.

- 13 The relief AMCU seeks will also mitigate the risk to mineworkers and their communities who return to work after the lockdown has ended. This is essential as the pandemic may remain a reality until the end of the year, or into the next.
- 14 In the circumstances, we respectfully ask that the Judge on duty consider the matter and:
- 14.1 hear AMCU's application for preliminary relief pertaining to service at 14h00 on Tuesday, 21 April 2020 or as soon thereafter as the Judge on duty is available; and
- 14.2 hear AMCU's application for final relief at 10h00 on Tuesday, 28 April 2020 or such other date and time as may be determined by the Judge on duty in the week of 28 April 2020, with due regard to the urgency.
- 15 A copy of the draft notice of motion is attached for purposes of further information in relation to the application. The affidavits are in the process of being finalised and signed. If necessary, unsigned drafts can be made available. The full signed application will be sent by email as soon as possible this afternoon.
- 16 AMCU confirms that its legal representatives will serve this application on the respondents electronically, followed up by telephonic confirmation of receipt, and report to the Court on affidavit regarding its effort to serve on the respondents prior to the hearing of the matter.
- 17 As stated above, we are on standby to answer any question or concern that you or the Judge on duty may have at the phone numbers below. We have briefed Adv Alan Dodson SC and Adv Michael Bishop as counsel for AMCU in this matter.

Yours faithfully

(Signed electronically)

Richard Spoor – (083) 627-1722

George Kahn – (082) 851-6103

Elgene Roos – (083) 312-9406

And to: Mr Gwede Mantashe
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And to: Mr David Msiza
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David.Msiza@dmr.gov.za

And to: Dr Nkosazana Dlamini-Zuma
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And to: Minerals Council
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mmotlhamme@mineralscouncil.org.za

**IN THE LABOUR COURT OF SOUTH AFRICA
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Case No.: _____/2020

In the matter between:

In the matter between:

**ASSOCIATION OF MINEWORKERS AND
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CHIEF INSPECTOR OF MINING

Second Respondent

**MINISTER OF CO-OPERATIVE
GOVERNANCE AND
TRADITIONAL AFFAIRS**

Third Respondent

MINERALS COUNCIL SOUTH AFRICA

Fourth Respondent

NOTICE OF MOTION

PART A

KINDLY TAKE NOTICE THAT the the Applicant will apply at the above Honourable Court on Tuesday 21 April 2020 at 14h00, or as soon thereafter as the matter may be heard for an order in the following terms:

- 1 The Applicant's non-compliance with the ordinary Rules of Court, including the manner of service, and with the rules and other statutory instruments relating to the commissioning of affidavits, is condoned and the matter is enrolled on the urgent roll.

- 2 The parties' legal representatives are permitted to make oral representations during Part A and Part B of the matter's hearing through Zoom or similar electronic means as directed by the urgent court duty judge.
- 3 The parties are directed to publish this application to enable mining companies to consider joining this application as follows:
 - 3.1 The Applicant and the Fourth Respondent must place this application on their websites within 8 hours of the grant of an order under Part A;
 - 3.2 The Third Respondent must place this application on its website on its dedicated page for Covid-19 within 8 hours of the grant of an order under Part A;
 - 3.3 The Applicant and the Fourth Respondent must publish a link to this application on the parties' Facebook and Twitter accounts, if any;
 - 3.4 The Fourth Respondent must distribute this application to all its members by email, provided that it will be sufficient compliance if the Fourth Respondent emails a link to the application on its website.
 - 3.5 The Applicant must publish a short notice in the Business Day newspaper and, if the publishing format permits this, the Business Report supplement that accompanies certain newspapers in the Independent Media Group, briefly describing the application and inviting mining companies to review the application at the Applicant's website, arrangements for such

publication to be effected with the newspapers within 8 hours of the grant of an order under Part A, with publication to follow on the earliest day possible in terms of the newspapers' publishing timetable.

3.6 The Applicant's attorneys must within 8 hours of the grant of an order under this Part A –

3.6.1 Email the application, or the link to it on one or more of the websites referred to above, to all of the entities listed in annexure GK3 to the affidavit of G Kahn, where an email address has been identified;

3.6.2 Endeavour to fax to those entities on annexure GK3 for whom a fax number only has been found, a letter drawing their attention to the application and providing all of the links to the application on the websites referred to above;

3.6.3 Send by SMS a short notification of the application and one of the links to one of the websites referred to above, where only a cell phone number for the entity has been identified;

3.6.4 Endeavour to telephone those entities where only a landline number has been identified and inform them of the nature of the application and a link to one of the websites referred to above.

- 4 It is directed that any mining company may join this application as a respondent by giving notice of opposition by email to the Applicant's attorneys on the email address given below, which notice must –
 - 4.1 be given by no later than close of business on Wednesday 22 April 2020;
and
 - 4.2 immediately be transmitted by the Applicant's attorneys to all Respondents
and the Registrar.
- 5 Alternative and/or additional measures of service and/or publication as directed by the court.
- 6 Costs in the cause.

PART B

KINDLY TAKE NOTICE FURTHER THAT the the Applicant will apply at the above Honourable Court on Tuesday 28 April 2020 at 10h00, or as the urgent court judge directs, for an order in the following terms:

- 1 The First Respondent's decision not to (alternatively, failure to) –
 - 1.1 declare that the Covid-19 viral pandemic present and spreading in South Africa is a health hazard as contemplated in section 76(1) of the the Mine Health and Safety Act ("the MHSA") and to publish a notice immediately to that effect;
 - 1.2 publish by way of a notice in the Government Gazette mandatory conditions, standards of fitness, measures to eliminate, control and minimise health risks associated with the health hazard, compulsory measurements of occupational hygiene to be conducted, compulsory medical surveillance to be conducted in respect of employees exposed to the health hazard and other appropriate measures in terms of paragraphs (a) to (f) of section 76(2) of the MHSA, is reviewed and set aside.
- 2 The decision (alternatively, failure to take a decision) referred to in prayer 1 is substituted with a decision to declare that the Covid-19 viral pandemic present and spreading in South Africa is a health hazard as contemplated in section 76(1) of the the Mine Health and Safety Act ("the MHSA").

- 3 The First Respondent is directed immediately to publish a notice announcing the declaration in the Government Gazette.
- 4 Alternatively to prayers 2 and 3 the decision in paragraph 1.1 is remitted to the First Respondent for reconsideration with directions to –
 - 4.1 consider, at a minimum, the expert opinion of Professors Ehrlich, Murray, Naidoo, Sonnenberg, and Rees (“the expert opinion”); and
 - 4.2 reach a decision in terms of section 76(1) by no later than close of business on Thursday 30 April 2020 or such alternative date as this court may determine.
- 5 The decision in paragraph 1.2 is remitted to the First Respondent who is directed to publish, alternatively, reconsider publishing, by way of a notice in the Government Gazette mandatory conditions, standards of fitness, measures to eliminate, control and minimise health risks associated with the health hazard, compulsory measurements of occupational hygiene to be conducted, compulsory medical surveillance to be conducted in respect of employees exposed to the health hazard and other appropriate measures in terms of paragraphs (a) to (f) of section 76(2) of the MHSA, with directions to –
 - 5.1 consider, at a minimum, the expert opinion; and
 - 5.2 provide the Applicant with an opportunity to comment on the draft notice before promulgation; and

- 5.3 reach a decision in terms of section 76(2) by no later than close of business on Friday 8 May 2020 or such alternative date as this court may determine.

In the alternative to prayers 1 - 5

- 6 The Second Respondent's decision not to (alternatively, failure to) –
- 6.1 require employers to prepare and implement a code of practice on the Covid-19 viral pandemic present and spreading in South Africa in terms of section 9(2) of the MHSA; and
- 6.2 issue guidelines in terms section 9(3) of the MHSA, is reviewed and set aside.
- 7 The decisions (alternatively, failure to take decisions) referred to in prayer 6 are substituted with decisions to require employers to prepare and implement a code of practice on the Covid-19 viral pandemic present and spreading in South Africa in terms of section 9(2) of the MHSA and to issue guidelines in terms of section 9(3) of the MHSA.
- 8 The First Respondent is directed by no later than Friday 8 May 2020 to publish a notice in the Government Gazette issuing guidelines in terms of section 9(3) and 49(6) of the MHSA, taking into account, at a minimum, the expert opinion.

- 9 Alternatively to prayers 7 and 8, the matter is remitted to the Second Respondent for reconsideration with directions to –
- 9.1 consider, at a minimum, the expert opinion; and
 - 9.2 provide the Applicant with an opportunity to comment on the draft guidelines before promulgation; and
 - 9.3 reach a decision in terms of section 9(2) and (3) by no later than close of business on Friday 8 May 2020 or such alternative date as this court may determine.

In the further alternative to prayers 6 - 9:

- 10 Regulations 11J, 11K and Schedule B, Part B, Item 22 of the regulations in Government Notice 318 of 18 March 2020, as amended,¹ are declared to be constitutionally invalid and are set aside.
- 11 The Third Respondent is directed to issue fresh regulations pertaining to mining as an essential service with directions to –
- 11.1 consider, at a minimum, the expert opinion; and

¹ GN 318 of 18 March 2020 issued in terms of section 27 (2) of the Disaster Management Act No. 57 of 2002 and contained in Government Gazette No. 43107, as amended by Government Notice R.398 in Government Gazette No. 43148 of 25 March 2020, Government Notice R.419 contained in Government Gazette No. 43168 dated 26 March 2020, Government Notice R. 446 of 2 April 2020 contained in Government Gazette No. 43199 and Government Notice R. 465 of 16 April 2020 published in Government Gazetted No. 43232.

11.2 provide the Applicant with an opportunity to comment on the draft regulations before promulgation; and

11.3 publish amended regulations by no later than Friday 8 May 2020.

12 Further and/or alternative relief is granted.

13 The costs of this application, including the costs of the orders in Part A, are to be paid, jointly and severally, by the First Respondent and any Respondents opposing it.

KINDLY TAKE NOTICE THAT the accompanying affidavits of **JEFFREY MPHAHLELE** and **GEORGE IB KAHN** will be used in support of this application.

KINDLY TAKE FURTHER NOTICE that the Applicant has appointed Richard Spoor Inc Attorneys as its legal representatives in these proceedings and will accept delivery of all further notices and papers in this matter at the address detailed below.

KINDLY TAKE NOTICE that if any party intends opposing Part A of this application, they are required to:

1 Inform the Applicant's attorneys in writing of their intention to oppose this application and appoint in such notification an address at which they will accept notice and service of all documents in these proceedings, including by email, by 18h00 on **MONDAY, 20 APRIL 2020**.

2 Deliver their answering affidavits by 10h00 on **TUESDAY 21 APRIL 2020**.

KINDLY TAKE NOTICE that if any party or any mining company intends opposing Part B of this application, they are required to:

- 1 Inform the Applicant's attorneys in writing of their intention to oppose this application and appointing in such notification an address at which they will accept notice and service of all documents in these proceedings, including by email by 17h00 on **THURSDAY, 23 APRIL 2020**.
- 2 Deliver their answering affidavits by 17h00 on **FRIDAY, 24 APRIL 2020**.
- 3 The Applicant shall deliver its replying affidavit by 09h00 on **SUNDAY, 26 APRIL 2020**.
- 4 The parties to deliver their heads of argument by 13h00 on **MONDAY, 27 APRIL 2020**.

KINDLY PLACE THE MATTER ON THE ROLL ACCORDINGLY

SIGNED AT JOHANNESBURG ON THIS THE 20th OF APRIL 2020.



RICHARD SPOOR INC. ATTORNEYS
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(Please contact us on email or cellphone during lockdown)

Ref: Roos/Kahn/AMCU Covid-19

TO: **REGISTRAR OF THE ABOVE HONOURABLE COURT**
 Johannesburg
 Urgent Roll Section
 Ms F Ntuli
 Email: fntuli@judiciary.org.za
 Cell: 082 778 6295

AND TO: **MINISTER OF MINERALS RESOURCES AND ENERGY**
 First Respondent
 Department of Mineral Resources and Energy
 C/o State Attorney
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Mamabefu.modipa@dmre.gov.za
Ivan.moloto@dmre.gov.za

SERVICE BY EMAIL

AND TO: **CHIEF INSPECTOR OF MINES**
 Second Respondent
 Department of Minerals
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SERVICE BY EMAIL

AND TO: **MINISTER OF COOPERATIVE GOVERNANCE
AND TRADITIONAL AFFAIRS**
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Fourth Respondent
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SERVICE BY EMAIL

**IN THE LABOUR COURT OF SOUTH AFRICA
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Case No.: _____/2020

In the matter between:

**ASSOCIATION OF MINeworkers AND
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First Respondent

CHIEF INSPECTOR OF MINING

Second Respondent

**MINISTER OF CO-OPERATIVE
GOVERNANCE AND
TRADITIONAL AFFAIRS**

Third Respondent

MINERALS COUNCIL SOUTH AFRICA

Fourth Respondent

FOUNDING AFFIDAVIT

I, the undersigned,

JEFFREY KEHLA MPAHLELE

do hereby make oath and say:

- 1 I am an adult male South African citizen.

- 2 I am the General Secretary of the Association of Mineworkers and Construction Union ("AMCU"), the Applicant, with addresses at 25 Botha Rd, Clewer, Emalahleni, 1039.

- 3 I am duly authorised to depose to this affidavit on behalf of AMCU.

- 4 Save to the extent that the context indicates otherwise the facts deposed to herein are within my personal knowledge and belief. To the extent that I make legal submissions in this affidavit, I do so on the advice of my legal representatives, whose advice I believe to be correct.
- 5 Where I refer to the State Respondents, I refer to the First, Second and Third Respondents unless otherwise indicated.
- 6 This is an application to compel the First Respondent (“the Minister”) and the Second Respondent (“the Chief Inspector”) to exercise their statutory powers to protect mineworkers during the Covid-19 pandemic. Both the Minister and the Inspector have powers under the Mine Health and Safety Act 69 of 1996 (“MHSA”).
- 7 Despite the particular vulnerability of mineworkers to Covid-19, the Minister has either failed to decide whether to exercise his power to declare a “health hazard” and issue the necessary measures to protect mineworkers, or has decided not to. Similarly, the Inspector has failed to exercise his power to issue guidelines and make them binding on mining companies. These failures create a serious health hazard for mineworkers. This application seeks to remedy those failures.
- 8 This affidavit is structured as follows:
 - 8.1 **Part I** describes the parties;
 - 8.2 **Part II** gives an overview of the application;
 - 8.3 **Part III** addresses jurisdiction and compliance with this court’s directives;

- 8.4 **Part IV** establishes AMCU's standing;
- 8.5 **Part V** outlines the relevant legal framework;
- 8.6 **Part VI** sets out the necessary factual background;

I. PARTIES

- 9 The Applicant is the Association of Mineworkers and Construction Union (“AMCU”), a registered trade union in terms of the Labour Relations Act 66 of 1995 (“LRA”) and the MHSA. AMCU represents more than 100 000 mineworkers across 112 mines, seven commodities, and seven provinces.
- 10 The First Respondent is the Minister of Mineral Resources and Energy, the Honourable Minister Gwede Mantashe (“the Minister”). The Minister is cited in their capacity as both the political head of Mineral Resources and Energy and the representative of the national government. The Minister exercises powers and responsibilities in terms of the MHSA. The Minister’s office is in Pretoria.
- 11 The Second Respondent is the Chief Inspector of Mining (“the Chief Inspector”), a statutory office created in terms of section 48(1) of the MHSA, that, subject to the control and direction of the Minister, exercises powers and responsibilities in terms of the MHSA. The Chief Inspector’s office is in Pretoria.
- 12 The Third Respondent is the Minister of Cooperative Governance and Traditional Affairs, the Honourable Minister Dr Nkosazana Dlamini-Zuma (“the COGTA Minister”). The COGTA Minister is cited in her capacity as both the political head of Cooperative Governance and Traditional Affairs and the representative of the national government. The COGTA Minister exercises powers and responsibilities in terms of the Disaster Management Act 57 of 2002 (“DMA”) and its current declaration of a national disaster and regulations pertaining to the Covid-19 pandemic. The COGTA Minister’s office is in Pretoria.

- 13 The Fourth Respondent is the Minerals Council South Africa (“the Minerals Council”), an employer’s organisation registered in terms of section 97(1) of the LRA with its offices situated at 5 Hollard Street, Marshalltown, Johannesburg. It has been cited as the employer’s organisation that represents the major mining companies in South Africa, and for its role in seeking to standardise the management of Covid-19 on mines in South Africa. No relief is sought against the Minerals Council.
- 14 AMCU acknowledges that mining companies will be affected by the relief sought by AMCU and may wish to participate in these proceedings. While AMCU has not cited all of the more than one hundred mining companies as parties to this application, AMCU proposes certain prayers in part A of this application to:
 - 14.1 Ensure the widespread distribution of this application to mining companies; and
 - 14.2 Provide for the unopposed joinder of any mining company seeking to participate in this application.
- 15 This relief is explained and motivated for in more detail in the affidavit of George IB Kahn.

II. OVERVIEW

- 16 The highly infectious Covid-19 has swept across the globe, infecting over two million individuals and claiming more than 150 000 lives. While South Africa has not been spared from the scourge of Covid-19, it has moved quickly to minimise the virus's spread.
- 17 One of the most effective measures to combat Covid-19 is social distancing. Social distancing entails maintaining space between individuals to avoid exposure to the virus and thus slow its spread. When the virus first arrived in South Africa, the South African government encouraged the populace to engage in voluntary social distancing.
- 18 As voluntary social distancing was not sufficient, South Africa imposed social distancing through a national 'lockdown' that requires all of South Africa's residents to remain at home except to obtain or provide essential goods or services. Those who intentionally breach the lockdown face criminal sanctions.
- 19 Given the nature of mining operations, mineworkers are particularly at risk of contracting Covid-19 at their workplace. In the absence of thorough, best-practice protocols to mitigate the spread of Covid-19, it is only a question of when, not if, we can expect widespread Covid-19 infections on mines. Infections on mines will then spread into mining-affected communities and beyond.
- 20 In spite of this, between 15 March and 16 April 2020, the Respondents refused to impose binding obligations on mining companies regarding the management

of Covid-19, despite AMCU's repeated pleas. When regulations were finally promulgated, they were superficial and woefully inadequate.

- 21 While drastic and severe regulations have been imposed upon the vast majority of South African society, the mines have, for the most part, been left to self-regulate. While some mines will voluntarily act responsibly to address the risk of Covid-19 spreading amongst mineworkers and the communities where they live, the abdication of the Department of Mineral Resources and Energy's ("DMRE") responsibility to regulate is not only unacceptable but unlawful and unconstitutional.
- 22 The Minister has a responsibility and a duty to ensure mineworkers' safety that goes above and beyond assuming companies will act in the best interest of mineworkers.
- 23 As AMCU's repeated efforts to engage with the Minister on the need to protect mineworkers' health and safety have been rebuffed or ignored, this application is brought as a last resort to seek orders:
 - 23.1 Reviewing and setting aside the Minister and/or Chief Inspector's decision to not promulgate national regulations and/or guidelines that impose binding obligations on employers to protect mineworkers from the Covid-19 pandemic under section 76 of the MHSA, alternatively in terms of s 9(3) read with s 49(6) of MHSA; and
 - 23.2 Substituting for those decisions, to the extent possible and appropriate, decisions to declare the Covid-19 pandemic a health hazard under section

76(1) of the MHSA, alternatively to require employers to prepare and implement codes of practice to deal with the Covid-19 pandemic and obliging the Chief Inspector to prepare guidelines for this purpose;

23.3 Remitting the matter to Minister and/or Chief Inspector to act under sections 76(2), alternatively, 9(3) of the MHSA and, if substitution is not granted, to consider acting under sections 76(1) and (2) and/or sections 9(2) and (3).

24 In the alternative, AMCU seeks to review and set aside certain regulations promulgated by the COGTA Minister on 16 April 2020 together with an order compelling the COGTA Minister to issue more robust regulations in terms of section 27(2) of the Disaster Management Act to mitigate the impact of the Covid-19 pandemic on mineworkers.

25 Directions are sought upon remittal to consider the expert opinion referred to below and to afford AMCU the opportunity to comment on any relevant drafts.

26 AMCU also seeks orders condoning non-compliance with the Rules of this Honourable Court with respect to ordinary filing and time periods and the rules and other statutory instruments dealing with the attestation and commissioning of oaths. As set out above, and explained in detail in the affidavit of George Kahn, AMCU also seeks orders to ensure that mining companies that may be affected by the relief sought are aware of this application and may join this application without following the formalities that are typically required by this Court's rules.

- 27 AMCU also seeks costs against the first respondent and any party opposing this application and further and/or alternative relief.
- 28 I note that AMCU has brought separate proceedings in the High Court seeking the review and setting aside of exemptions granted to some mining companies from certain regulations together with ancillary and alternative relief. There is no overlap between the causes of action in that matter and in this one.

III. JURISDICTION AND COMPLIANCE WITH DIRECTIVES

- 29 This Honourable Court holds exclusive jurisdiction to determine any dispute about the interpretation or application of any provision of the MHSA.
- 30 The relief sought against the Minister and the alternative relief sought against the Chief Inspector falls squarely under the exclusive jurisdiction of this Honourable Court.
- 31 This Honourable Court holds jurisdiction to deal with the alternative relief made out against the COGTA Minister in terms of section 157(2)(a) of the LRA, as amended, read together with sections 9, 10, 11 12, 23, 24 and 27(1)(a) of the Constitution.
- 32 In order to manage the spread of Covid-19, the Judge President of this Court has issued directives regarding access to the Labour Court during the period of lockdown.
- 33 I am advised that my legal representatives will alert the Registrar to explain in full detail why this application must be considered during lockdown.
- 34 The Applicant seeks an order in part A inter alia that the matter be heard through Zoom or similar electronic means in order to facilitate the hearing of the matter.

IV. STANDING

35 AMCU brings this application:

35.1 in its own interests;

35.2 in the interests of its members;

35.3 in the interests of other mineworkers that are not its members; and

35.4 in the public interest of combatting the present Covid-19 pandemic in South Africa generally as well as in mines and mine-affected communities specifically.

36 In the face of a global pandemic, the spread of Covid-19 on South Africa's mines will mean the spread of the virus to mining-affect communities and beyond. This application will have profound implications for all persons living within the Republic of South Africa, our closest neighbouring countries, and the international community. This crisis transcends international borders and nation-states.

V. LEGAL FRAMEWORK

- 37 The Constitutional Court has confirmed that mineworkers enjoy the constitutional right to freedom and security of the person at their workplace, including and especially the right to bodily integrity.
- 38 Mineworkers also enjoy the right to human dignity,¹ life,² fair labour practices,³ an environment that is not harmful to their health or well-being⁴ and access to healthcare.⁵
- 39 All of these rights are threatened by the Covid-19 pandemic and any return to work on the mines during the pandemic.
- 40 Parliament has passed the MHSA to give effect to these rights on mines at all times, and particularly when there is a health hazard. It has also enacted the DMA to safeguard the rights of all South Africans – including mineworkers – during a national disaster.
- 41 These rights include a positive duty upon the Respondents to act and exercise their public powers in a manner that safeguards these constitutional rights, especially when a failure to act may likely result in a serious, irreversible infringement of one or more of these fundamental rights. This is apparent from

¹ Section 10 of the Constitution.

² Section 11 of the Constitution.

³ Section 23(1) of the Constitution.

⁴ Section 24(1) of the Constitution.

⁵ Section 27(1)(a) of the Constitution.

s 7(2) of the Constitution which obliges all organs of state to respect, protect, promote and fulfil the rights in the Bill of Rights.

The Statutory Powers

42 In this application, the relevant statutory provisions are:

42.1 Section 76 of the MHSA (Emergency Hazardous Health Condition Directions); and,

42.2 Section 9 of the MHSA, read together with section 49(6) of the Act (Guidelines for Codes of Practices in mining); and,

42.3 Section 27(2) of the DMA, read together with section 3 of the Act and the Third Respondent's declaration of a national state of disaster on 15 March 2020 (Disaster Management Emergency Regulations).

43 First, s 76(1) of the MHSA empowers the Minister to declare, by notice in the Gazette, "*that an environmental condition or a substance present at a mine is a health hazard to employees who are or may be exposed to that condition or substance*". He must consult with the Mine Health and Safety Council before he does so (s 76(1)(a)). He may do so without public consultation if he believes the notice should be published immediately (s 76(1)(b)). Once that declaration is made, the Minister can impose binding conditions and standards on mining employers in order to protect mineworkers (s 76(2)).

- 44 These powers are tailored to sudden and devastating health crises, empowering the Minister to ensure coordinated disaster management in mining for the period of time that the crisis persists.
- 45 They allow the Minister, acting as a representative of the national government, to also ensure coordination with other organs of state and other private sector stakeholders. The jurisdiction of section 76 of the MHSA is exceptionally wide and rapid.
- 46 Second, s 9 of the MHSA, empowers the Chief Inspector to set norms and standards for universal application and implementation on any critical aspect of health and safety in mining. This is through the mechanism of requiring employers to prepare and implement codes of practice on the issue in question which must comply with guidelines published by the Chief Inspector. This allows uniform and standardised minimum approaches on health and safety matters of critical importance. It is not limited to employers' representative organisations' or employees' representative organisations' memberships; it affects the entire mining industry with any specificity that the Chief Inspector may opt for.
- 47 These allow for the Chief Inspector to implement a meaningful coordination and standardisation effort. The scope of section 9 of the MHSA is also wide, but it is slower and more restricted than the Minister's powers in terms of section 76.
- 48 Third, the Disaster Management Regulations, in terms of section 27(2) read with section 3 of the DMA, empower the Minister designated by the President of South Africa, the COGTA Minister in this case, to implement subordinate laws

pertaining to prescribed areas of aspects of disaster management and responses. These regulations may be implemented rapidly and grant wide powers to the section 3 designated Minister.

- 49 These powers allow the designated Minister to coordinate centralise and rapid implementation of disaster management responses, where existing law or structures are insufficient to safeguard the public. However, they are limited and restricted in terms of section 76(5) of the DMA to a particular time period – initially three months which can be extended month by month.

PAJA and the Principle of Legality

- 50 Mineworkers are also entitled to just administrative action, which can be vindicated under the Promotion of Administrative Justice Act 3 of 2000 (“PAJA”) and/or directly through the Constitution’s principle of legality.
- 51 AMCU contends that all the decisions at issue constitute administrative action as defined in PAJA. But even if they do not, they constitute the exercise of public power that must comply with the principle of legality and be lawful and rational.
- 52 The failure of the State Respondents to reasonably and rationally exercise their powers under the MHSA and DMA to protect mineworkers from Covid-19 violates mineworkers’ rights to fair administrative action.
- 53 Several provisions of PAJA are relevant.

- 54 First, s 6(2)(g) of the PAJA empowers a court to review and set aside the failure to take a decision. In this matter, the Minister and Chief Inspectors' failure to exercise their powers under section 76 and section 9(3) of the MHSA are reviewable failures to take decisions as contemplated by section 6(2)(g).
- 55 Where an administrator fails to take a decision and there is no prescribed period in which such a decision must be made, section 6(3)(a) empowers persons relying upon section 6(2)(g) to "institute proceedings in a court or tribunal for judicial review of the failure to take the decision on the ground that there has been unreasonable delay in taking the decision."
- 56 Second, a variety of provisions of PAJA permit a court to review and set aside decisions that are irrational or unreasonable. These include:
- 56.1 Section 6(2)(e)(iv) which prohibits decisions that are arbitrary or capricious;
- 56.2 Section 6(2)(f)(ii) which prohibits decisions that are not rationally connected to: (aa) the purpose for which it was taken; or (bb) the purpose of the empowering provision;
- 56.3 Section 6(2)(h) which prohibits decisions that are so unreasonable that no reasonable administrator could have taken them.
- 57 I deal with the appropriate relief in **Part XV** below.

VI. BACKGROUND

- 58 First reported by the World Health Organisation on 31 December 2019, Covid-19 is a highly infectious disease caused by a virus. The Covid-19 virus spreads primarily through droplets of saliva or discharge from the nose or mouth when an infected person coughs or sneezes. It can also be contracted through touching surfaces where the virus is present, when a person then touches his or her face or otherwise allows the virus to be ingested following contact with that surface.
- 59 Covid-19 has an incubation period of seven to fourteen days during which a person may not know they are infected and inadvertently transmit the disease to other people.
- 60 Medical experts have stated that certain people with compromised immune systems or underlying respiratory and other conditions (such as high blood pressure, heart disease, lung disease, cancer or diabetes) are particularly vulnerable to infection and, if infected, face a heightened risk of death.
- 61 Once infected, the disease can cause respiratory failure and death. Many however experience only relatively mild symptoms. It is well known that lung disease is common amongst mineworkers in South Africa.
- 62 By 18 April 2020 the global pandemic of Covid-19 had infected over 2.3 million individuals in more than 200 nations. Over 160 000 people have died of Covid-19 worldwide.

- 63 Recognising Covid-19's grave peril, the President announced a state of disaster on 15 March 2020. The COGTA Minister declared a national state of disaster in terms of section 27(1) of the DMA on 15 March 2020. On 18 March 2020 promulgated regulations under section 27(2) of the DMA ("the DMA Regulations"). The DMA Regulations were amended on 25 March 2020 to introduce the period of lockdown from 23:59, Thursday 26 March 2020 to 23:59, Thursday 16 April 2020. Additional amendments were published on 26 March and 2 April 2020. On 9 April 2020, the President announced the extension of the lockdown period to 30 April 2020. The DMA Regulations were amended accordingly on 16 April 2020.
- 64 The regulations impose sweeping and severe limitations on the freedom of movement and trade. The vast majority of residents are not allowed to leave their homes except to obtain essential goods, while most businesses may only operate remotely. Businesses that are allowed to operate face severe impositions and must fall within the category of essential services.
- 65 Essential services were expected to continue operating during the initial lockdown period. The DMA Regulations provide that essential services include a number of services listed in Part B of Annexure B of the Regulations, item 22, includes "Gold, gold refinery, coal and essential mining".
- 66 On 16 April 2020, the amended regulations to the lockdown were promulgated and unlocked all non-coal mining to operate up to 50% capacity and coal mining to operate at 100% capacity. The regulations, which are discussed in detail below, also impose certain health and safety requirements. While I acknowledge

that these regulations are an attempt to regulate the return of workers to the mines by placing certain obligations on the employer, these provisions fall far short of what is required to ensure that employers implement sufficient measures to mitigate the spread of the Covid-19 virus in the mines.

- 67 The regulations still afford employers a great deal of discretion to decide what resources to employ in their response to Covid-19 in the workplace. These regulations therefore do not constitute the type of national standard being sought and contemplated in this application.
- 68 There is ongoing discussion and speculation that the lockdown may be extended further. It is obvious that the Covid-19 health hazard will continue even beyond the end of the lockdown and will likely affect us for the rest of 2020 and possibly into 2021.
- 69 The regulations have also led to widespread confusion for AMCU's members and others in the industry.
- 70 After some mineworkers were asked to return to work, the South African Police Union ("SAPU") wrote to the Minister of Police seeking "clear directives on the permissions [mineworkers] are alleging they have to operate." A copy of the letter from SAPU dated 14 April 2020 is attached and marked annexure **JM1**. The Chief Executive Officer ("CEO") of Impala Platinum was arrested for allegedly recalling mineworkers during the lockdown in contravention of the regulations.

- 71 The acute impact of Covid-19 on the poor in South Africa highlights the class disparities and ongoing racial inequality resulting from and informing the legacy of Apartheid.

VII. MINEWORKERS' SAFETY

72 Mineworkers constitute a category of employment that historically has played an exceptional role in our country.

73 Mineworkers are exceptionally vulnerable to the risk of Covid-19.

73.1 The nature of work on a mine is not conducive to social distancing.

73.2 Underground mining requires the transport of workers in cages for significant distances. The nature of these cages is such that it is very difficult, if not impossible, to achieve social distancing of two metres between individuals.

73.3 Mines also have numerous unavoidable points of contact with other workers both on the surface and underground, as well as dormitories for mineworkers that live in them.

74 The importance of addressing Covid-19 on mines is intensified by the reality that:

74.1 Mineworkers are widely affected by lung diseases, including the hidden pandemics of pulmonary tuberculosis and pneumoconiosis. As Covid-19 is a respiratory illness, any lung diseases will exacerbate the risk faced by mineworkers.

74.2 HIV/AIDS has a higher prevalence amongst mineworkers than the general population.

- 75 AMCU is seriously concerned about mineworkers' families and their extended communities who may be affected by mineworkers returning to work without effective measures being put in place in the workplace. The Covid-19 risk is not only posed to employees in the workplace, it follows them home and into communities.
- 76 There are almost half a million mineworkers in South Africa. The majority of mineworkers reside in the communities that host these mines.
- 77 Given mineworkers integration into mine-affected communities, any Covid-19 infection at a mine is likely to spread to vulnerable communities surrounding the mine.
- 78 Mineworkers and their communities face significant barriers in accessing healthcare services, particularly in their home communities which are often in rural, underserved areas of South Africa or neighbouring countries with different and less generous healthcare rights than South Africa. It has long been the case that sick mineworkers have brought disease home, including tuberculosis and HIV/AIDS.
- 79 Clear measures to address Covid-19 on mines will drastically mitigate the risk of Covid-19's spread in communities.
- 80 AMCU is committed to getting mineworkers back to work as quickly as reasonable to safeguard our economy, but it is also a devout believer in 'flattening the curve'. AMCU does not want to participate in any action or conduct

that jeopardises the ambitions and actions of the collective government and the National Department of Health's task team on Covid-19.

- 81 The best endeavours of our government and other private institutions are only as good as the weakest link in the chain. The entire Covid-19 battle can be undone by a single major stakeholder. The South African mining sector has the capacity to make or break the efforts of South Africans during the Covid-19 pandemic should they not have an effective approach to ensure that mineworkers return to safe working environments.

VIII. EXPERT OPINION

82 Given the intense risk that AMCU's members may be infected by Covid-19 upon returning to work, AMCU has solicited the views of the following medical experts on addressing Covid-19 in mines:

82.1 Professor Rodney Ehrlich;

82.2 Professor Jill Murray;

82.3 Professor Rajen Naidoo; and

82.4 Professor David Rees.

83 These experts ("the experts") are leading authorities in the sphere of public health and occupational medicine in South Africa, with particular focus on the mining sector.

84 The experts have prepared an expert opinion regarding the risk mineworkers face from Covid-19, as well as the adequacy of the various measures taken to address Covid-19. This opinion, together with the experts' curricula vitae, is annexed hereto marked **JM2**. Confirmatory affidavits by the experts will, as far as possible, be filed as part of this application, although there may be a delay in securing same and it may prove impossible to comply with all of the rules and statutory instruments regulating the attestation and commissioning of affidavits. Condonation will be sought in this regard.

85 In the following sections, I review the various measures to address Covid-19 in the mining sector. I do with the advice of the experts.

IX. DISASTER MANAGEMENT ACT REGULATIONS

- 86 As noted above, when the lockdown commenced it was clear that some mining – particularly coal mining – would be allowed to continue. The regulations were less clear regarding the rest of the mining industry.
- 87 What was plainly missing was any attempt to provide binding regulations on the management of Covid-19 on mines.
- 88 This changed somewhat with the regulations relating to mining operations promulgated on 16 April 2020. Sections 11J and 11K, read with Schedule B Part B, provide the first and only national, binding obligations upon mining companies and/or employers.
- 89 I note that these regulations were promulgated as part of a push to bring mines into operation.
- 90 These lockdown regulations expressly affecting the mining sector, implemented 16 April 2020, constitute the following:

“Energy and petroleum products supply

11 J To ensure the continuous supply of energy and petroleum products to society as referred to in paragraph 6 of Part B of Annexure B-

- (a) collieries that supply Eskom must continue to operate at full capacity; and*
- (b) refineries must operate at full capacity to avoid shortage of fuel, and such operations must include smelters, plants and furnaces*

Mining Operations

- 11K (1) *Mining operations, as referred to in paragraph 22 of Part B of Annexure B, must be conducted at a reduced capacity of not more than 50% during the period of lockdown, and thereafter at increasing capacity as determined by direction issued by the Cabinet member responsible for mineral resources and energy.*
- (2) *The following conditions apply to the starting and increasing of capacity:*
- (a) *A rigorous screening and testing program must be implemented as employees return to work;*
 - (b) *the mining industry must provide quarantine facilities for employees who have tested positive for the COVID-19;*
 - (c) *data collected during the screening and testing programme must be submitted to the relevant authority;*
 - (d) *mining companies must make arrangements to transport their South African employees from their homes to their respective areas of operations;*
 - (e) *workers from neighbouring Southern African Development Community countries must be recalled to their place of employment at the end of lockdown in their respective countries in accordance with these Regulations and regulations applicable in those countries.*
- (3) *The monitoring and impact assessment of seismicity through the Council for Geoscience must be intensified with immediate effect.*

Schedule B – Part B

6. *Electricity (including vital demand management services), water, gas and fuel production, supply and maintenance;*
- 22 *Gold, gold refinery, coal and mining;"*

91 What is critical about the above regulations is that mining is now regarded as an essential service. Coal mines supplying Eskom are allowed to be running at normal operations and all other mines are allowed to be running at half their full capacity operations.

- 92 The effect then of “unlocking” the remainder of the mining sector, even on this limited scale, contemplates that more than 250 000 mineworkers will be back at work, travelling and/or going underground, if it is understood that the national mining workforce constitutes about half a million people. This is more or less the same as the City of Emalahleni (pop. 262,491) being “unlocked” completely and moving across South Africa and southern Africa.
- 93 Despite the regulations attempting to regulate the return of mineworkers to the workplace, they remain vague and unclear on the following aspects:
- 93.1 On how non-coal mines may measure themselves at only 50% operations, i.e. full operations at one company’s mine and the rest shut down for maintenance; and,
- 93.2 On specifically what kind of quarantine facilities must be provided, i.e. hostels or tents; and,
- 93.3 On the details of what constitutes “rigorous” screening and testing programs or requiring them any further than beyond employees returning to work; and,
- 93.4 On what kind of arrangements must be made to transport workers between their homes and their respective areas of operations, i.e. public taxis, mine buses, with or without safety measures, central collection or door to door; and,

93.5 On what happens when all SADC foreign mineworkers must return from their countries at the end of the lockdown, and how that is going to work at borders.

94 These regulations fundamentally say nothing about:

94.1 Social distancing in the context of mining operations, that are sometimes enclosed and artificially ventilated with a single air source passing throughout the entire mine until the exit ventilation shaft, i.e. underground gold and coal mines; and,

94.2 Personal, Equipment and Workplace Hygiene; and,

94.3 Personal protection equipment ("PPE") and their maintenance, inside or outside the workplace;

94.4 The status of ongoing chronic medical treatment programs, i.e. TB; and,

94.5 Fitness to work during Covid-19, i.e. first-degree silicosis or diabetic; and,

94.6 Training and Education; and,

94.7 Reporting and Investigation requirements; and,

94.8 Assessment of Covid-19 as an occupational disease or not; and,

94.9 Risk Assessments and Codes of Practice; and,

94.10 Entry, Periodic and/or Exit Medicals (red tickets) and their assessments, i.e. spirometry and audiograms (involve transmission possibilities); and

94.11 Medical finding appeals; and,

94.12 Transporting and briefing workers within the workplace, i.e. cages and health and safety pre-shift briefings; and

94.13 Hostel hygiene maintenance protocols'; and

94.14 3rd party control, i.e.: visitors, delivery vehicles, etc.; and

94.15 Potential Quarantine/Isolation venues.

95 According to the experts, these nominal regulations are insufficient for their purpose and far too vague to be an acceptable legal standard binding mining companies and/or employers.

96 I agree.

97 To the extent they purport to provide the sole binding legal framework regarding the management of Covid-19 on mines, they are not rationally connected to this purpose and are unreasonable.

98 I note the experts' view, which I share, that the DMA is not the most appropriate legislation to deal with these issues and concerns. For one thing, any regulations issued under the Act will fall away when the state of disaster ends.

99 The most appropriate legal framework is the MHSA. It can do what is being attempted under the DMA with no restriction across time until the end of the pandemic. It is the principal legislation to protect the health and safety of mineworkers as well as the health and safety of non-employees affected by the mining operations.

100 The MHSA falls under the DMRE and its powers to lawfully bind and control the conduct of the mining sector reside primarily with the Minister and the Chief Inspector.

X. CONDUCT OF THE DMRE

101 AMCU has pleaded with the DMRE to exercise its powers under the MHSA.

102 It has failed utterly to do so.

103 To date, the DMRE has decided not to issue binding national standards for mining companies.

104 Instead the DMRE has only offered the mining sector the following national statements and documents to guide their Covid-19 responses:

104.1 The Minister's remarks dated 25 March 2020;

104.2 The Chief Inspector's Guiding Principles dated 26 March 2020; and

104.3 The Minister's remarks dated 16 April 2020.

105 Copies of these documents are attached and marked **JM3**, **JM4** and **JM5** respectively.

106 I am advised by our legal representatives that none of these documents constitute enforceable legal instruments.

107 The Minister's remarks are not pursuant to anything in the MHSA and do not have any binding legal effect. The suggestion that mere remarks from the Minister would be binding upon mining companies is absurd. But that has not stopped the DMRE making it.

- 108 I attach correspondence from Advocate Thabo Mokoena, the Director General of Mineral Resources, signed on 27 March 2020 marked **JM6**. In this correspondence, Advocate Mokoena acknowledges receipt of an application for exemption received from Anglo American Platinum Limited dated 26 March 2020 and annexed hereto marked **JM7**.
- 109 In the correspondence, Advocate Mokoena purports to consent to Anglo American Platinum conducting mining operations “as set out in your letter subject to the attached regulations and directive from the Minister’s speech.” This ‘consent’ highlights the need for binding regulations.
- 110 Turning to the Chief Inspector’s Guiding Principles document, which AMCU only received over the Easter weekend, I note that it is not a Guideline contemplated in section 9(3) of the MHSA (“a Section 9(3) Guideline”). In terms of section 49(6), the Chief Inspector “must issue guidelines by notice in the Gazette.” To the best of our knowledge it has not been gazetted. Nowhere does it require employers to adopt codes of practice. It does not even mention codes of practice. Yet codes of practice are the purpose, focus and outcome of section 9(3).
- 111 An excellent example of a section 9(3) Guideline is the Guideline for the Compilation of a Mandatory Code of Practice for: The Right to Refuse Dangerous Work. This Guideline is a 29-page document that sets out in detail how to prepare a Code of Practice. I do not annexe this guideline so as to not overburden these urgent papers unduly. I note that mines’ COPs on the Right to Refuse Dangerous Work are uniform, detailed, unambiguous, and clear as they had to comply with this detailed guideline.

- 112 Our legal representatives communicated on 14 April 2020 with members of the National Department of Health's task team on Covid-19, including Professor Rajen Naidoo, to alert them to the Guiding Principles document. Professor Naidoo then advised that he was unaware of its existence prior to this.
- 113 Professor Naidoo, a highly respected professor of occupational medicine and global authority on coal mining diseases whose CV is annexed to this application, stated in a preliminary response to reading the Guiding Principles document that "this DMRE document is very superficial, and fails to appreciate the extent and complexities of the problem that workers in the industry are likely to face in the event of "unlocking"."
- 114 He went on further to state that "there has to be a comprehensive assessment of risk at different points of exposure for the worker returning to work: this has been listed to some extent in the document, but fails to elaborate the necessary action and responsibility. Systems of monitoring workers at points of departure from living areas to entry into the workplaces, and in reverse at the end of the shift is critical and must be spelled out in detail."
- 115 He ended his remarks on the document by stating that "[he] think[s] it serves no point in responding point-for-point on the DMRE Guidelines, suffice to say, a more meaningful strategy, a legally binding policy is necessary. "Unlock" permits (if such will ever exist) must be based on well-defined criteria, adherence to a clear mine by mine SOP, which includes public health and occupational health principles."

- 116 A copy of Professor Naidoo's email to our legal representative is attached and marked annexure **JM8**.
- 117 I point out at this point our legal representatives were still searching for a gazetted copy of the document to determine whether it was ever issued in terms of section 49(6) of the MHSA.
- 118 Professor David Rees, another highly respected professor of occupational medicine from the National Institute of Occupational Health ("NIOH"), writing in his personal capacity, further commented on the inadequacy of the Guiding Principles document. A copy of his comments dated 15 April 2020 is attached and marked annexure **JM9**.
- 119 In particular Professor Rees states in respect of the Chief Inspector's Guiding Principles document that "they rely heavily on the employer having the resources, competence, knowledge and will give effect to the principles. Smaller enterprises are going to find this very difficult, but so will large ones without access to a range of experts. The principles are also merely that, and to be a useful tool to reduce infections, details are needed to take account of the real situation in mining."
- 120 Professor Rodney Ehrlich, another highly respected professor of public health and occupational medicine from the University of Cape Town, supported the comments of Professors Rees and Naidoo and further critiqued the document as problematic. A copy of his letter dated 15 April 2020 is attached and marked annexure **JM10**.

- 121 It is noteworthy to further appreciate that these Professors have suggested that the advice to continue with spirometry (lung function) tests may possibly be dangerous and reckless in the current pandemic.
- 122 We further note the findings of Coulson and Christofides in the article '*Worker health and safety representatives on South African mines*'. The article is attached as annexure **JM11**. The article speaks to the role health and safety officers play on the mines. It provides that while health and safety representatives play an important monitoring role, the reality is that their employer generally restricts any authority they might have, therefore restricting any attempt to hold the employer responsible for non-compliance. Further, they found that in certain circumstances, health and safety representatives are not given sufficient resources to effectively fulfil their duties. Thus, in line with the recommendations made by the Professors expressed above, it is imperative that a national binding standard is created, so as to ensure that employers are held accountable for measures taken on mines, and to prevent health and safety representatives from bearing all responsibility.
- 123 These criticism are all supported by the Expert Opinion attached to this affidavit.
- 124 The Guiding Principles document is therefore unhelpful to mine health and safety.
- 125 The DMRE has therefore taken no material action to assist and/or support mineworkers with an exercise of their public power within its exclusive jurisdiction to create national binding standards. What it has done, and the only thing it has

done, is to cater for the mining and prospecting permits of mining companies by gazetting extensions to those permits and relaxing their conditions because of the Covid-19.

126 The DMRE is acting in the interests of mining companies not employers and is failing to fulfil its duty to proactively protect the constitutional rights of mineworkers to a safe and healthy environment.

127 AMCU's pleas for meaningful consultation and national binding standards have gone unanswered. A copy of our 8 April 2020 letter to the DMRE requesting this is attached and marked annexure **JM12**. No response to this letter to date has been received.

128 The DMRE has only communicated to AMCU that it is unlocking 132 mines to re-commence operations under the guise of essential mining, including but not limited to Manganese Metals Company (No. 120), Black Rock Quarries (No. 112), Mineral Sands Resources (No. 107), De Beers Consolidated Mines (No. 101), Tronox Mineral Sands (No. 74), Tshipi e'ntle Manganese (No. 23). A copy of its letter with the annexure of listed mines is attached and marked **JM13**.

129 I do not wish to comment on the logic that gold mining is an essential service, but it is unclear in what regard diamonds are an essential part of the Covid-19 response.

130 The 16 April 2020 amendment to the DMA regulations however makes all mining, irrespective of commodity, an essential service.

131 It is not clear to AMCU whether the Minister and the Chief Inspector have:

131.1 Failed to take a decision whether to exercise their powers under ss 76(1) and 9(3) respectively; or

131.2 Actively decided not to exercise those powers.

132 It makes little difference to the relief AMCU seeks:

132.1 If the Minister and Chief Inspector have failed to take a decision on whether to act, then their failure to decide is unreasonable and must be set aside. Given the urgency of the matter, and the fact that mines are currently going back to work, the delay in reaching a decision is unreasonable.

132.2 If the Minister and Chief Inspector have actively decided not to exercise their powers, then that decision is unreasonable and irrational. There is no other way to protect mineworkers' safety than through the exercise of these powers. The other steps that have been taken are, for the reasons given in the Expert Report, manifestly inadequate. In those circumstances, it is irrational not to exercise the powers they have.

133 AMCU does not seek to dictate precisely what the Inspector's Guidelines should contain, or what steps the Minister should take under s 76(2). The details are for those functionaries to determine. AMCU asks only for an order compelling them to act reasonably and rationally – and that they consider (amongst all other relevant factors), the Expert Opinion.

XI. MINERALS COUNCIL AND INDIVIDUAL COMPANIES

134 The Minerals Council has, to its credit, been more active than the DMRE. Some mining companies are taking the Covid-19 crisis seriously and have implemented measures with some promise.

135 An example of a mine that has developed a protocol with some positive measures is the Marula Operations (Implats Group) in Limpopo. Marula has developed a 22-page Covid-19 response plan, a copy of which is annexed hereto marked **JM14**. The plan includes six stages of Covid-19 protocols:

135.1 Stage 0: International Spread –

No cases in Country of Operation (South Africa, Zimbabwe, Canada)

135.2 Stage I: Confirmed cases in Country of Operation

I(a) Less than <100 confirmed cases

I(b) greater than >100 confirmed cases

135.3 Stage II: Confirmed cases in Region (Province) of Operation

II(a) Less than <100

II(b) greater than >100

135.4 Stage III: Confirmed cases in Municipality of the Operation

III(a) Less than <100

III(b) greater than >100

135.5 Stage IV: Confirmed cases at an Implats Operation

IV(a) Less than <10 (Note 10 cases)

IV(b) greater than >10 -100 (Note 10 cases)

135.6 Stage V: Multiple confirmed cases at an Implats Operation

V(a) >100 -1000

V(b) >1000

136 The Marula Operations Response document records the following under PPE:

“Personal Protective Equipment (PPE) usage:

Various types of PPE are required dependent on the level of exposure the individual is subjected to. Different types of masks will be used e.g. healthcare workers will be supplied with N95 masks as opposed to surgical masks that will be used for employees at the shafts. Medical personnel will require facial visors, surgical gloves, gowns when they must take medical swabs from the people under investigation. Symptomatic individuals who present at the health facility will be issued with surgical masks to prevent spread of germs.”

137 While AMCU would prefer the greatest levels of protection, the incorporation of N95 or FFP2-level masks in certain high-risk areas is a positive measure. The provision of medical surgical-level masks for general workers at the shafts is also comforting. While FFP3-level masks provide near-certain protection, even when generating aerosols that may be infected with Covid-19, they are in short supply. A copy of the UK National Health Service guideline on masks is attached and marked annexure **JM15**.

- 138 The Impala document further recognises the smaller, critical details like that audiometry and lung functions tests should be halted at certain levels. The details about the practicalities of day-to-day operations, numbers of health practitioners required, the contents of supportive medical packs, etc, are also advised on with proper procedures to be administrated.
- 139 However, the problem is that not all mines are treating the Covid-19 crisis with the same level of seriousness as Implats. Absent a common national standard, Codes of Practice and Risk Assessments are diverse and uncoordinated, if they are put in place at all.
- 140 Some may suggest workers use their bandana or scarfs to protect themselves in line with the Minerals Council SOP (discussed more below) – this is not acceptable in a mining environment.
- 141 The Impala documentation is not without its flaws as well and could be improved upon with additional version updates.
- 142 The Minerals Council has developed two Standard Operating Procedures (“SOP”) in respect of Covid-19 dated 23 March 2020 and 9 April 2020 (annexed marked **JM16** and **JM17**).
- 143 These SOPs were developed to assist Council members consider some of the potential measures implicated in the Covid-19 pandemic. The later SOP references an earlier SOP dated 25 March 2020 that AMCU has not seen. It may

refer to the 23 March SOP. AMCU only obtained copies of these SOPs during the week of 13 April 2020.

144 To its credit, these SOPs developed by the Minerals Council are far more detailed and substantial than the DMRE documents.

145 However, they too are vague and lack sufficient detail to regulate a specific operation. They are mostly a collection of recommendations and considerations rather than imperatives and minimum requirements.

146 Most importantly, they are ultimately non-binding on its members and have little if any effect on SA mining or associated companies that are not its members.

147 I draw this Court's attention to the experts' advice in the expert opinion that the Mineral Council's second SOP could well serve as a short term binding regulation, provided it took account of the experts' comments on its shortcoming

148 The Minerals Council has also published a 10-Point Action Plan document that summarises its views on the important aspects for mines in the Covid-19 pandemic. It is vague and offers no details. Its limitations are set out in more detail in the expert opinion. A copy of the Action Plan is attached and marked **JM18**.

XII. NECESSITY FOR A BINDING NATIONAL STANDARD

149 Above we have explained that there is much lacking from the actions of the DMRE to date and the current regulations relating to the mining sector.

150 Currently, there is no binding, detailed or coordinated approach to Covid-19 for the mining sector. As a result, mining companies have responded differently to their obligation of implementing measures to mitigate the risk of contraction of the Covid-19 virus in the workplace. This places mineworkers, and mine affected communities, at risk.

151 It is simply unacceptable for the Minister and Chief Inspector to rely upon employer's good faith and to fail to impose binding, national standards.

152 The need for a national binding standard is imperative to protect the safety of the surrounding mining communities. The consequence of employers not implementing sufficient measures to eliminate the risk of workers contracting Covid-19 can have a direct impact on the safety of their families and communities. Further, not ensuring protective measures are put in place can also hamper the effects of the current national lockdown and exasperate the current crisis.

153 The expert opinion states the following:

“Our recommendation is therefore, that a binding, national standard is needed and required, that must clearly formulate the minimum detailed and unambiguous requirements for a mine to follow. This is clearly within the ambit of the DMRE, in consultation with the NDOH task team on Covid-19. The DMRE and the required national standard must be

coordinated with all sectors of the country, and not within its own independent and parallel processes. The National Institute of Occupational Health and National Institute of Communicable Diseases must guide the DMRE, Mine Health and Safety Council, Minerals Council and trade unions on what is required and what comprises adequate standards.” (para 45)

154 I agree.

155 It is also critical for the benefit of the mining companies themselves in respect of the utter confusion that has revolved around the unlocking of the mines noted above.

156 In the long term, and in further endorsement of the experts’ recommendations, we would like an opportunity to further engage with all the stakeholders, together with relevant experts, e.g. NIOH and NICD, on how these national standards can be further improved.

XIII. EFFORTS TO ENGAGE

157 This application has been brought as a last resort.

158 AMCU has repeatedly written to the DMRE during the current crisis requesting consultations, assistance, expert guidance, and binding measures. These correspondences have been ignored.

159 On 26 March 2020 AMCU addressed a letter to the Minister in response to the Minister's remarks on the implementation of the lockdown relating to Mining. The letter addressed the fact that the remarks made by the Minister differed from those of the President of the Republic, who said that only essential services in mining and energy will continue operating during the lockdown. However, the Minister's remarks indicated that mining operations will simply be scaled down. AMCU therefore requested that the Minister reconsider this approach, and issue more directives with finer details. In addition, AMCU found it problematic that the DMRE did not consult with trade unions when finalising the Guiding Principles. This letter is attached as **JM19**.

160 On 3 April 2020, an SMS was sent to AMCU on behalf of the Director-General of DMRE inviting AMCU and other stakeholders to an engagement at the DMRE's physical offices in Pretoria on 7 April 2020.

161 On 5 April 2020, AMCU wrote to the Minister of DMRE and again addressed the issues raised in the first letter directed to DMRE (dated 26 March 2020). AMCU further advised the DMRE that unless the meeting was conducted via

teleconference or any other digital platform, AMCU would not be able to attend the meeting. This letter is attached at **JM20**.

162 On 6 April 2020 AMCU again wrote to the Minister of DMRE in an attempt to confirm whether AMCU would be joined to the meeting to be held on 7 April 2020 via teleconference. The DMRE did not respond to this request. The letter is attached as annexure **JM21**.

163 A printout of a newspaper article that covered the consultation meeting is attached and marked Annexure **JM22**.

164 On 8 April 2020, already attached as annexure **JM12**, AMCU again wrote to the DMRE. The letter essentially constituted AMCU's submissions on the implementation of Covid-19 measures in the mining and energy sector in order to safeguard workers' health. Amongst other things, AMCU proposed that a sectoral task team be established to oversee the implementation and compliance of the applicable legislative and regulatory framework. The main objective of the task team would be to develop appropriate guidelines for Codes of Practice (COP) for companies in the mining and energy sector. The guideline for COPs must then be gazetted as a regulation and a safety standard in the sector. Once the regulations are in place, all mines must implement them at their respective mines. Should a company need to deviate from these regulations, it must be done in consultation with their Chief Occupational Medical Officer. The Chief Occupational Medical Practitioner will have the authority to shut down any part of the mine on written notice to the mine manager and may, in consultation with other stakeholders, re-open a closed part of the mine. Only once these

regulations have been promulgated and all mines have submitted their Covid-19 measures to the Chief Inspector for approval, and only if and when such approval is granted, may employers instruct mine workers to return to work.

165 A response to AMCU's letter dated 5 April 2020 from DMRE was received on 8 April 2020. This response did not address the submissions AMCU made, nor did it address their concerns regarding the potential risk posed by the Covid-19 pandemic to mine workers and how employers sought to mitigate these potential risks. The letter is annexed above marked **JM13**.

166 AMCU again wrote to DMRE on 13 April 2020 outlining the concerns and the need for binding regulations to be gazetted to ensure that employers are obligated to put in place measures that will ensure mineworkers return to a safe and healthy work environment. The correspondence made clear that in the absence of these regulations, AMCU will not advise their members to return to work. The letter is attached as **JM23**.

167 We were eventually forced to raise our ongoing concerns with the DMRE through our lawyers. This correspondence, both dated 16 April 2020, is annexed here marked **JM24A** and **JM24B**.

168 Between the time **JM24A** and **JM24B** was sent, the COGTA Minister amended the regulations and expanded the ambit of essential services to include all mining on 16 April 2020.

169 The DMRE once more convened a consultation meeting with stakeholders on 17 April 2020. A copy of our letter to the DMRE dated 16 April 2020 requesting access to the meeting via teleconference or any other digital platform is attached and marked annexure **JM25**. On 17 April 2020, the day of the meeting, I was contacted by the Director General of DMRE who advised that I will be connected to the meeting by teleconference at 13:30. However, this did not happen. To date I have not received any word from the Department of DMRE on why I was not included in this meeting despite their prior commitment to include AMCU in the meeting.

XIV. URGENCY

- 170 Mining companies have already begun recalling their mineworkers to operations with the intention of getting back to full production as quickly as they can. Copies of correspondence evidencing this are attached and marked annexure **JM26**.
- 171 It has already been stated that the DMRE previously unlocked 132 mines, but all mines have now been unlocked with the 16 April 2020 amendment to the DMA Regulations. In the next couple of days to weeks, it is expected that around a quarter of a million mineworkers will return to operations upscaling until the full mining workforce is back at work.
- 172 Our lawyers wrote to the DMRE on 16 April 2020 demanding we be advised what steps are being taken to implement national binding and detailed standards before 17h00 on 17 April 2020. Our legal representatives spelled out for the DMRE the different legal frameworks that it easily could take steps with to implement national standards. A copy of this correspondence is already attached and marked annexure **JM24A**.
- 173 A short time after this lawyers' letter was sent to the DMRE, the COGTA Minister informed the public that the DMA regulations were being amended, with the addition of sections 11J and 11K and changes to Schedule B. Our legal representatives then wrote to the DMRE again advising that the amendments and additions to the DMA regulations were still inadequate and our original demand persisted. A copy of this second lawyer's letter dated 16 April 2020 is already attached and marked annexure **JM24B**.

174 To date our legal representatives have not received any response to either of these letters.

175 Instead, the DMRE sent another text message on 16 April 2020 to AMCU that another physical consultation meeting would be held on 17 April 2020. AMCU once again wrote to the DMRE asking for permission to attend the meeting electronically. The informal response was that the DMRE would ‘try’ and accommodate AMCU. A copy of our letter to the DMRE dated 16 April 2020 is already attached and marked **JM25**.

176 The DMRE’s Director-General advised me that they would attempt to link the AMCU at 13h30 on that Friday for the physical meeting. However, I waited for hours for the link up with no success. The DMRE did not contact me or link me into the 17 April 2020 discussions.

177 We are presented with no alternative but to bring this application on an urgent basis. The potential for ongoing and immediate harm is very real and serious. Our members and their families face severe prejudice with the risk of death, permanent disability from permanent lung impairment if they survive a serious infection, or painful sickness.

178 Presently the Compensation Commissioner of Labour does not recognise mineworkers as very high or high risk, and therein being afforded with a presumption that their Covid-19 infection is an occupational disease in terms of the Compensation of Occupational Injuries and Diseases Act (“COIDA”). Mineworkers are regarded as medium risk workers only. If infected they could

sue the mines under the common law, but their chances of successfully litigating such a claim is remote to impossible because of the evidential requirements. National binding and detailed standards are their only real hope for the protection of their rights.

179 There is little or no prejudice to the State Respondents with bringing this application on an urgent basis. AMCU has afforded the DMRE numerous occasions an opportunity to engage with our grave concerns. They presumably have already determined reasons for their failure to take meaningful action.

180 There is also little or no prejudice to the Minerals Council and mining companies. No relief is sought directly against them.

181 The ongoing refusal of the State Respondents to perform their responsibilities under their statutory and constitutional obligations will result in irreparable harm to potentially thousands of mineworkers and their families and communities. If the State Respondents remain supine, many will become infected and get sick and some will die. It is not an exaggeration to say that human lives are at stake.

182 It is submitted that the matter is very urgent and deserving of the required condonation to be placed on the urgent roll.

183 I note in conclusion that commissioning this affidavit conventionally has not been possible.

184 I do not own a printer. All print shops in my neighbourhood are closed. I was therefore unable to print a copy of this affidavit.

185 I therefore had to confirm the contents of this affidavit over a video teleconference with a commissioner of oaths.

186 This is set out in more detail in the affidavit of Mr Kahn.

187 I hereby seek condonation for filing this affidavit as it is. I am engaging with my legal team and others at AMCU to find a way to physically commission this affidavit as soon as possible.

XV. RELIEF

188 In terms of s 8 of PAJA and s 172(1)(b) of the Constitution, this Court can grant any order that is just and equitable.

189 AMCU seeks two forms of relief.

190 First, it contends that the following decisions should be reviewed and set aside because they are irrational and unreasonable in terms of PAJA and the principle of legality:

190.1 The Minister's decision not to declare the Covid-19 pandemic a health hazard in terms of s 76(1) of the MHSA. *In the alternative*, if the Minister has not taken a decision, then his failure to decide should be reviewed and set aside.

190.2 The Chief Inspector's decisions: (a) not to enact Guidelines in terms of s 9(3) read with s 49(6) of the MHSA; and (b) his decision not to require employers to enact codes of practice that comply with those guidelines. *In the alternative*, if the Chief Inspector has not taken those decisions, his failure to decide should be reviewed and set aside.

190.3 If the above decisions are not set aside, AMCU seeks an order reviewing and setting aside the COGTA Minister's DMA Regulations on the basis that they are inadequate.

191 Second, once those decisions are set aside, AMCU seeks further relief to ensure that proper decisions are taken to protect mineworkers. It seeks the following relief:

191.1 Substituting the Minister's decision not to declare a health hazard in terms of s76(1) (or his failure to decide whether to declare a health hazard) with a decision to declare a health hazard.

191.2 Substituting the Chief Inspector's decisions not to issue Guidelines under s 9(3) and not to require employers to issue COPs compliant with those Guidelines in terms of s 9(2) (or his failure to take those decisions), with decisions to issue the Guidelines, and to require employers to issue COPs.

192 Substitution is justified because:

192.1 The outcome is a foregone conclusion. Any decision other than to act in terms of ss 76(1) and 9(2)-(3) would be irrational, unreasonable and unlawful.

192.2 This Court is in as good a position as the Minister and the Chief Inspector to make the decision whether some binding, national standards are required.

192.3 It is urgent for the decision to be taken as soon as possible. Every day that elapses risks lives. Remittal would only waste time.

193 AMCU does not seek to dictate what measures the Minister should take in terms of s 76(2), nor what the content of the Chief Inspector's Guidelines should be. It

is for the decision-makers to decide precisely what action to take. AMCU only asks this Court to compel the Minister and the Chief Inspector to take action.

194 *In the alternative* to substitution, AMCU seeks an order compelling the Minister and the Chief Inspector to take the relevant decisions within 5 days, and to consider the Expert Opinion in taking those decisions.

195 *In the further alternative*, if the challenge to the Minister's and the Chief Inspector's decisions fail, but the challenge to the DMA Regulations succeeds, AMCU seeks an order compelling the COGTA Minister to enact new regulations within a fixed time period.

XVI. CONCLUSION

196 In conclusion, AMCU has thousands of members that are in grave danger if national binding and detailed standards for dealing with Covid-19 on mines are not gazetted,.

197 AMCU is not opposing or trying to obstruct the return to work for the mining sector. AMCU merely seeks to protect its members' rights to health and safety through binding obligations upon mining companies.

198 Without detailed national detailed standards, chaos and confusion will continue with dangerous and far-reaching consequences. There is no other real alternative. Arresting CEOs through the criminal justice system will not solve the real and larger problem. Mining companies are also entitled to clear and unambiguous law.

199 While AMCU accepts that some mining companies may rise to the occasion, uncoordinated self-regulation is simply inadequate in the face of the risk mineworkers face. A centralised and universal approach, informed by all stakeholders and the required experts, is required.

200 Wherefore we pray for the relief sought in the notice of motion, including the costs of two counsel.

JEFFREY KEHLA MPAHLELE

I certify that the Deponent has acknowledged that he knows and understands the contents of this Affidavit which was sworn to before me at _____ on this ____ day of April 2020, and that the provisions of the Regulations contained in Government Notice R1258 of 21 July 1972 (as amended) were complied with.

COMMISSIONER OF OATHS



The South African Policing Union

85 & 87 Rauch Street, Georgeville, Pretoria
 Private Bag X900, Pretoria, 0001
 Tel: 0861 927278 Fax: (012) 804-3017
 E-mail : pa.hq@sapu.co.za

“JM1”

Enquiries : T.M. Mogodiseng
Tel. No . : 0861 927278
Ref. Number : KX47

14 April 2020

SAPS
 P/Bag X90
PRETORIA

FOR ATTENTION:

THE MINISTER OF POLICE

CC:

- 1) THE NATIONAL COMMISSIONER : SAPS
- 2) THE DEPARTMENT OF LABOUR
- 3) NUMSA
- 4) AMCU
- 5) SOLIDARITY
- 6) NUM

Re: PERMISSIONS TO MINES TO OPERATE DURING LOCKDOWN

We are concerned as SAPU about the alleged permission from the mines that they are allowed to operate which we do not have anything in the form of the regulation that clearly shows that they have permission.

We are raising this because this might lead to a situation where police officers might be confronted with the mineworkers which can lead to an unfortunate situation which we do not want to see in our country.

Can you therefore intervene in this matter urgently by giving clear directives on the permissions they are alleging they have to operate?

As a progressive labour union, we are calling on all unions operating in the mining sector to engage on the matter and give clear directives to their members. We do not want a situation where workers are set up against each other especially during this time when we are fighting the enemy which is Covid-19.

National Office Bearers:

Mpho Kwinika (President), Thandi Mkhize (Deputy President), Thabo Matsose (1st Vice President),
 Ivan Magerman (2nd Vice President), Tumi Mogodiseng (General Secretary),
 Kgaogelo Magagula (Deputy General Secretary)



The South African Policing Union

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E-mail : pa.hq@sapu.co.za

The Department of Labour to urgently also go and inspect the mines just to make sure that the rules are not flouted at the expense of the workers.

SAPU urgently awaits your feedback and we will appreciate to be part of the joint meetings that will be held with the affected parties to resolve the above situation to ensure that we do not repeat the mistakes of the past.

SAPU Greetings!

TUMELO MOGODISENG
GENERAL SECRETARY

/jvdm

National Office Bearers:

Mpho Kwinika (President), Thandi Mkhize (Deputy President), Thabo Matsose (1st Vice President),
Ivan Magerman (2nd Vice President), Tumi Mogodiseng (General Secretary),
Kgaogelo Magagula (Deputy General Secretary)

“JM2”**IN THE LABOUR COURT OF SOUTH AFRICA****HELD IN JOHANNESBURG**

CASE NO: _____/2020

In the matter between:

**ASSOCIATION OF MINEWORKERS AND
CONSTRUCTION UNION**

Applicant

and

**MINISTER OF MINERAL RESOURCES
AND ENERGY**

First Respondent

CHIEF INSPECTOR OF MINING

Second Respondent

**MINISTER OF CO-OPERATIVE
GOVERNANCE AND
TRADITIONAL AFFAIRS**

Third Respondent

MINERALS COUNCIL SOUTH AFRICA

Fourth Respondent

EXPERT OPINION

Introduction

- 1 In response to the current Covid-19 pandemic, on 15 March 2020, the President of the Republic of South Africa announced that the country was declaring a national state of disaster in terms of the Disaster Management Act.¹
- 2 In light of the nature of Covid-19, social distancing and a period of lockdown was deemed the most appropriate response to reduce the rate of infection and flatten the rate of infection curve.

¹ Act 57 of 2002.

- 3 On 18 March 2020 regulations were promulgated under section 27(2) of the Disaster Management Act, 2002 (the DMA Regulations).² The DMA Regulations were amended on 25 March 2020³ to introduce the period of lockdown from 23h59, Thursday 26 March 2020 to 23h59, Thursday 16 April 2020. Additional amendments were published on 26 March⁴ and 2 April 2020.⁵ On 9 April 2020, the President announced the extension of the lockdown period to 30 April 2020. Further amendments to the DMA Regulations were announced on 16 April 2020.⁶
- 4 On 16 April 2020 the Minister of Cooperative Governance and Traditional Affairs (COGTA), promulgated and announced its intention to “ramp up production systematically once the lockdown has been lifted”. Specific to the mining sector, the Minister of COGTA announced the return of mineworkers to their workplaces and declared mining as an essential service. Coal mining operations would thus operate at 100% capacity and the rest of the mining sector would operate at 50% capacity.
- 5 Re-opening mines could serve as positive example of the country’s return to work strategy and a guide to other sectors. This, however, will require a national strategy coordinated with various government departments.
- 6 In this opinion we consider whether, at a national level, adequate measures have been put in place to ensure that mineworkers return to a working environment that is not harmful to their health and safety or the health and safety of the communities where

² GN318, Government Gazette 43107.

³ GN 398 Government Gazette 43148.

⁴ GN 419 Government Gazette 43168.

⁵ GN 446 Government Gazette 43199.

⁶ GN 465 Government Gazette 43232.

they reside. This assessment is made with reference to the instruments identified below.

- 7 This opinion is provided in response to an instruction to answer the above question from Richard Spoor Inc. Attorney, who are assisting and acting on behalf of mineworkers and mine unions.

Expertise

- 8 The contributors to this opinion are Professor Rodney Ehrlich, Professor Jill Murray, Professor Rajen Naidoo, and Professor David Rees. The contributors are leading authorities in the sphere of public health and occupational medicine in South Africa, with particular focus on the mining sector. In addition to this Professors Naidoo and Rees are members of the national joint task team for the Covid-19, under the auspices of the National Department of Health (“NDOH”) and specifically for Occupational Health and Safety. The contributors’ curricula vitae, illustrating their experience and qualifications, are attached to this report as Annexures A, B, C, and D, respectively.

Documents considered

- 9 The following documents were considered in drafting this opinion:
 - 9.1 Regulations gazetted under the Disaster Management Act, prior to 16 April 2020 amendment;
 - 9.2 Regulations gazetted under the Disaster Management Act, post the 16 April 2020 amendment;

- 9.3 Standard Operating Procedures published by the Minerals Council, dated 23 March 2020;
- 9.4 Standard Operating Procedures published by the Minerals Council, dated 9 April 2020; (this document refers to a 25 March 2020 SOP, but that document was not provided, it possibly means the 23 March 2020 SOP above)
- 9.5 10-Point Action Plan published by the Minerals Council, undated;
- 9.6 Minister of Mineral's remarks document, dated 25 March 2020;
- 9.7 Minister of Mineral's remarks document, dated 16 April 2020; and
- 9.8 Chief Inspector of Mining's Guiding Principles on Prevention and Management of Covid-19 in SAMI, dated 26 March 2020.

Disclaimer

- 10 The opinion is written in the personal capacity of the contributors, it is not necessarily the opinion of the organisations they are affiliated to. The contributors reserve the right to amend, substitute or vary their opinion if provided with further information or records.
- 11 The lowest risk strategy would be to not to return to work ("RTW ") at this early stage of the epidemic in South Africa. As this needs to be balanced with other considerations, if the decision is to return to work, it is necessary to mitigate risks as much as possible. Risk cannot be eliminated. Intrinsic to this approach is the ongoing monitoring of both transmission in this setting and of ability to adhere to control measures (e.g. availability of PPE, testing). In addition, it will be vital to monitor clinical outcomes (including deaths) in a real time manner. The possibility of reversing or adapting the decision to RTW, even for short periods, needs to be part of the plan upfront.

- 12 The opinion deals specifically with the question of whether there are adequate frameworks in place on a national level to keep mineworkers and their communities safe from Covid-19. It does not consider the specific measures taken by individual mines. Where we make submissions of law, we do so on the advice of Richard Spoor Inc. Attorneys and counsel.

Medical Context

- 13 The Novel Coronavirus (Covid-19) is an infectious disease caused by a virus, which emerged during 2019 and was declared a global pandemic by the World Health Organization (“WHO”) in March 2020. It has not previously been scientifically identified in humans. The disease is highly contagious. The Covid-19 virus spreads primarily through droplets of saliva or discharge from the nose or mouth when an infected person coughs or sneezes. It is becoming increasingly apparent that asymptomatic people are also able to transmit the virus. It can also be contracted through touching surfaces where the virus is present, when a person then touches his or her face. Ingestion is presently not considered to be a route of entry for the virus. It has an incubation period of seven to fourteen days during which a person may not know they are infected and inadvertently transmit the disease to other people. Medical experts have stated that older age groups, particularly those over 60 years of age, and certain people with compromised immune systems or underlying respiratory and other conditions (such as high blood pressure, heart disease, lung disease, cancer or diabetes) are at higher risk for severe disease complications and death. Once infected, the disease can cause respiratory failure and death.⁷ Many however experience no

⁷ <https://www.who.int/emergencies/diseases/novel-coronavirus-2019>.

symptoms or relatively mild symptoms. It is well known that lung disease is common amongst mineworkers in South Africa.⁸

- 14 The risk of infection and the number of potential deaths will differ with the stage of the epidemic. The risk of RTW while the number of cases and deaths are rapidly rising is high, both for miners and as a result of the potential to impact on transmission more widely. With control measures in place, the balance may be in favour of RTW during the next stage when there is a reduction in rates of new infections and consistent reductions in deaths at a national level. At that stage, further data may be available on the risk of severe disease in those with co-morbidities (eg HIV, tuberculosis). The risk would be much lower when there may be substantial herd immunity and/or availability of an effective vaccine, but this is unlikely in the foreseeable future.

Legal Framework

- 15 In light of the nature of Covid-19, social distancing and a period of lockdown was deemed the most appropriate response to reduce the rate of infection and flatten the rate of infection curve. However, essential services are expected to continue operating during the lockdown period. Essential services are not limited to health, laboratory and disaster management services. The DMA Regulations provide that essential services include a number of services listed in Part B of Annexure B to the Regulations and, at item 22, includes “Gold, gold refinery, coal and mining”. Regulation 11B(1)(a)(i) then provides that –

⁸ Rees D et al. Oscillating Migration and the Epidemics of Silicosis, Tuberculosis, and HIV Infection in South African Gold Miners. *Am J Ind Med* 2010; 53:398-404.

Trapido AS et al. “Prevalence of occupational lung disease in a random sample of former mineworkers, Libode District, Eastern Cape Province, South Africa.” *Am J Ind Med*. 1998 Oct;34(4):305-13

Nelson G. “Occupational respiratory diseases in the South African mining industry” *Glob Health Action*. 2013; 6: 10.3402/gha.v6i0.19520.

Naidoo R et al. “Respiratory Diseases among South African Coalminers” (2002) Safety in Mines Research Advisory Committee Final Project Report SIMHEALTH 606.]

“[f]or the period of lockdown ... every person is confined to his or her place of residence, unless strictly for the purpose of performing an essential service, obtaining an essential good or service ...”.

- 16 Under regulations 10(8) and 11(7) of the DMA Regulations, the relevant Minister or Cabinet member may issue directions setting out further conditions within his or her mandate, to address, prevent and combat Covid-19 and for the protection and safety of any person, including essential workers from Covid-19. To date, the Ministry of Minerals and Energy has issued the following that are of potential relevance:

- 16.1 On 25 March 2020 the Minister of Minerals and Energy issued a press statement in which he stated that the production and distribution of petroleum products is considered an essential service and that mining operations will be scaled down significantly, while essential services supporting the industry will continue.
- 16.2 On 26 March 2020 the Chief Inspector of Mines issued the “Guiding Principles on Prevention and Management of COVID 19 in [the South African Mining Industry]”. It is unclear under which statutory authority these were issued. The only provision expressly empowering the Chief Inspector of Mines to issue guidelines is in terms of section 9(3), read together with section 49(6), of the MHSA, but that relates to guidelines for codes of practice affecting the health or safety required by employers. The Guiding Principles (GPs) do not expressly deal with Codes of Practice. The GPs emphasise that the industry should adopt a risk-based approach in terms of section 11 of the MHSA. Section 11 requires employers to identify hazards and assess risks to the health or safety of employees. The GPs call upon employers to conduct a risk-based assessment covering all workings at mines. It deals with de-densification of employees on

transport modes and in other spaces; breathalyser testing; maintaining hygiene in the use of biometrics; alignment of the medical surveillance system and hygiene programmes to the Covid-19 pandemic; respiratory protective equipment; and personal hygiene measures. The GPs are immediately applicable and employers are responsible for assessing employees for Covid-19 before they enter the mine premises and are required to have a workplace policy and procedure in place.

16.3 On 16 April 2020 the Minister of Minerals and Energy issued another press statement in which he made several remarks pertaining to the amended Disaster Management Act regulations of the same date.

16.4 The amendment to the regulations was effected by the Minister of Cooperative Governance and Traditional Affairs (“COGTA”) under the Disaster Management Act on 16 April 2020. Prior to the amendment, item 22 of Annexure B to the regulations included “*Gold, gold refinery, coal and essential mining*” as an essential service and exempt from much of the lockdown regulations. The amendment on 16 April 2020 amended item 22 so as to read “*Gold, gold refinery, coal and mining*”. The effect of this is to make all mines essential services and thus exempt from lockdown regulations. The Minister on the same date further issued specific regulations for mines by inserting regulations 11J & 11K. The effect of regulations 11J and 11K is –

16.4.1 that all collieries that supply Eskom must continue to operate at full capacity;

- 16.4.2 other mining operations must be conducted at a reduced 50% capacity during the period of the lockdown and thereafter at increasing capacity as determined by direction issued by the Cabinet member responsible for mineral resources and energy;
- 16.4.3 a rigorous screening and testing program must be implemented as employees return to work;
- 16.4.4 the mining industry must provide quarantine facilities for employees who have tested positive for the COVID-19;
- 16.4.5 data collected during the screening and testing programme must be submitted to the relevant authority;
- 16.4.6 mining companies must make arrangements to transport their South African employees from their homes to their respective areas of operations;
- 16.4.7 workers from neighbouring SADC countries must be recalled at the end of the lockdown.

17 The Minerals Council has issued the following documents that are relevant to the Covid-19 pandemic:

- 17.1 On 18 March 2020 the Minerals Council issued a “10-Point Action Plan” to guide employers on workplace readiness for Covid-19. It is a one-page document with bullet points highlighting aspects of employee education, health worker readiness, access to personal protective equipment (PPE) for employees, influenza vaccinations, the impact on immune-compromised

employees, management of suspected cases and contacts, isolation of employees, travel advice, reporting of confirmed cases and monitoring.

17.2 On 9 April 2020 the Minerals Council issued the “Standard Operating Procedure for Minerals Council South Africa Mines: Following the Covid-19 Lockdown” (SOP). The SOP “provides guidelines for the management of the healthcare workers and employees returning to work following the Covid-19 South African lockdown”. Its “aim is to ensure good health and safety of employees on return to work (RTW)”. The SOP prescribes the appropriate procedure to be adopted by employers: before the arrival of employees on the mine and after the arrival of employees. In relation to the stage after arrival, it covers Infection prevention and control measures, screening at designated areas, referral of employees with abnormal findings, the assessment of employees in isolation areas; follow-up after the isolation/hospital admission period, continuous measures that must be implemented on a mine on the following the lockdown period and reporting. It includes as an annexure, a “Return to Work Medical Screening” form. This 9 April 2020 SOP references a 25 March 2020 SOP, but the legal representatives have only been able to locate another SOP dated 23 March 2020. The later SOP must be read together with the earlier.

18 The Minister of Minerals and Energy is empowered with wide powers in the face of an immediate health condition emergency under the Mine Health and Safety Act (MHSA) under section 76.

19 The Chief Inspector of Mines is further empowered to lay down Guidelines that mines may develop Codes of Practice against. The Chief Inspector of Mines is also

empowered to compel mines to develop Codes of Practice on any matter affecting the health or safety of employees and other persons who may be directly affected by activities at the mine. These Codes of Practice may deal with numerous issues located within mines and Guidelines have been previously gazetted by the Chief Inspector Mines for the Right to Refuse Dangerous Work and Personal Exposure to Airborne Pollutants. Any registered trade union may insist that a mine's Code of Practice is reviewed by the Chief Inspector of Mines, using the Guidelines as a measuring standard. This is not however unique to mining, where the Mine Health and Safety Act's section 9 on Codes of Practice is equated in section 7 of the Occupational Health and Safety Act and its Chief Inspector of Labour.

- 20 The Minister of Cooperative Governance and Traditional Affairs is currently also empowered to issue regulations under the present period of a National State of Disaster, in terms of section 27(2) read together with section 3 of the Disaster Management Act, having declared a national state of disaster through gazette on 15 March 2020. Under the Disaster Management Act these powers to issue binding regulations are vast and meant to allow government to rapidly resolve legal gaps in the current and existing legal frameworks for a limited time. Anyone that fails to abide by them during the period of the national state of disaster is potentially guilty of an offence.

Analysis of the mining sectors response

Overview

- 21 Having the systems and processes in place to address the challenges of the Covid-19 epidemic in the complex mining environment is a huge undertaking. The mining

industry may be better placed than most other industries. However this will require commitment, substantial resources and ongoing evaluation. While the mines have the ability to transport employees, maintain gate control and screenings, conduct regular employee training and education, provide medical facilities on site, conduct medical screening, and provide personal protective equipment (PPE), they have little or no experience with managing an emerging infectious disease of this type. The current situation requires new practices, vigilance and accurate information on which to act. There should be an acceptance that the return to work protocol must be located within the framework of the national public health response to the epidemic. Prof Ehrlich believes that the mining industry is an opportunity to develop a strategy that may set the benchmark for other industries, and so its response is critical.

- 22 Mines are no longer closed communities. They need to work closely with the NDOH and provincial and local authorities. This is particularly in regard to realistic social distancing, screening, testing, contact tracing, isolation, quarantine and identification of vulnerable family members. In other words, the local health system needs to be aware of the potential impact for amplification of the epidemic by of mineworkers moving between work, surrounding local communities and rural areas. This is referred to in the Minerals Council Standard Operating Procedures but requires expansion.
- 23 Mineworkers may be vulnerable because of occupational and other lung diseases, tuberculosis, HIV infection (even if on treatment it is not yet clear that they are less vulnerable than uninfected individuals), the difficulty in maintaining social distancing, for example in the cage ("elevator"), and the numerous unavoidable points of contact with other workers both on the surface and underground, and in dormitories if they live in them.

- 24 Risk based inclusion/exclusion is likely to pose difficulties and should be well prepared for. Furthermore, provision must be made for those who are reluctant to return to work on the grounds that they view their risk as outweighing the benefit, for example, older miners and those with co-morbidities. (Comorbidity means more than one disease or condition is present in the same person at the same time.) One possibility, if the return to work system is staggered, is to provide the option of joining a later cohort of returnees.

The SOP issued by the Minerals Council dated 9 April 2020

- 25 This document is arguably the most comprehensive from the documents reviewed and contains some of the necessary level of detail. However, the SOP is still a voluntary and non-binding document with no force of law compelling mines to adhere to the proposed practices. In addition to this the following gaps have been identified:
- 25.1 An appointee with appropriate expertise is needed at each mine tasked with oversight of the whole process and access to top management. This might include making recommendations for scaling back operations or even return to lockdown in the event of a substantial outbreak.
- 25.2 There should be external oversight of individual mine plans and practices and monitoring of the preventive practices and the Covid-19 situation on each mine. This requires timeous collection and reporting of information by mines on all relevant indicators. These would include for example doubling time of new cases and real-time reporting of deaths. Criteria for pull-back need to be determined in advance.

- 25.3 An industry wide helpline, backed by people with the relevant expertise, should be set up to take queries or give immediate advice where possible.
- 25.4 Covid-19 testing is not dealt with sufficiently in the documents. Particularly, if the mining industry is regarded as a strategic sector for early return to operations, an arrangement with the NDOH for access to tests and testing is needed, following NDOH's community protocols, including future protocols for expanded testing.
- 25.5 The assumption must be that there will be cases of Covid-19 and that some of these cases will be severe - this must be prepared for. With regard to the medical response, larger mining companies will benefit from their well-established mine medical services, either company provided or via contractors, but provision must be made for smaller companies. Moreover, where there is use of outside health services, a protocol must be established, in liaison with such services, for referral, testing and transfer of serious cases.
- 25.6 Further details on the underground protocol are required. For example, environmental and personal hygiene, social distancing, washing/hand solutions, and use of respirators or masks. Provision must also be made for dealing with workers who present as symptomatic while underground. These provisions must detail the process of masking, isolation, transport to surface etcetera.
- 25.7 Provision must be made for the management of visitors, and supply chain and subcontractor workers. Similarly, for the protection of commuting miners on taxi/public transport, in liaison with the local health authorities. Also, data on

presentations by symptomatic workers, screening and testing, etc should be monitored frequently to see if pull-back of return to operation is necessary. The 16 April 2020 regulations states that the mines must provide transport to and from the workplace.

26 With regard to the document as a whole, we note the following observations:

- 26.1 The SOP sets out “additional special steps and procedure to be followed in light of workers going back to work after lockdown” but in paragraph 4.1 a number of the procedures to be implemented before the arrival of employees are merely recommendations to be considered, for example, paragraph (g), (h), (i) and (j).⁹ This is inadequate. Mandatory standards should be imposed.
- 26.2 Paragraph 4.1(j) is vague and lacks force, it should prescribe mandatory requirements as opposed to recommended considerations. See for example the staggered work approach, this should be mandatory and not voluntary.
- 26.3 Paragraph 4.1(l) deals with reporting previous Covid-19 infections experienced during the lockdown, but fails to specify to whom the returning worker must report and who will follow up with the external health services for confirmation of the worker’s status.
- 26.4 Paragraph 4.2.1. references Infection prevention and control (“IPC”) in “departments”. It is not clear whether this includes underground operations.

⁹ The paragraphs provide that employers are to:

- “(g) Consider screening of employees in labour sending areas before they embark on their journey and isolation and quarantine at source as required.
- (h) If providing transport for the return of employees consider screening mechanisms before boarding and isolation and quarantine at source where required.
- (i) Consider dedensification / physical distancing opportunities for mass transport.
- (j) Workplaces should consider a staggered approach on the number of employees screened per day for return to work to minimise crowding at the screening areas and at the medical centre as well as transporting employees to the medical centre.”

- 26.5 Paragraph 4.2.1(b)(i) (and 4.2.1(g)) makes reference to "non-medical masks" and the latter describes various forms of homemade masks that would be acceptable. We do not agree. "home-made masks" are not acceptable in the close contact setting. These may be appropriate for ordinary members of the public where social distancing is easily practiced and manufactured masks are not readily available. They are not appropriate in a mining context. Mines ordinarily have a legal duty to supply their workers with dust protective masks. Industrial FFP2 respirators currently in use in mining operations for dust protection should be the standard for underground workers and others in congested spaces. We understand that these are available and in use, but do not have direct knowledge of this. If these are not available, an assessment by an appropriate expert is needed of the protective specifications of other types of "dust masks" and other manufactured masks that are available.
- 26.6 Alternatives to FFP2 respirators by definition will offer less protection against inhaling virus, but like all "masks" (i.e. those devices which do not meeting the requirements for being called a respirator, including medical/surgical masks, cloth masks, etc.) have as their main purpose protecting people around the wearer should he/she be infectious.
- 26.7 For non-close contact settings where social distancing is possible, other forms of respiratory protection such as a standardised cloth mask may have a role to play as an interim measure. This is in line with recommendations of the National Department of Health for public use.
- 26.8 Mines should have to report on PPE as one of the indicators of safe practice.

- 26.9 Paragraph 4.2.2(b)(x) and 5.1 requires individuals to clean their environment. There is a limit to the extent to which individuals can constantly clean their environment. This paragraph should place obligations on the mines to keep environments disinfected through continual cleaning. The paragraphs are not clear on what is meant by 'clean' and whether this means disinfect. "Cleaning" should be understood as cleaning with a chemical solution with known disinfective characteristics.
- 26.10 Paragraph 4.2.1(f) is vague, the term "frontline staff" must be clarified in the context of mines.
- 26.11 Paragraph 4.2.1(g) should specify the situations and locations where social distancing will not be possible, so that special arrangements for protection using PPE can be made if not already covered.
- 26.12 Paragraph 4.2.2.(b) – (d). Based on published evidence, the effectiveness of gateway temperature testing in screening infectious Covid-19 cases may be low, particularly in the absence of gateway symptom screening. Nonetheless temperature testing must be carried out.
- 26.13 Paragraph 4.2.2(e). Return to work screening items should include community exposures, specifically those who have had contact with Covid-19 cases (or close contacts under investigation for Covid-19). For migrant workers, Covid-19 screening must take place before they leave their areas where they live.
- 26.14 Paragraph 4.2.2(g) recommends that utilising "...a risk-based method to prioritise high-risk individuals (pre-existing occupational lung diseases, active TB, HIV with low CD4, non-compliant HIV patients and smokers), for more

active interventions such as prophylaxis and individualised counselling”. This recommendation needs to be elaborated on. For the benefit of those doing the screening and for the purpose of advising returning miners, there needs to be a specific guidance protocol.

- 26.15 Paragraph 4.3. For Covid-19 miners who remain at the mine, there needs to be accommodation allowing isolation and quarantine. For those with confirmed or suspected disease returning home, where permitted by medical practitioner and other relevant law, a strict mask and distance protocol needs to be emphasized. For telephone contact purposes, the ability of the miner to remain in communication needs to be recorded and arrangements made if this is not the case.

Guiding Principles issued by the Chief Inspector of Mines dated 26 March 2020

- 27 While these principles are relevant they are vague and lack specific guidance. We note the following issues with the guidelines:
- 27.1 Paragraph 3 (a). We presume that accommodation includes rooming, toilets, eating and recreational facilities. All of these areas require environmental control, including ventilation and disinfection.
- 27.2 In paragraph 4.1(a) no instruction is given on what an employer is to do once it has quantified the number of vulnerable employees and identified their risk of exposure.
- 27.3 Paragraph 4.1(b) Once a worker is Covid-19 positive, everyone he/she comes into contact with will be exposed. In principle, this may be the entire mine

premises, excluding surface/support staff who operate in restricted and access controlled locale. This consideration is not dealt with in the guiding principles.

- 27.4 Comprehensive Human Resources policies dealing with the various types of Covid-19 related withdrawal and the effect on the return to work must be established.
- 27.5 Routine breathalyser testing should be temporarily suspended unless effective IPC can be guaranteed. There is no reference to disposable mouthpieces in the guidelines. Breathalyser testing on suspicion of intoxication could be done at the medically supervised facility.
- 27.6 There are now a number of publicized protocols for protecting staff and patients in health facilities. These should be adapted for use in all mine medical activities, this includes hospitals, mine medical centres and mobile and temporary facilities. Rescue protocols should factor in the possibility of Covid-19 infected miners. All routine spirometry should be postponed
- 27.7 Paragraph 6.1.2 repeatedly uses the word “should” and not “must”, suggesting that employers are not compelled to, and will not be held to account should they not, implement the norms proposed in the guiding principles. While the reliance on the good faith of employers may be appropriate in certain circumstances, where employers are navigating a novel virus and employers’ knowledge of the potential for cross-infection and the virus’ effect on vulnerable employees may be limited, it is inadequate for the Chief Inspector to grant to employers this level of discretion in ensuring safe working conditions for its employees.

10-Point Action Plan dated 18 March 2020

- 28 This document is vague and not detailed. While it provides an overview of different aspects of healthy and safe working conditions, it does not guide employers on how to operationalise and implement each of the 10 points in the Plan.
- 29 Regarding point 1. It is unknown how a mining operation can ensure “regular, thorough handwashing, sanitizing hand rubs” or what sort of instruction ought to be given to “anyone with a mild cough, fever to self-isolate” and whether the self-isolation facility is to be provided at the workplace or whether employees are expected not to report for work at all in those circumstances.
- 30 Regarding point 2 and 3: triaging people with respiratory symptoms and the provision of “ordinary masks”, is not clear and does not ensure that mines adopt a uniform approach to ensuring the safety of employees. This is further at odds with the requirement that employees are provided with PPE. Employers therefore have no guidance on how to implement, safeguard and decontaminate or sterilise PPE.
- 31 Regarding point 4 and 5: It seems to be implied that people with compromised immune systems or underlying respiratory conditions are still to report for work. This is wholly unsatisfactory and the Plan ought to have a separate, considered approach to vulnerable employees and possibly direct that they do not attend the workplace. In addition, point 5 states that companies must identify people that are most at risk but does not give guidance on what ought to be done with these employees or whether they are to attend regular employment tasks. The focus on Covid-19 should not detract from ensuring that HIV, TB and other health care programs are available and running.

- 32 Point 8 does not state the measures employers should take in transporting employees to and from the mine premises, or how transport services within the mine premises will be handled, that is, whether the transport will be regularly sanitized; the maximum occupancy percentage permitted in any transport, based on square meterage or otherwise; hygiene; and the maintenance of social-distancing inside the vehicle.
- 33 The Plan does not take into account the current reality of mines as mining communities and that any infection transmitted at the workplace, will have a broader impact on the mining community as a whole and the family of miners. Cross-infection has not been considered. We have mentioned this important consideration earlier also, but it bears repeating.

Minister's press statement dated 25 March 2020

- 34 In this statement the Minister confirmed the adoption of a risk-based strategy. This, however, requires a risk-based assessment of the needs of each type of mining enterprise and whether the social-distancing requirements (for example maintaining a 1.5-meter radius between people, regular handwashing, and sanitising surface areas) are capable of implementation, and appropriate, across different mining environments and underground.
- 35 The steps recorded for implementation in the mining industry are mere proposals and there is no indication that this will be translated into mandatory obligations that employers are to observe, failing which they will face sanction by the DME or prosecutorial authorities.
- 36 There was no guidance on the duration for which production in the gold, chrome, manganese and other sectors were to scale down. It was not clear whether the

contemplated scaling down was only for the period of lockdown (as extended) or whether the scaling down was meant to be read with the continued provision of essential services supporting the sector and the maintenance of equipment. The latest amendments to the regulations obviously move us beyond this, and provide for production to be scaled up.

16 April 2020 amended regulations

37 The Minister of COGTA has gazetted binding national obligations upon the mines. These are welcome and appreciated. However, they are vague for much of the same reasons we have critiqued the Guiding Principles and Action Plans, and elaborated on the gaps in the SOP. We note the following concerns:

37.1 Nothing is mentioned about PPE and its detailed requirements and parameters.

37.2 Social distancing in mines, a complex issue, is not addressed at all.

37.3 The details and parameters of the transport obligations upon employers are not given.

Minister's remarks dated 16 April 2020

38 These remarks are essentially a restatement of the amendments to the regulations issued on 16 April 2020.

39 The Minister, however, records that:

“[DMRE] are proactively managing issues directly affecting mining and energy, in the interests of ensuring employee health and safety, as well as ensuring that these sectors we regulate are able to meet their obligations during this period, and are better positioned to ramp up production systematically once the lockdown has been lifted.”

- 40 The statement does not specify the time periods or allowances for ramping up. It is difficult to compile a comprehensive occupational health and safety plan with so little information given.
- 41 The Minister does not specify how a 50% maximum capacity will be measured in the non-coal mining sector.

Conclusion and Recommendation

- 42 As mentioned from the outset, the lowest risk strategy would be to not RTW at this early stage of the epidemic in South Africa. If the decision is to return to work, it is necessary to mitigate risks as much as possible. It is highly likely that there will be deaths as a result of the decision to return to mining, given the inevitable congregation of humans that will follow and the great difficulty in ensuring full compliance with social distancing and sanitising in the kinds of living and working environments we are talking about. Risk cannot be eliminated. What may be being considered by the state regarding the return to mining at this stage is that the economic damage to the economy may result in a greater number of deaths due to food insecurity. If the State is taking a such a decision, it is critical that the number of deaths be kept to the absolute minimum. That is why compulsory measures are so important.
- 43 The original question required of us of was whether at a national level, adequate measures have been put in place to ensure that mineworkers will return to a working environment that is not harmful to their health and safety or the communities where they reside.

- 44 If the decision is made to RTW and without more from the DMRE, we must conclude that the current instruments described do not adequately address the safety concerns of mineworkers, their families and extended communities. More is required.
- 45 This does not mean that there are not some mines that may be able to demonstrate that they have implemented measures to mitigate hazards arising from the pandemic. It is expected that at least some mines have addressed the inadequacies described above in detailed and practical terms. But it is also expected that others have not.
- 46 Our recommendation is therefore, that a binding, national standard is needed and required, that must clearly formulate the minimum detailed and unambiguous requirements for a mine to follow. This is clearly within the ambit of the DMRE, in consultation with the NDOH task team on Covid-19. The DMRE and the required national standard must be coordinated with all sectors of the country, and not within its own independent and parallel processes. The National Institute of Occupational Health and National Institute of Communicable Diseases must guide the DMRE, Mine Health and Safety Council, Minerals Council and trade unions on what is required and what comprises adequate standards.
- 47 We would be in favour of the DMRE adopting the Minerals Council's 9 April 2020 SOP as binding national standards in the short-term, once its shortcomings have been rectified as detailed above. More is however required in the long-term and this SOP will need to be expanded upon on the basis of compulsory, national, regulatory standards in consultation with the relevant stakeholders and experts, e.g. NIOH and NICD.

- 48 We use "short term" and "long term" in the context of the current, rapidly developing environment created by a pandemic involving a life-threatening, novel coronavirus, with the demonstrated potential for exponential increases in infection rates. "Short term" contemplates a holding position of one or two weeks at the most. Long term contemplates three weeks at the most.
- 49 This national standard should be gazetted under the MHSA so that it is not dependent on the expiry dates of the current National State of Disaster as the pandemic may remain a reality until the end of the year, or into the next.
- 50 All of us are prevented by the lockdown from leaving our homes to visit a police station or other office where we might find a commissioner of oaths. Hence the format in which this report is provided. If a legal mechanism can be found for one or more of us to sign a confirmatory affidavit, we will do so. This is a matter which we are exploring with the applicant's attorneys.

R D Ehrlich

20.04.20

Professor Rodney Ehrlich

J Murray

20 April 2020

Professor Jill Murray

Professor Rajen Naidoo

Professor David Rees

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Professor Rodney Ehrlich

Professor Jill Murray

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Professor Rajen Naidoo

Professor David Rees

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Professor Rajen Naidoo

Professor David Rees

“A”

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CURRENT POSITION

1. Professor Emeritus and Senior Research Scholar, School of Public Health and Family Medicine , UCT, (1 May 2016-date)

FORMER SUBSTANTIVE POSITIONS

1. Professor and Medical Subspecialist, *Groote Schuur Hospital* and *Department of Public Health and Family Medicine*, University of Cape Town (UCT) (Specialist/Lecturer, 1 Nov. 1993 –Dec 1999. Assoc Professor, Jan 2000-2009; Medical subspecialist/Professor 2009 - April 30, 2016).
2. Professor and Medical Subspecialist, *Department of Medicine, UCT* (Joint appointment). (1 Feb. 2004 – April 30, 2016))
3. Head, Division of Occupational Medicine, Department of Public Health and Family Medicine and Department of Medicine, UCT (Oct. 2013-April 30, 2016).
4. Director and Head of Department, School of Public Health and Family Medicine, UCT (1 Jul., 2002 – 30 Jun., 2007)

INTERNATIONAL AFFILIATIONS

1. Adjunct Associate Professor, Department of Preventive and Community Medicine, Mount Sinai Medical Center, New York. 1990-1999; 2001-2002.
2. Adjunct Senior Lecturer, Mailman School of Public Health, Columbia University, 2005-2007.
3. Co-Editor in Chief, American Journal of Industrial Medicine, June 2016-May 2019. (Deputy Editor, Apr 2009-May 2017).
4. Gruber Fellow in Global Justice, Global Health and Justice Program, Yale University, School of Law and School of Public Health, Mar.-Apr. 2013.
5. Visiting Exchange Scholar, Barry Commoner Center for Health and the Environment, Queens College, New York, 2016-2019.
6. Consultant (contract), School of Population and Public Health, University of British Columbia, Canada, 2017-date.

FORMAL QUALIFICATIONS

- **BBusSc**, (Bachelor or Business Science) UCT 1972. (First Class Honours, 9 class medals).
- **MBChB**, UCT 1981. (Distinction in the Second Professional Examination, class medal in Physiology).
- **DOH** (Diploma in Occupational Health), Wits University 1985 (Distinction/class medal).
- **FFCH(SA)** (Fellow of the Faculty of Community Health, Colleges of Medicine of South Africa), 1992. Registered as specialist in Community Health 1992, subspecialist in Occupational Health, 1998.
- **MFOM**, Member of the Faculty of Occupational Medicine of the Royal College of Physicians, UK (By invitation, 1997; allowed to lapse 2009).

- **PhD**, UCT 1999. Thesis: *“The epidemiology of childhood asthma in Mitchell’s Plain, Cape Town, with special reference to the role of environmental tobacco smoke.”*
- **FCPHM(Occ Med)(SA)** (Fellow of the College of Public Health Medicine (Occupational Medicine), Colleges of Medicine of South Africa). Fellowship by peer review, 2005.

OTHER TRAINING

1. Oriel College, Oxford University: BPhil (Economics) Programme, 1973-1974.
2. Mount Sinai School of Medicine: Fellow in Environmental Epidemiology, 1987 - 1989.
3. Columbia University, New York, Masters courses in epidemiology and biostatistics, 1987-1989.

PREVIOUS ACADEMIC APPOINTMENTS (prior to substantive positions listed above)

1. Junior Lecturer, Dept of Economics, University of Cape Town, Jan.-Jun. 1973; Jan. 1975 – Jun. 1976.
2. Medical Officer, Dept Occupational Medicine, National Centre for Occupational Health, Johannesburg, Jan. 1984 - Aug. 1987. (Head, Jan. 1986 - Aug. 1987).
3. Honorary Lecturer in Community Health, University of the Witwatersrand, Johannesburg, Jan., 1984 - Aug., 1987.
4. Instructor, Division of Environmental and Occupational Medicine, Mount Sinai Medical Center, New York, 1989-1990.

PREVIOUS CLINICAL APPOINTMENTS (prior to substantive positions listed above)

1. Intern, Medicine, Surgery, Obstetrics/ Gynaecology, Groote Schuur and Somerset Hospitals, 1982.
2. Senior House Officer, Paediatrics, Baragwanath Hospital, Soweto, Jan.- Jun.1983.
3. General Practice: Johannesburg, Jul. – Dec. 1983.
4. Medical Officer, Occupational Medicine Clinic, National Centre for Occupational Health, 1984-1987.
5. Sessional medical officer, Respiratory Clinic, Baragwanath Hospital, Soweto: Jan., 1984 - Dec. 1985.
6. Sessional medical officer, General Medicine Outpatients, Hillbrow Hospital, Johannesburg: Jan. 1986-Feb. 1987.
7. Staff physician, Irving J Selikoff – Mount Sinai Clinical Center, New York, 1987-1990.

HONOURS AND RECOGNITION

- Awarded post-specialisation Research Fellowship by Medical Research Council, 1992/93.
- Awarded membership by invitation, Faculty of Occupational Medicine of the Royal College of Physicians, United Kingdom, 1997.
- Nominated for Distinguished Teacher Award, UCT, 1999.
- Special award: South African Society of Occupational Medicine, for “outstanding contribution to occupational health in South Africa with publication of Handbook of Occupational Health Practice in South Africa”, Nov. 2002.
- Allergy Society of South Africa: award for best article in Current Allergy and Clinical Immunology in 2002.
- Elected Fellow by Peer Review, College of Public Health Medicine (Occupational Medicine), Colleges of Medicine of South Africa, 2005.
- Elected Collegium Ramazzini, 2005.
- Gruber Fellow in Global Justice, Yale University, Mar.-Apr. 2013.
- National Research Foundation B2 researcher rating (“..enjoys considerable international recognition for the high quality and impact of his/her recent research outputs”). From Jan. 2016.

- Invited to give annual *Alice Hamilton Lecture*, University of California at San Francisco, 24 May, 2018. *Mineworkers' Health in South Africa – the Perfect Storm of Dust, Tuberculosis and HIV*

SABBATICAL

- Department of Community and Preventive Medicine, New York, and Center for the Biology of Natural Systems, Queen's College, New York, Sep. 2000 – Jul. 2001.
- Centre d'Etudes Europeennes, Sciences Po, Paris, Nov. 2014.

PUBLICATIONS

Peer reviewed articles

1. Hayden MR, Ehrlich RI, Parker H, Ferera SJ. Social perspectives in Huntington's Chorea. *S Afr Med J* 1980; 58: 201-3.
2. Zwi AB, Ehrlich RI. Occupational history-taking in the RSA. *S Afr Med J* 1986;70:601-5.
3. Ehrlich, R.I., Gerston, K., and Lalloo, U. Accelerated silicosis in a foundry shotblaster - A case report. *S Afr Med J* 1988; 73:128-130.
4. Ehrlich, R.I., Rees, D. And Zwi A.B. Silicosis in non-mining industry on the Witwatersrand: A case series. *S Afr Med J* 1988;73:704-708.
5. Ehrlich, R.I. The Occupational Medicine Clinic of the National Centre for Occupational Health. *S Afr Med J* 1989;75:227-230.
6. Von Schirnding, Y.E.R. and Ehrlich R.I. Environmental health risks of hazardous waste exposures - an epidemiologic perspective. *S Afr Med J* 1992;81:546-549.
7. Ehrlich, R.I., Lilis, R., Nicholson, W.J., Chan, E., Selikoff, I.J. Long-term radiological effects of short-term exposure to amosite asbestos among factory workers. *Brit J Ind Med* 1992;49:268-75.
8. Ehrlich, R.I., Kattan, M., Godbold J, Saltzberg DS, Grimm KT, Landrigan PJ, Lilienfeld DE., et al. Childhood asthma and passive smoking: urinary cotinine as a marker of exposure. *Am Rev Respir Dis* 1992; 145:594-599.
9. Ehrlich, R.I., Lilienfeld, D.E. and Kattan M. Is passive smoking a cause of asthma in childhood? *J Smoking-Related Disorders* 1993;4:91-9.
10. Wartenberg, D., Ehrlich, R.I. and Lilienfeld D.E. Side-stream smoke and childhood asthma: analysis using q-q plots. *Environ Res* 1994;4:122-35.
11. Ehrlich, R.I. and Bourne D.E. Asthma deaths among coloured and white South Africans: 1962-1988. *Respir Med* 1994;88:195-202.
12. Ehrlich, R.I. Fatal asthma in a baker: a case report . *Am J Ind Med* 1994;26:803-7.
13. London, L., Ehrlich, R.I., Rafudien, S., Krige, F., Vurgarellis, P. Notification of pesticide poisoning in the Western Cape 1987-1991. *S Afr Med J* 1994;84:269-72.
14. Bailie, R., Truluck, T., Ehrlich, R.I. Trends in photochemical smog in Cape Town and implications for human health. *S Afr Med J* 1994;84:738-42.
15. Ehrlich, R.I. and Weinberg E.G. Increase in hospital admissions for acute childhood asthma in Cape Town: 1978-1990. *S Afr Med J* 1994;84:263-6.
16. Ehrlich, R.I., DuToit, D., Jordaan, E., Weinberg, E., Volmink, J., Zwarenstein, M. Prevalence and reliability of asthma symptoms in primary school children in Cape Town. *Int J Epidemiol* 1995;41:1138-46.
17. Jeebhay, M., Ehrlich, R.I. and Potter P. Occupational asthma due to imbuia wood dust. *J Allergy Clin Immunol* 1996;97:1025-7.
18. Ehrlich, R.I., DuToit, D., Jordaan, E., Potter, P., Weinberg, E., Volmink, J., Zwarenstein, M. Risk factors for childhood asthma and wheezing: the importance of maternal and household smoking. *Am J Respir Crit Care Med* 1996;154: 681-8.
19. White, N., Ehrlich, R.I. and Rees D. A guide to spirometry as applied to occupational health *S Afr Med J* 1996;86:807-13.

20. Moodley, J., Steyn, K., Ehrlich, R.I., Jordaan, E., Marais, A.D., Burgess, L. Lipid and ischaemic heart disease risk factors in an urbanising South African workforce. *S Afr J Med* 1997;87:1615-20.
21. Steen TW, Gyi KM, White NW, Gabosianelwe T, Ludick S, Mazonde GN, Mabongo N, Ncube M, Monare N, Ehrlich RI, Schierhout G. Prevalence of occupational lung disease among Botswana men formerly employed in the South African mining industry. *Occup Environ Med* 1997;54:119-26.
22. White N, Ehrlich RI. Regression of PVC pneumoconiosis. *Thorax* 1997;52:748-9.
23. Robins TG, Bornman MS, Ehrlich RI, Cantrell AC, Pienaar E, Vallabh J, Miller S. Semen quality and fertility of men employed in a South African lead acid battery factory. *Am J Ind Med* 1997;3:369-76.
24. Ehrlich RI, Robins T, Jordaan E, Miller S, Mbuli S, Selby P, Wynchank S, Cantrell A, De Haese P, De Broe M, Todd A, Landrigan P. Lead absorption and renal dysfunction in a South African battery factory. *Occup Environ Med* 1998;55:453-460.
25. Loewenson R, Ehrlich R. Occupational Health in Southern Africa - challenges to occupational epidemiology. *Int J Occup Environ Health* 1998; 4:241-245.
26. Bailie RS, Pilotto LS, Ehrlich RI, Mbuli S, Truter R, Terblanche P. Paraffin and other fuels as sources of indoor air pollution in poor urban environments. *J Epidemiol Comm Health* 1999; 53:585-586.
27. Jordaan ER, Ehrlich RI, Potter P. Environmental tobacco smoke exposure of primary school children in Cape Town: household, community and socioeconomic factors. *Arch Environ Health* 1999; 54:319-327.
28. Ehrlich RI, Jordaan E, Du Toit D, Volmink JA, Weinberg E, Zwarenstein M. Underrecognition and undertreatment of asthma in Cape Town primary school children. *S Afr Med J* 1998;88: 986-994.
29. Dalvie A, Ehrlich RI. Isocyanates: usage and quality of hazard information in South African industry. *South African Journal of Science* 1999; 95: 316-320.
30. Jones SL, Weinberg M, Ehrlich RI, Roberts K. Knowledge, attitudes and practices of parents of asthmatic children in Cape Town. *J Asthma* 2000; 37:519-528.
31. Buck RG, Miles AJ, Ehrlich RI. Possible occupational asthma among adults presenting with acute asthma. *S Afr Med J* 2000; 90; 884-888.
32. Govender M, Ehrlich RI, Mohammed A. Notification of occupational diseases by general practitioners in the Western Cape. *S Afr Med J* 2000; 90:1012-1014.
33. Tolosana S, Ehrlich R. Characteristics of liquid effluent from medical institutions in Cape Town. *S African Journal of Science* 2000; 96: 417-420.
34. Ehrlich RI, DuToit D, Jordaan E, Potter P, Weinberg E, Volmink J, Zwarenstein M. Household smoking and bronchial hyperresponsiveness in asthmatic children. *J Asthma* 2001; 3:239-251.
35. Todd AC, Ehrlich RI, Selby P, Jordaan E. Repeatability of tibia-lead measurement by x-ray fluorescence battery making workforce. *Environ Res* 2000; 84:282-289.
36. Oosthuizen J, Ehrlich R. The impact of pollution from a mercury processing plant in Kwazulu-Natal, South Africa, on the health of fish-eating communities in the area: an environmental health risk assessment. *Intern J Environ Health Research* 2001; 11:41-50.
37. Badri M, Ehrlich R, Pulerwitz T, Wood R, Maartens G. Association between tuberculosis and HIV disease progression in a high tuberculosis prevalence area. *Intern J Tuberculosis Lung Dis* 2001; 5: 225-232.
38. Badri M, Ehrlich R, Wood R, Maartens G. Initiating co-trimoxazole prophylaxis in HIV-infected patients in Africa: an evaluation of the provisional WHO/UNAIDS recommendations. *AIDS* 2001; 15:1143-1148.
39. Poyser MA, Nelson H, Ehrlich RI, Bateman ED, Parnell S, Puterman A, Weinberg E. Socioeconomic deprivation and asthma prevalence and severity in young adolescents. *Eur Respir J* 2002; 19:1-7.
40. Badri M, Ehrlich R, Pulerwitz T, Wood R, Maartens G. Tuberculosis should not be considered an

- AIDS-defining disease in areas with a high tuberculosis prevalence. *Int J Tuberc Lung Dis* 2002; 6:231-237.
41. Mercer MJ, Joubert G, Ehrlich RI, Nelson H, Poyser MA, Puterman A, Weinberg EG. Socioeconomic status and prevalence of allergic rhinitis and atopic eczema symptoms in young adolescents. *Pediatr Allergy Immunol* 2004; 15:234-241.
 42. Ehrlich RI, Norman R, Laubscher R, White N, Steyn K, Lombard C, Bradshaw D. Predictors of chronic bronchitis in adults in South Africa. *Int J Tuberc Lung Dis* 2004; 8:369-376.
 43. Luder E, Ehrlich RI, Lou WYW, Melnik TA, Kattan M. The association between asthma and body mass in adults. *Respir Med* 2004;98:29-37.
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 45. Myer L, Ehrlich RI, Susser E. Social epidemiology in South Africa. *Epidemiol Rev* 2004; 26:112-123.
 46. Churchyard G, Ehrlich RI, teWaterNaude J, Pemba L, Dekker K, Vermeijs M, White N, Myers J. Prevalence of silicosis and exposure response associations among goldminers in South Africa. *Occ Env Med* 2004; 61:811-816.
 47. Ehrlich RI, Norman R, Laubscher R, White N, Steyn K, Lombard C, Bradshaw D. Wheeze, asthma diagnosis and medication use: a national adult survey in a developing country. *Thorax* 2005; 60:895-901.
 48. Ehrlich RI, Prescott R. Rye predominance in baker's asthma. *Am J Ind Med* 2005; 48:153-5.
 49. te Water Naude J, Ehrlich RI, Churchyard G, Pemba L, Dekker K, Vermeijs M, White N, Myers J. Tuberculosis and silica. *Occup Environ Med* 2006; 63:187-192.
 50. Dalvie A, Ehrlich R. Community mercury levels in the vicinity of peri-urban waste disposal sites and fossil fuel burning operations. *Environ Intern* 2006; 32:493-499.
 51. Khumalo, N, Jessop S, Ehrlich R. Prevalence of cutaneous adverse effects of hair dressing: a systematic review. *Br J Dermatol* 2006; 142: 377-383.
 52. Khumalo NP, Jessop S, Gumedze F, Ehrlich R. Hairdressing is associated with scalp disease in African schoolchildren. *Br J Dermatol* 2007; 157: 106-10.
 53. Zar HJ, Ehrlich RI, Workman L, Weinberg EG. The changing prevalence of asthma, allergic rhinitis and atopic eczema in South African adolescents from 1995 to 2002. *J Allergy Clin Immunol* 2007; 118:560-565.
 54. Zwarenstein M, Bheekie A, Lombard C, Swingle G, Ehrlich R, Eccles M, Sladden M, Pather S, Grimshaw J, Oxman AD. Educational outreach to general practitioners reduces children's asthma symptoms: A Cluster Randomised Controlled Trial. *Implementation Science* 2007; 2:30. (doi:10.1186/1748-5908-2-30).
 55. Khumalo NP, Jessop S, Gumedze F, Ehrlich R. Hairdressing and the prevalence of scalp disease in African adults. *Br J Dermatol* 2007; 157: 981- 8.
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 57. Doolan K, Ehrlich R, Myer L. Experience of violence and socioeconomic position in South Africa: a national study. *PLoS ONE* 2007; 2(12): e1290. doi:10.1371/journal.pone.0001290
 58. Khumalo NP, Jessop SJ, Gumedze FN, Ehrlich RI. Marginal Traction Alopecia Severity Score: development and test reliability. *J Cosmetic Dermatol* 2007. 6(4): 262-9.
 59. Harling G, Ehrlich R, Myer L. The social epidemiology of tuberculosis in South Africa: a multilevel analysis. *Social Epidemiology* 2008; 66(2):492-505.
 60. Khumalo, N.P., Jessop, S., Gumedze, F., Ehrlich, R. Determinants of traction alopecia in African females. *J Am Acad Dermatol*. 2008; 59(3):432-8.
 61. Girdler-Brown, B., Ehrlich, R.I., White, N.W., Churchyard, G.. The burden of silicosis, tuberculosis

- and COPD among former Basotho gold miners. *Am J Ind Med* 2008; 51(9):640-7.
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 63. Cook, C., Cockburn, N., van der Merwe, J., Ehrlich, R. Cataract and glaucoma case detection for Vision 2020 programs in Africa – an evaluation of six possible screening tests. *J Glaucoma* 2009; 18(7):557-622.
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 65. White, N.W., Ehrlich, R.I., te Water Naude, J.M., Ravenscroft, G., Schutte, A., Roberts, W. Meteorologically estimated exposure but not distance predicts asthma symptoms in schoolchildren in the environs of a petrochemical refinery. *BMC Environmental Health*; 2009; 8:45. Doi:10.1186/1476-069X-8-45.
 66. Maiphethlo, L. and Ehrlich R. Claims experience of former gold miners with silicosis – a clinic series. *Occ Health Southern Afr* 2010;16: 10-16.
 67. Ross, J., Ehrlich, R.I., Hnizdo, E., White, N., Churchyard, G.J.. Excess lung function decline in gold miners following pulmonary tuberculosis. *Thorax*; 2010. Doi: 10.1136/thx.2009.129999.
 68. Adams S, Ehrlich R.I. Current and future OSH needs in developing countries: South Africa. *OSH & Development* 2010;10:69-73.
 69. Ehrlich R.I., Myers JE, te Water Naude J, Thompson ML, Churchyard GJ. Lung function loss in relation to silica exposure among South African gold miners. *Occ Environ Med*; 2011: 68:96-101.
 70. Mahomed, H., Hawkrigde, T., Verver, S., Geiter, L., Hatherill, M., Abrahams, D., Ehrlich, R., Hanekom, W., et al. Predictive factors for latent tuberculosis infection among adolescents in a high burden area in South Africa. *Int J Tuberc Lung Dis* 2011; 15(3):331-6
 71. Ehrlich, R.I., Baatjies, R., Adams, S., Jeebhay, M. Tuberculosis as a cause of chronic airflow obstruction and respiratory symptoms. *Int J Tubercle Lung Dis* 2011; 15(7):886-91.
 72. Mahomed H, Hawkrigde T, Verver S, Abrahams D, Geiter L, Hatherill M, Ehrlich R, Hanekom W, Hussey GD. The tuberculin skin test versus QuantiFERON TB Gold in predicting subsequent tuberculosis disease in an adolescent cohort. *PLoS One* 2011; Mar 29;6(3):e17984 <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3066222/pdf/pone.0017984.pdf>
 73. Ehrlich, R.I., Kibel, D. and Woolf D. Disulfiram reaction in an artist exposed to solvents – a case report. *Occ Med* 2012; 62:64-66.
 74. Ehrlich, R.I. Failure of the compensation system for occupational disease in South Africa. *S Afr Med J* 2012;102:95-7.
 75. Ehrlich, R.I. A century of miners' compensation in South Africa *Am J Ind Med* 2012;55:560-9.
 76. Roomaney, R., Ehrlich, R., Rother, H.A. The acceptability of rat trap use over pesticides for rodent control in two poor urban communities in South Africa. *BMC Environ Health* 2012. 11:32. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3508837/pdf/1476-069X-11-32.pdf>
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- et al. Screening for TB in high school adolescents in a high burden setting in South Africa. *Tuberculosis* 2013; 93(3):357-62 <http://dx.doi.org/10.1016/j.tube.2013/02/007>.
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- and related tuberculosis in the South African mining industry: practical and technical considerations. *Occup Health Southern Afr* 2018; 24 (2):38-42.
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2. Joubert G, Ehrlich RI (eds.) Epidemiology: A Research Manual for South Africa (2nd edn.). Cape Town: Oxford, 2007.
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2. Jeebhay M, Ehrlich R. Occupational asthma in South Africa. In: Potter PC, Lee S., eds. The ALLSA Handbook of Practical Allergy (2nd edn.) Cape Town: Allergy Society of South Africa, 2001. (Also on www.allergysa.org).
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Major policy, research and technical documents (as author or contributor)

1. Strategic Management Team: Report on Occupational Health to the Provincial Administration of the Western Cape, 1995. (Contributed to provincial health policy).
2. Report of the Committee on Occupational Health to the Minister of Health, 1996. (Contributed to national health policy).

3. Henchie S, Ehrlich RI. *An evaluation of the Compensation Fund for Occupational Injuries and Diseases: what is its capacity fund prevention activities such as research?* Monograph, Occupational and Environmental Research Unit, Dept of Community Health, UCT, Jan 1998. (For WHO-SA Technical Cooperation Programme).
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8. (Sections). Adolescent Health: Chronic respiratory symptoms and peak expiratory flow rates in adolescents (p. 186-7). Mortality and Morbidity in Adults: Self-reported prevalence of tuberculosis (p. 204-5), Chronic obstructive pulmonary diseases and asthma (p. 249-57). In: Department of Health, Medical Research Council, OrcMacro. 2007. South African Demographic and Health Survey, 2003 (Full Report). Pretoria; Department of Health. 2007.
9. Work and Health in Southern Africa (WHASA). Guideline on isoniazid preventive therapy for patients with silicosis in Southern Africa. 2007. Available: <http://www.wahsa.net/Uploads/Policy%20briefs/IPT%20silicosis%20guidelines-20September%20Gaborone%202008.pdf>
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2. Zwi S, Ehrlich RI, Rees D, Zwi AB. The Pneumoconioses. *S Afr J Continuing Med Educ* 1986; 4:93-99.
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4. Ehrlich RI. Passive smoking and health. *Modern Medicine* 1991; 16:97-103.
5. Ehrlich RI, Bourne DE. Death from asthma in South Africa. *Current Allergy* 1992;4:11-13.
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 22. Smallwood J, Ehrlich R. Occupational health in the South African construction industry: management and worker perceptions. *African Newsletter on Occupational Health and Safety* 2001; 11:10-12.
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 27. Ehrlich RI. Silica, silicosis and tuberculosis – recognizing the clinical link. *South Afr J Continuing Medical Education* 2009; 27:510-1.
 28. Ehrlich RI. Rethinking the prevention of occupational tuberculosis in health workers. *Provincial Health Newsletter, Western Cape Government.* 10 (June) 2018.

CONGRESSES/MEETINGS

Personally presented (international)

1. Ehrlich RI. Two studies in respiratory epidemiology. Poster. First Charles A. Dana Conference. The Johns Hopkins University, Baltimore, March 11-12, 1988.
2. Ehrlich RI. Monitoring the health of workers in South Africa. 116th Annual Meeting of the American Public Health Association, Boston, Nov 13-17, 1988.
3. Ehrlich RI, et al.. Passive smoking and childhood asthma: urinary cotinine as a biomarker of exposure. XIIth Scientific Meeting of the International Epidemiologic Association, Los Angeles, California, Aug 9, 1990.
4. Ehrlich RI, et al. Characteristics of the urinary cotinine levels in a population of controls from a

- case-control study of pediatric asthma and exposure to environmental tobacco smoke. Poster. Second Annual Meeting of the International Society for Environmental Epidemiology, Berkeley, California, Aug 13-15, 1990.
5. Ehrlich RI, et al. Long-term x-ray outcome among short-term amosite factory workers . 8th International Conference on Occupational Lung Diseases, Prague, Czechoslovakia, Sep. 14-17, 1992.
 6. Ehrlich RI, Bourne D. Trends in malignant melanoma in South Africa: a possible association with sunspot cycles Thirteenth Scientific Meeting of the International Epidemiological Association, Sydney, Australia, Sep. 26-29, 1993. Deaths from tobacco related lung disease in South Africa. 9th Conference on Tobacco and Health, Paris, France, Oct 10-14, 1994.
 7. Ehrlich RI. Occupational health in South Africa - new governance, old obstacles. 124th annual Meeting of the American Public Health Association, New York, Nov 18-21, 1996.
 8. Ehrlich RI, et al. Semen quality and fertility of men employed in a South African lead acid battery factory. 12th International Symposium: Epidemiology in Occupational Health, International Commission on Occupational health, Harare, Zimbabwe, Sep 17-19, 1997.
 9. Invited presentation: Ehrlich RI, Loewenson R. Occupational Health in Southern Africa - Challenges to Occupational. 12th International Symposium: Epidemiology in Occupational Health, International Commission on Occupational health, Harare, Zimbabwe, Sep 17-19, 1997.
 10. Ehrlich RI, Moodley J. Lipid and ischaemic heart disease risk factors in an urbanising South Africa workforce. 2nd International Conference on Work Environment and Cardiovascular Disease. Tel-Aviv, Israel, March 22-25, 1998.
 11. Ehrlich RI. Occupation as a risk factor for obstructive lung disease in a national household survey in South Africa. 16th EPICOH Congress on Epidemiology in Occupational Health, Barcelona, Sep.11-14, 2002.
 12. Invited presentation: Ehrlich RI. Occupational and environmental factors in COPD. Congress of the International Union against Tuberculosis (UNION). Cape Town, 9-12 Nov. 2007.
 13. Ehrlich RI. A hundred years of miner's phthisis on the South African goldmines: any end in sight? Meeting of the Collegium Ramazzini, Carpi, 27-29 Oct. 2007.
 14. Invited presentation: Murray J, Ehrlich R. Silica, silicosis and tuberculosis – unanswered questions. 29th ICOH International Congress on Occupational Health, Cape Town. 22-27 Mar. 2009.
 15. Invited presentation: te Water Naude J, Ehrlich R, Franzblau A. Establishing the equivalence of digital and analog chest radiography in medical surveillance of a workforce with a high silicotuberculosis prevalence. 29th ICOH International Congress on Occupational Health. Cape Town. 22-27 Mar. 2009.
 16. Ehrlich RI. One hundred years on: a new epidemic of miner's phthisis among South African gold miners. 29th ICOH International Congress on Occupational Health, Cape Town. 22-27 Mar. 2009.
 17. Invited presentation. Ehrlich RI. Respiratory disease and indoor air pollution. What do we still need to know? First Research Meeting of the Global Alliance for Chronic Disease, Delhi, 5-7 Nov, 2009.
 18. Ehrlich RI. Silica and tuberculosis in a globalising world: Forgotten but not gone. Annual meeting of the Collegium Ramazzini, Carpi, 22-24 Oct. 2010.
 19. Ehrlich RI. Not a benign disease. Impairment following silica dust exposure, silicosis and tuberculosis in South African gold miners. 22nd EPICOH Congress on Epidemiology in Occupational Health, Oxford, UK, 7-9 Sep. 2011.
 20. Ehrlich R, Knight D, Fielding K, Jeffrey H, Grant A, Churchyard G. Predictors of silicosis in a cross company study in the South African gold mining industry. 23rd EPICOH Congress on Epidemiology in Occupational Health, Utrecht, The Netherlands 19-21 June, 2013.
 21. Adams S, Ehrlich R, Van Zyl Smit, Said-Hartley, Dawson, Dheda K. Occupational factors associated

- with LTBI and conversion in health workers in a high tuberculosis/HIV prevalence setting. 23rd EPICOH Congress on Epidemiology in Occupational Health, Utrecht, The Netherlands, 19-21 June, 2013.
22. Invited presentation. Ehrlich R. Silicosis and the “head of the snake”: silica, gold mining and tuberculosis in Southern Africa. Ramazzini Days (Annual meeting of the Collegium Ramazzini), Carpi, 24-26 Oct. 2014.
 23. Invited presentation. Ehrlich R. Silica, silicosis and tuberculosis: an extricable triad. International workshop on The Role of Inorganic Particles in Pulmonary, Systemic and Autoimmune Diseases. Sciences Po, Paris, 14-15 Nov. 2014.
 24. Invited presentation. Ehrlich R. Prevention of silicosis in Southern Africa. Perspectives in Global Environmental Health, Istituto Superiore di Sanita. Rome, 22 Oct. 2015.
 25. Ehrlich R, Bloch K, Nkosi M, Johnson L. Mortality experience of South African migrant miners. 27th EPICOH Congress on Epidemiology in Occupational Health, Barcelona, Spain, 05-07 Sept., 2016.
 26. Myers J, Ehrlich R. Hollow counting: Measurement of dust in the South African gold mines. ICOH Conference on the History of Occupational and Environmental Health, Gothenburg, Sweden, 29-31 March, 2017.
 27. Invited presentation: Ehrlich R. Protecting health care workers from occupational tuberculosis and its effects: long on guidelines, short on implementation? 31st ICOH International Congress on Occupational Health, Dublin, Ireland, 29 April - 4 May 2018.
 28. Invited plenary presentation Occupational lung disease in miners. When Occupational Health becomes Public Health. 31st ICOH International Congress on Occupational Health, Dublin, Ireland, 29 April - 4 May 2018.
 29. Van der Water N, Yassi A, Ehrlich R. Workers’ compensation for occupational tuberculosis in health workers in South Africa, 49th UNION World Conference on Lung Health, The Hague, Netherlands, Oct 24-27, 2018.
 30. Keynote address: Ehrlich R, Spiegel J, Adu P, Yassi A. Current guidelines for protecting health workers from occupational tuberculosis are necessary but not sufficient: Towards a comprehensive occupational health approach. 11th Joint Conference on Occupational Health for Health Workers, Hamburg, 22-24 Oct. 2019.

Personally presented (South African)

1. Ehrlich R. Silicosis in non-mining industry on the Witwatersrand. Congress of the South African Pulmonology Society. Ceres, April 1987.
2. Ehrlich R. Procedures for assessing compensability of occupational disease. Conference on Changes to the Workmen's Compensation Act, Midrand, Transvaal, March 26-28, 1992.
3. Invited presentation. Ehrlich R. Workmen's compensation and social security. Conference on Social Safety Nets in South Africa, Stellenbosch Univ., June 1-2, 1992.
4. Ehrlich R, Bourne D. Asthma deaths in South Africa: 1967-1988. Poster. Eleventh annual conference of the Epidemiologic Society of Southern Africa, Johannesburg, August 29-30, 1992.
5. Invited presentation. Ehrlich R. Preventing occupational injuries and diseases in (South) Africa. 18th Annual Conference of the Federation of African Medical Students Associations (FAMSA), UCT, April 13-17, 1993.
6. Invited presentation. Ehrlich R. Occupational medical surveillance - *primum non nocere*. Conference on Occupational Health in Southern Africa, Zithabiseni, Transvaal, Aug 28-Sep 2, 1994.
7. Truluck T, Ehrlich R. The association between childhood hospital admissions for respiratory illnesses in Cape Town and air pollution and meteorological factors. 1994 National Assoc Clean Air Conference, Cape Town, Nov. 24-25, 1994.

8. Invited presentation. Ehrlich R. Difficulties in diagnosing and managing occupational asthma in South Africa. Allergy Society of South Africa Congress, Durban, Oct 2-4, 1996.
9. Ehrlich R. Underrecognition and undertreatment of childhood asthma in Cape Town. 15th Epidemiologic Society of Southern Africa Conference, Cape Town, Apr 14-17, 1997.
10. Ehrlich R. Environmental determinants of chronic lung disease in South Africa. First Conference of the Public Health Association of South Africa. Cape Town, Mar. 25-26, 2003.
11. Invited presentation Ehrlich R. Reviews of population studies of asthma. 2nd Asthma for Africa Congress, Durban, Oct.1 7-19, 2003.
12. Invited presentation. Ehrlich R. How to recognise occupational asthma. 2nd Asthma for Africa Congress, Durban, Oct. 17-19 2003
13. Invited presentation. A study of allergic diseases and the urban environment in the northern communities of Cape Town, South Africa. National Association for Clear Air Conference, Durbanville, Cape Town, May 20, 2004.
14. Invited presentation: Ehrlich R. Indoor and outdoor air pollution. Combined Congress of the South African Thoracic Society, Allergy Society of South Africa and South African Cystic Fibrosis Association, Cape Town, March 2-5, 2007
15. Invited presentation: Ehrlich R. Progressive massive fibrosis. Annual Congress of the South African Society of Occupational Medicine, Cape Town, March 5-6, 2007.
16. Invited presentation. Are we teaching our students bad research habits? Second Annual MRC Research Day (Conference). Cape Town, Oct. 16-17, 2008.
17. Invited presentation Grappling with the question “What is an occupational disease”? Annual Congress of the South African Society of Occupational Medicine, Cape Town, Feb. 2019

Congress abstracts - not presented personally

1. Ascott-Evans BH, Ehrlich RJ. Endocrine dysfunction in lead poisoning. Programme of the Ninth International Congress of Endocrinology. Nice, France, Aug 1991.
2. Truluck TF, Ehrlich RJ, Von Shirnding YFR. Hospital admission patterns of childhood respiratory illness in Cape Town. Programme of the Eleventh annual conference of the Epidemiologic Society of Southern Africa, Johannesburg, August 29-30, 1992: p.48.
3. Von Shirnding YER, Mokoetle K, Zwi S, Ehrlich R, Truter R, Sithole J, Annegarn H, Tosen G. Soweto childhealth respiratory study: prospective study design and methodology. Programme of the Twelfth Epidemiologic Conference of the Epidemiologic Society of Southern Africa, Durban, Aug. 18-20,1993.
4. Von Shirnding YER, Mokoetle K, Zwi S, Saloojee Y, Ehrlich R, Bellingham A. Soweto child health respiratory study: results at six months. Programme of the Twelfth Epidemiologic Conference of the Epidemiologic Society of Southern Africa, Durban, Aug 18-20, 1993.
5. Selby P, Ehrlich R, Jeebhay MF, Kibel MA, Mann MD, Todd AC, Wynchank S. Occupational lead levels determined by spectral analysis of fluorescent K Xrays. Programme of the 3rd European Conference on Engineering and Medicine, Florence, Italy, Apr. 30-May 3, 1995.
6. Esterhuisen T, Hnizdo E, Rees D, van Schalkwyk E, Ehrlich R, White N, Laloo U. Multi centre follow up study of occupational asthma cases in South Africa: proposal and study protocol. Programme of the 15th SA Pulmonology Society Congress, Wild Coast Sun, Kwazulu-Natal, Mar 21-25, 1999.
7. Pather S, Zwarenstein M, Swingler G, Ehrlich R, Lombard C, Sladden M, Eccles M, Adams J, Bheekie A. Prevalence of asthma related symptoms in pre- and primary school children in Cape Town, South Africa. 30th IUATLD World Conference on Lung Health, Madrid, Sep. 15-18, 1999.
8. Zwarenstein M, Adams J, Bheekie A, Swingler G, Ehrlich R, Lombard C, Pather S, Sladden M, Eccles M, with National Asthma Education Programme. Cluster randomised controlled trial of

- academic outreach demonstrates improved health status of asthmatic children attending private practitioners in a poor urban community in South Africa. 30th IUATLD World Conference on Lung Health, Madrid, Sep. 15-18, 1999.
9. Bheekie A, Zwarenstein M, Swingler G, Ehrlich R, Adams J, Pather S, with National Asthma Education Programme. Development of a face-to-face educational intervention programme to improve childhood asthma management. 30th IUATLD World Conference on Lung Health, Madrid, Sep. 15-18, 1999.
 10. Fenemore B, Lopata A, Ehrlich R, Potter PC. Allergy to Locusts. Allergy Society of South Africa Rhinitis conference, Stellenbosch, Oct 7-9, 1999.
 11. Bheekie A, Zwarenstein MZ, Swingler G, Ehrlich R. General practitioner responses to pharmacists' educational outreach on childhood asthma: qualitative evaluation. 16th Annual Conference, South African Association of Hospital and Institutional Pharmacists, Central Drakensberg, 28 Feb-3 Mar, 2002.
 12. Onwuchekwa U, Nasief VD, Theunissen N, Gool Q, Ismail L, Coleman C, De Maar, L, Devel K, Redform A, Tew C, Ehrlich R. Work related ailments among patients attending public health clinics in developing countries. Experience from Cape Town, South Africa. 16th Congress of the International Epidemiological Association. Montreal, 18-22 Aug., 2002.
 13. White NW, Ehrlich RI, teWaterNaude J, Schutte A, Essack N, Roberts W. A study of allergic diseases and the urban environment in the northern communities of Cape Town, South Africa. Congress of the South African Thoracic Society, Cape Town, 24-28 Aug., 2003.
 14. Patel B, Abdullah F, Coetzee D, Ehrlich R. Determining the HIV prevalence of in six week old infants born to HIV positive mothers who are given niverapine. United Nations Habitat: Universal Forum of Cultures, Barcelona, 10-20 Sept. 2004
 15. Zar HJ, Ehrlich RI, Weinberg EG. The prevalence of asthma, allergic rhinitis and atopic eczema (ISAAC Phase 3 study) in adolescents in Cape Town and comparison with ISAAC 1. South African Paediatric Association and Allergy Society of South Africa Congress 2004, Cape Town, South Africa. *Curr Allergy Clin Immunol* 2004; 17(3):140.
 16. Zar HJ, Ehrlich RI, Weinberg EG. The International Study of Asthma, Allergic Rhinitis and Atopic Eczema (ISAAC) Phase 3 in South Africa and comparison with ISAAC 1. South African Thoracic Society Conference 2004, Durban, SA. *S Afr Respir J* 2004;10(2):78
 17. Ehrlich RI, teWaterNaude J, Churchyard G, Pemba L, Dekker K, Vermeijs M, White N, Myers J. Prevalence of silicosis and exposure response associations among goldminers in South Africa. 17th International Symposium on Epidemiology in Occupational Health, Melbourne, 13-15 Oct., 2004
 18. teWaterNaude J, Ehrlich RI, Churchyard G, Pemba L, Dekker K, Vermeijs M, White N, Myers J. 17th International Symposium on Epidemiology in Occupational Health, Melbourne, 13-15 Oct., 2004.
 19. Zar HJ, Ehrlich RI, Weinberg EG. The rising prevalence of asthma, allergic rhinitis and atopic eczema in African adolescents from 1995 to 2003. European Respiratory Society 2005.
 20. Mahlati U, Ehrlich R, Zar H. Dietary and environmental factors associated with asthma symptoms in Cape Town schoolchildren. Combined Congress of the South African Thoracic Society, Allergy Society of South Africa and South African Cystic Fibrosis Association, Cape Town, March 2-5, 2007.
 21. Park HH, Girdler-Brown BV, Ehrlich R, Churchyard GJ. Silicosis, COPD, TB, and HIV in a cohort of Basotho gold miners followed for one year after lay-off. 39th Union World Conference on Lung Health, Paris, 16-20 Oct, 2008. *Int J Tuberc Lung Dis*, 2008;12(11 Suppl 2):S59.
 22. Adams S, Ehrlich RI, Van Zyl Smith R, Dawson R, Said-Hartley Q, Dheda K. Mycobacterium tuberculosis infection in health workers at primary care facilities in the Western Cape. 2nd South African TB Conference, Durban, 1-4 June, 2010.

23. Dearham A, Zar, Ehrlich R. An analysis of sociodemographic, dietary and environmental determinants of rhinitis and eczema symptoms among adolescents in Cape Town, South Africa: Findings from the International Study of Asthma and Allergies in Childhood (ISAAC) Phase Three Study. 7th Conference of the Public Health Association of South Africa, Gauteng, 30 Nov - 1 Dec. 2011.
24. Roomaney R, Ehrlich R, Rother A. Acceptability of rat traps over pesticides in peri-urban communities: An analysis of factors influencing rat trap adoption. 7th Conference of the Public Health Association of South Africa, Gauteng, 30 Nov -1 Dec. 2011.
25. Knight D, Ehrlich R, Fielding K, Jeffrey H, Grant A, Churchyard G. Changing epidemiology of silicosis among miners active in the South African gold mines. 23rd EPICOH Congress on Epidemiology in Occupational Health, Utrecht, The Netherlands 19-21 June, 2013.
26. Weber HC, Robinson P, Micallef N, Beggs S, Els I, Ehrlich R. Do children with cystic fibrosis receiving various forms of outreach care have poorer outcomes than those treated at a specialist cystic fibrosis centre? 10th Australasian Cystic Fibrosis Conference, Auckland, New Zealand, 20 August 2013.
27. Weber HC, Robinson P, Allen P, Ehrlich R. Clinical predictors for lung function outcome in a cohort of paediatric and adolescent patients with cystic fibrosis. 10th Australasian Cystic Fibrosis Conference, Auckland, New Zealand, 20 Aug 2013.
28. TeWaterNaude JM, Ehrlich RI, D'Arcy H, Sen A, Smilg J, Mashao K, Meyer C, Lockey J, Franzblau, A. Reproducibility of digital x-ray and analog x-ray readings. African Regional Association of Occupational Health (ARAOH) and South African Society of Occupational Medicine (SASOM) Congress, 1-3 August 2014 in Johannesburg, 1-3 Aug 2014.
29. Parent S, Ehrlich R, Baxter V, Kannemeyer N, Yassi A. Preventing workplace transmission of TB: an arts-based approach to South African healthcare workers. Canadian Conference on Global Health, Montreal, Canada, 5-7 Nov, 2015.
30. Schmidt B, Engel ME, Abdullahi L, Ehrlich R. Effectiveness of control measures to prevent transmission of tuberculosis infection to health care workers: a systematic review. Global Evidence Summit, Cape Town, South Africa, 13-16 Sep 2017.
31. Lyle V, Ehrlich R. The extent to which annual tuberculosis incidence rates in gold miners exceed those of appropriate comparison groups: A descriptive review. 5th SA TB Conference, Durban, June 13-15, 2018
32. Lucchini R, Ehrlich R, Straif K, McDermiad M. The UN declarations on End TB and NCDs: we need to be more active in promoting global understanding of primary prevention of occupational and environmental exposures. Ramazzini Days (Annual meeting of the Collegium Ramazzini), Carpi, Nov. 1-4, 2018.
33. Adu P, Yassi A, Ehrlich R, Spiegel JM. Barriers to tuberculosis prevention among health workers in South Africa: A qualitative study. Cascadia Conference. Semiahmoo Resort (Blaine, WA). January 10-11, 2019.
34. Garcia R, Yassi A, Ehrlich RI, Romão P, Nunes E, Spiegel J. TB in healthcare workers in Mozambique: Unpacking state responsibility. 11th Joint Conference on Occupational Health for Health Workers, Hamburg, 22-24 Oct. 2019.
35. Adu PA, Yassi P, Ehrlich RI, Spiegel JM. Exploring systemic barriers to tuberculosis prevention and control among health workers in South Africa. 11th Joint Conference on Occupational Health for Health Workers, Hamburg, 22-24 Oct. 2019.

Scientific Conferences – Convening or Review Committee

1. Organising Committee, Conference of the National Medical and Dental Association, Wits, 1985.
2. Organiser, First South African Occupational Medicine Clinical Forum, UCT, Nov.1993.
3. Scientific Organising Committee, 12th International Symposium: Epidemiology in Occupational

- Health, International Commission on Occupational health (ICOH), Harare, Zimbabwe, Sep. 17-19, 1997.
4. Organiser, International Symposium on North-South Research Collaboration, Cape Town, Sep. 22, 1999. Sponsored by Third World Academy of Sciences and UCT Research Conferences Award.
 5. Scientific Review Committee: First Conference of the Public Health Association of South Africa, Cape Town, Mar. 24-26, 2003.
 6. Scientific Organising Committee, 17th International Symposium On Epidemiology in Occupational Health, International Commission on Occupational Health (ICOH), Melbourne, Australia, 13-15 Oct., 2004.
 7. Scientific Review Committee: 3rd Conference of the Public Health Association of South Africa, Midrand, 16-17 May, 2006.
 8. Scientific Review Committee (Chair). 4th Conference of the Public Health Association of South Africa, Cape Town, 2-4 June, 2008.
 9. Scientific Review Committee. International Commission on Occupational Health Congress (ICOH) 2009. Cape Town, 22-26 Mar., 2009.
 10. Scientific Review Committee: 5th Conference of the Public Health Association of South Africa, Durban, 1-2 Dec. 2009.
 11. Scientific Review Committee: 6th Conference of the Public Health Association of South Africa, East London, 29 Nov -1 Dec. 2010.
 12. Scientific Review Committee: 7th Conference of the Public Health Association of South Africa, Gauteng, 29 Nov -1 Dec. 2011.
 13. Scientific Review Committee. International Mesothelioma Interest Group Conference - iMig2014, Cape Town, 22-24 Nov. 2014.
 14. Scientific Review Committee. International Mesothelioma Interest Group Conference - iMig2014, Birmingham, 1-4 May 2016.
 15. Scientific Review Committee: 28th EPICOH Congress on Epidemiology in Occupational Health, International Commission on Occupational Health (ICOH), Edinburgh, UK, 28-31 Aug 2017.
 16. Scientific Review Committee: 29th EPICOH Congress on Epidemiology in Occupational Health, International Commission on Occupational Health (ICOH), Wellington, NZ, 28 May- 1 Aug 2019.
 17. Scientific Review Committee. ICOH Conference on the History of Occupational and Environmental Health, Durban, South Africa, POSTPONED.

EDITORIAL AND REVIEWING

Editorships

American Journal of Industrial Medicine: International Contributing Editor, 1991-2009; Deputy Editor, 2009- May 2016; Co-Editor in Chief, June 2016-May 2019.

Reviewer: International

1. Lancet
2. Lancet Respiratory Disease
3. Thorax
4. Occupational and Environmental Medicine
5. International Journal of Tuberculosis and Lung Disease
6. Environmental Health
7. Social Science and Medicine
8. Pediatrics
9. PLoS ONE

10. Journal of Epidemiology and Community Health
11. BMC Public Health
12. Ethnicity and Health
13. Allergy
14. Science of the Total Environment (STOTEN)
15. BMC Environmental Health
16. Annals of Occupational Hygiene
17. Journal of Urban Health
18. Journal of Environmental Health
19. Occupational Medicine (London)
20. International Journal of Environmental Health
21. Occupational Medicine and Toxicology
22. New Solutions
23. Annals of Global Health
24. Annali (Dell'istituto de Superiore di Sanita)

Reviewer: South Africa

25. South African Medical Journal
26. State of the Nation (South African Human Sciences Research Council occasional publication).
27. South African Journal of AIDS Research
28. Occupational Health Southern Africa
29. Clinical Allergy and Current Immunology

Other reviewing

1. National Research Foundation (Applications for ratings; research proposals)
2. South African Mine Health and Safety Council (Research reports)
3. South African Medical Research Council (Research proposals)

CONTRIBUTION TO INSTITUTIONAL FUNCTIONS

University Committees

1. Vice-Chancellor's Nominee, University Health and Safety Committee, 1999.
2. Postgraduate Programmes Accreditation Committee, Health Sciences Faculty, 1999-2002.
3. Dissertations Committee, Faculty of Health Sciences, 2001-2002
4. Executive (Dean's Advisory) Committee, Faculty of Health Sciences, July 2002- June 2007
5. Strategic Management Team, Faculty of Health Sciences, July 2002-Dec 2005
6. University Senate, July 2002- date. (Nominations Subcommittee, 2005- 2007)
7. Chairperson, Oliver Tambo Fellowship Programme Advisory Board, July 2002-2007.
8. Board of Graduate Studies, Faculty of Health Sciences, 2007- 2008
9. Coursework Masters Committee, Faculty of Health Sciences, 2007-2013
10. Chairperson, Faculty Timetabling and Venues Committee, 2009-2013.
11. University Timetabling Committee, 2012-2103.

Professional organisations/ discipline building activity

1. Director of WorkHealth, now Occupational Medicine Unit, founded in 1989 to promote the interdisciplinary practice of occupational health at UCT and the academic hospital complex linked to Groote Schuur Hospital, 1995- date..
2. Member of Steering Committee to develop Occupational Medicine as a free standing specialty,

College of Public Health Medicine of South Africa.

3. Member, South African Fogarty Liaison Committee (1995-2000), and Scientific Review Committee (2001-). Advises on allocation of Fogarty International grant to training activities in South African by University of Michigan faculty, and identification of suitable candidates for training in environmental and occupational health.
4. Scientific Review Board, South African Society for Epidemiologic Modelling and Analysis, 2004-2005.
5. Elected member, Council of the College of Public Health Medicine of the Colleges of Medicine of South Africa, 2005-2011.
6. Convenor, College of Public Health Medicine (Occupational Medicine) examination, Aug.- Oct. 2007.
7. Elected member, Executive of the Public Health Association of South Africa, 2008-2011.

SERVICES TO GOVERNMENT, THE BROADER COMMUNITY AND THE PUBLIC

International

1. Consultant, WHO. Global Burden of Disease and Injury from Occupational Factors, Geneva, June 28-29, 2001.
2. Contributor: WHO/ILO Guidelines for workplace TB control activities. Geneva: WHO 2003.
3. Presenter, WHO Tropical Diseases Research (TDR) workshop on Teaching Epidemiology and Biostatistics in Africa, Johannesburg, Aug. 28-29, 2003. (*Investments institutions need to make to develop capacity at Masters and Doctoral level*)
4. Invited. Open Society Institute consultative workshop on *Strengthening role of Schools of Public Health in AIDS advocacy in Africa*. Yerevan, Armenia, 17-20 Sept. 2005.

Government

National:

1. Member, Advisory Council on Occupational Health and Safety (advises Minister of Labour), 1995-2000.
2. Member, Committee on Occupational Health, (report to Minister of Health), 1995-1996.
3. Member, Provincial Medical Advisory Panel, under Compensation for Occupational Injuries and Diseases Act, 2003-8.
4. Consultant, WHO. Draft Policy on Occupational Health for Health Workers in South Africa in respect of TB and HIV. May-Aug. 2016.

Provincial Department of Health:

1. Member, Strategic Management Team on Occupational Health, 1995.
2. Senior Specialist, Division of District Health Systems and Health Programmes, 1998 – 2009.
3. Medical Subspecialist, Directorate: Health Impact Assessment, Department of Health, 2010-2016.
4. Chairperson, Provincial Health Research Committee, 2011-2015. (Vice-chair 2008-2010).

Local authority Department of Health:

1. Cape Town Metropolitan Air Pollution Co-ordinating Committee, 1993-1997.
2. City of Cape Town Air Quality Committee, 2009

Private/NGO sector

Consultations:

Frequently consulted on occupational and environmental health matters by occupational practitioners (nursing and medical), general practitioners, specialists, employers, union officials and

NGOs. Recent examples: Robertson and Caine (2013), PPC Riebeeck West (2013).

Environmental Impact Assessment:

1. ESCOM – siting of proposed new distribution substation, Koeberg (1997).
2. Indian Ocean Fertiliser, Richard's Bay – extension of current plant (1998).

TEACHING

Undergraduate

1. MD programme, Mount Sinai University, Epidemiology, 1989-2000
2. Undergraduate Health Sciences, City University of New York, Epidemiology, 1989-2000

International Visiting Lecturer/External Examiner

1. Mailman School of Public Health, Columbia University, New York. Co-taught summer MPH course on Social Epidemiology, 2005-2007; Co-supervised and examined MPH dissertations: J. Ross; H. Park, 2008.
2. Massey University, Wellington, New Zealand: PhD examiner.
3. Faculty of Science, University of Mauritius. External examiner, MPH, 2012-2014.

South African (External Examiner)

1. BTech (Occupational Health Nursing) (Peninsula Technikon, Cape Town)
2. Dip Occupational Health (U. Witwatersrand, U. Kwazulu-Natal, Stellenbosch U.)
3. MTech (U. Johannesburg)
4. MSc Epidemiology (U. Wits, Stellenbosch)
5. MSc (U. Free State; U. Western Cape; U Pretoria; UKwazulu-Natal, U. Stellenbosch)
6. MMed (U. Witwatersrand; U. Pretoria; U Kwazulu-Natal; College of Medicine of South Africa).
7. MPH (U. Western Cape; U. Witwatersrand)
8. PhD (U. Free State; Rhodes U.; U Witwatersrand)
9. MD (U. Wits)

TEACHING, INTERNATIONAL

1. MPH, Columbia University, New York: Social Epidemiology (summer course), 2005-2007
2. Blantyre, Malawi. International Epidemiology Association: Workshop on Epidemiologic Methods. April 2011.
3. Have hosted and supervised attachments by students and trainees (undergraduate and postgraduate) from Spain, US, UK and Bahrain.

TEACHING, UCT

Undergraduate

Economics II (1975-6)

MBChB, 1st, 2nd, 4th, 6th years (1990-2015).

Postgraduate (UCT)

1. Diploma in Occupational Health (Co-convenor, 1994-2000)
2. MPhil (Epidemiology) (Convenor 1995-1998).
3. MMed (Public Health Medicine), 1993-date
4. MPhil (Environmental Management), 1999-2002
5. MMed Occupational Medicine), 2006-date
6. MMed (All clinical departments), 2006–date.
7. MPH (Convenor, 1999- 2015)Recent postgraduates courses designed and convened:
 - a. Research Methods, 2000-2005
 - b. Quantitative Research Methods, 2006-2015
 - c. Communicable and Noncommunicable Disease Epidemiology 2000-2005
 - d. Noncommunicable Disease Epidemiology, 2006-2013

Supervision or co-supervision (* = current)

Postdoctoral

1. Konecny P. Immunological interaction of silica and Mycobacterium Tuberculosis, UCT, 2016-2018.

PhD

1. Dick J. Compliance with anti-tuberculous therapy. UCT, 1995.
2. Oosthuizen J. Environmental contamination by mercury in Kwazulu-Natal. UCT, 2000.
3. Khumalo N. Epidemiology of hair disorders among Africans. UCT, 2007.
4. Mohammed A. Effectiveness of INH chemoprophylaxis of tuberculosis in tuberculin negative stage III AIDS patients: a randomised controlled trial. UCT, 2008.
5. Petros, SG. Older persons as invisible caregivers to children and grandchildren infected and affected by HIV/AIDS: an assessment of their roles, challenges and support needs in six South African provinces. UCT, 2010.
6. Mahomed H. Epidemiology of tuberculosis among adolescents in the context of tuberculosis vaccine trials. UCT, 2013.
7. Adams, S. Evaluation of immunodiagnostic tests for tuberculosis infection and determinants of TB infection in a population of health care workers in the Western Cape. UCT, 2015
8. Cois A. Understanding hypertension dynamics in the South African population: a latent variables approach to analyse and compare data from multiple surveys. UCT, 2017.
9. *Zahinos I. Artisanal Gold Mining and its relationship to miners' health: a study in three districts of Cabo Delgado Province (Mozambique). UCT 2017-
10. *Van der Westhuizen HM. Translating policy into practice: reducing nosocomial tuberculosis transmission in South Africa. Oxford University 2018-

Masters

1. Truluck TF. Hospital admission patterns of childhood respiratory illness in Cape Town and their association with air pollution and meteorological factors. MA, UCT, 1993.
2. Tolosana S. Disposal of chemical, radio-active and incinerated waste in Western Cape hospitals and clinics, MSc(Med), UCT, 1996.
3. Jeebhay M. Surveillance of respiratory disease in grain workers. MPhil (Epidemiol), UCT, 1998.
4. Badri M. Prognosis of tuberculosis among HIV infected patients. MSc (Med), UCT 1999.
5. Boshof S. Risk factors for musculoskeletal problems among supermarket cashiers. MSc, UCT, 2000.
6. Poyser M. Social deprivation and asthma prevalence, ICU admissions and mortality in Cape Town. MSc, UCT, 1999.
7. Sephton EA. Hypertension in Cape Town clothing industry clinics. Does treatment match risk?

- MPhil (Epidemiol), UCT, 2001.
8. Pather S. Prevalence and reliability of asthma symptoms among preschool children in Cape Town. MPhil (Epidemiol), UCT, 2002.
 9. Omwoyo T. The role of smoking in cancer of the cervix among women in the Western Cape. MPH, UCT, 2004.
 10. Kamupira M. MPH, UCT, 2004. Recognition of malaria, treatment seeking behaviour and perception of the causes and effects of malaria among women attending antenatal clinic in Mudzi District in Zimbabwe.
 11. Minnies D, MPH, UCT, 2005. A quantitative evaluation of the quality of informed consent in a field study.
 12. Peterson Z. MSc (Med), UCT, 2005. Smoking by pregnant low income coloured women.
 13. Bresick G. MPH, UCT, 2005. Health sector reform and primary care practice: reducing costs and improving outcomes.
 14. Chalmers D, MPH, UCT, 2005. Is there a rural/urban gradient for children with atopic dermatitis in South Africa?
 15. Doolan K, MPH, UCT 2006 (co-supervisor). A quantitative analysis of socioeconomic position and the occurrence of violence in South Africa.
 16. Cook, C. MPH, UCT, 2007. Screening for cataract and chronic glaucoma.
 17. Mahlati U, MMed (Public Health Med), UCT 2008. Analysis of Phase III of the Cape Town arm of the International Study of Asthma and Allergies in Childhood.
 18. Maiphetho L, MMed (Occ Med), UCT, 2008. An analysis of percutaneous exposures of health care workers at Groote Schuur Hospital: 2001-2005.
 19. Mkwandawire T, MPH, UCT, 2009. Alcohol as a risk factor for tuberculosis: analysis of the 2003 Demographic and Health Survey.
 20. Workman, L, MPH, UCT, 2009. Are young children who have been treated for helminth infection better protected against tuberculosis disease?
 21. Knight D, MMed (Occ Medicine), UCT 2009. Variation in silicosis prevalence in South African gold miners- an industry-wide study.
 22. Roomaney R. MPH, UCT, 2010. Reducing the use of pesticides in Cape Town's peri-urban areas: An analysis of factors influencing rat trap adoption.
 23. Govender, I. MMed (Public Health Med), UCT 2011. An audit of chronic disease management at Community Health Centres in the Metro District of Cape Town.
 24. Dearham A. MMed (Public Health Med), UCT 2011. International Study of Asthma and Allergies in Childhood (ISAAC) Phase Three: An analysis of the determinants of allergic rhinitis and atopic eczema symptoms in Cape Town, South Africa.
 25. Abrahams Z. MPH, UCT, 2011. Healthkick: Evaluating the impact of a school-based intervention on the dietary adequacy of learners from low income settings in the Western Cape Province, South Africa.
 26. Durao S. MPH, UCT, 2011 (with distinction). The anthropometric nutritional status of children 0-8 years old in the Western Cape Province of South Africa: A systematic review.
 27. Mothemela M. MMed (Occ Med), UCT, 2012. Analysis of geography and characteristics of mesothelioma cases identified by two asbestos compensation trusts in South Africa.
 28. Cois A, MPH, UCT 2012 (with distinction). Analysing the socioeconomic determinants of hypertension in South Africa: a structural equation modelling approach.
 29. Racow K, MPH, UCT 2013. The impact of HIV on gender differences among tuberculosis patients in a high HIV-burdened population.
 30. Weber, C, MPH, UCT 2013. Do children with cystic fibrosis in regional centres have poorer outcomes than those treated at a Cystic Fibrosis Centre?
 31. Akugizibwe P. MPH, UCT 2014 (with distinction). Silica, silicosis and tuberculosis – a systematic

review.

32. Yenuhun, M. MPH 2014 (Co-supervisor). Association between household wealth status and HIV prevalence in Ethiopia.
33. Schmidt BM, MPH, UCT 2015 (with distinction). Systematic review interventions for health care workers to reduce transmission of tuberculosis in health care settings.
34. Cloete B, MMed, UCT, 2016. Analysis of the compliance of health care facilities in the Western Cape province, South Africa with the national core standards for occupational health and safety and infection prevention and control.
35. Van de Water N, MMed, UCT, 2018 (with distinction). Workers' compensation claims for occupational tuberculosis TB in South African health care workers: a survey of process and outcomes.

Continuing Professional Development

Regular presenter on seminars/courses organised for medical officers in public sector, and private practitioners and occupational health nurses and other professionals.

CLINICAL SERVICES (Occupational Medicine)

1. Specialist clinician and Co-director/Director, Occupational Medicine Clinic, Groote Schuur Hospital (public sector), Cape Town, 1990-2016.
2. Private practice, UCT Lung Institute, Cape Town, 2001-2016.
3. Frequently consulted telephonically by health practitioners and public on occupational and environmental medical matters.
4. Specialist occupational medicine panel member, Asbestos Relief Trust and Kgalakgadi Relief Trust (asbestos claims), 2003-2016; Q(h)ubeka Relief Trust (silicosis, TB claims), 2016-

MEDICOLEGAL AND COMPENSATION

1. Expert witness ad hoc at Workers' Compensation hearings,
2. Consultant ad hoc to Legal Resources Centre (public interest law firm) on occupational health matters.
3. Wrote expert medical report for plaintiff attorneys in asbestos civil case which led to setting up of Asbestos 2005 and (later) Kgalakgadi Relief Trust.
4. Wrote expert medical report for defence attorneys for Department of Health in civil case brought by Chamber of Mines (2008).
5. Expert medical reports for plaintiff attorneys in two settled silicosis civil lawsuits (2009-2015; 2012-2015), and a settled class action suit (2013-2019).

PROFESSIONAL SOCIETIES (current)

- 1 Collegium Ramazzini, 2009-date.

“B”

JILL MURRAY - CURRICULUM VITAE

1. PERSONAL DETAILS

BA (Wits), MBBCH (Wits), DOH (Wits), PGCE (London), FFPATH (SA)

Currently active in teaching, research and supervision in the School of Public Health, University of the Witwatersrand and consult in an advisory capacity to the Dept of Pathology, National Institute for Occupational Health, National Health Laboratory Service.

Honorary Associate Professor
School of Public Health
University of the Witwatersrand
Johannesburg
South Africa

Previously:
Principal Pathologist
Head: Pathology Directorate
National Institute for Occupational Health
PO Box 4788
Johannesburg 2000
South Africa

Cell: 082 6890039
Tel: +011 788 9486 (h)
e-mail: jill.murraysa@outlook.com

2. ACADEMIC QUALIFICATIONS

2.1 Secondary education

Roedean School
Johannesburg, South Africa
Matriculated 1964

2.2 University / tertiary education

1. University of the Witwatersrand: 1966 - 1968
Johannesburg, South Africa
Bachelor of Arts
2. London University: 1970
London, UK
Post Graduate Certificate in Education
3. University of the Witwatersrand: 1971 - 1976
Johannesburg, South Africa
MB BCH
4. The College of Medicine of South Africa: 1984
Johannesburg, South Africa
FFPATH (Morbid Anatomy)

5. University of the Witwatersrand: 1989
Johannesburg, South Africa
Diploma in Occupational Health

3. PROFESSIONAL QUALIFICATIONS

Registered with the Health Professionals Council as a General Practitioner since 1976, and as a Specialist Anatomical Pathologist since 1984 (HPCSA no. MP0200999).

4. ACADEMIC DISTINCTIONS/ FELLOWSHIPS/ AWARDS

1. **Significant Achievement Award** – awarded to the Wits Health Consortium Path Research Syndicate, headed by Dr Murray and Dr Jim Phillips, and based at the Pathology Directorate of the NIOH, November 2001.
2. **Outstanding Project Management Award** – awarded to the Wits Health Consortium Path Research Syndicate, headed by Dr Murray and Dr Jim Phillips, and based at the Pathology Directorate of the NIOH, November 2001.
3. **Merit Awards** – several from the Department of Health
4. **Silver Award** - received in recognition of excellence of a poster exhibit presented at the 9th International Conference on Occupational Respiratory Diseases in Kyoto, Japan. Title: Risk of pulmonary tuberculosis in relation to silicosis and silica dust exposure in South African gold miners, 1997

5. ACADEMIC AND PROFESSIONAL EXPERIENCE

6.1 Academic positions

- 2005 - date **University of the Witwatersrand**
Johannesburg, South Africa
Associate Professor, School of Public Health
- 2013 to date **National Institute for Occupational Health**
Johannesburg, South Africa.
Post-retirement consultant in the Pathology Directorate
- 2003 to date **National Institute for Occupational Health**
Johannesburg, South Africa
Head: Pathology Directorate; and Principal Pathologist
- 1995 – 2003 **National Centre for Occupational Health**
Johannesburg, South Africa
Head: Pathology Directorate; and Senior Pathologist
- 1988 - 1995 **National Centre for Occupational Health**
Johannesburg, South Africa
Senior Pathologist

6.2 Teaching

Currently lecture for the Diploma in Occupational Health (at Wits and other South African Universities). Contribute to PhD supervision both of my own students as well as to the CARTA programme and the SPH integrated PhD programme: selection of applicants, protocol assessment, individual and group input to development of study question, literature review, objectives and methodology.

6. SUPERVISION OF HIGHER DEGREES

7.1 Completed higher degrees

Dr Benn Sartorius

MSc(Med) [by course work] in the Field of Epidemiology and Biostatistics: Faculty of Health Sciences, University of the Witwatersrand, Prevalence, trends and risk factors of atherosclerosis in autopsied South African miners from 1975 to 2001
Submitted 2003

Dr Mireille Cheyip

MSc(Med) [by course work] in the Field of Epidemiology and Biostatistics: Faculty of Health Sciences, University of the Witwatersrand, The prevalence of and smoking trends in South African platinum miners
Submitted 2004

Shobna Chauhan

MSc(Med) [by course work] in the Field of Epidemiology and Biostatistics: Faculty of Health Sciences, University of the Witwatersrand, Attribution of lung cancer to asbestos exposure in miners in South Africa
Submitted 2005

Note: Ms Chauhan was awarded the W Harding le Riche Medal in Epidemiology in 2005

Dr Vanessa Govender

MPH: Faculty of Health Sciences, University of the Witwatersrand, Health care workers' knowledge, attitudes and practices regarding prevention of smoking in gold mine workers
Submitted 2007

Dr Robert Dowdeswell

MSc(Med) [by course work] in the Field of Epidemiology and Biostatistics: Faculty of Health Sciences, University of the Witwatersrand, The impact of HIV/AIDS on mortality at a South African platinum mine
Submitted 2007

Kerry Makinson

MSc (Med): Faculty of Health Sciences, University of the Witwatersrand, Validation of biomarkers for improved assessment of exposure and early effect from exposure to crystalline silica

Gill Nelson

PhD: Faculty of Health Sciences, University of the Witwatersrand, Occupational respiratory diseases: rates, trends and risks in miners coming to autopsy from 1975 to 2004

Peter Nyasulu

PhD (completed). Surveillance of Antimicrobial Resistance among Nosocomial Pathogens isolated in Tertiary Public Hospitals in South Africa

Zodwa Ndlovu

PhD (completed). Evaluation of an administrative (autopsy) data base for occupational lung disease surveillance

Naseema Vorajee

MMed pathology (completed) Immunohistochemical screening for Epidermal growth factor receptor and Anaplastic lymphoma kinase mutations in lung adenocarcinoma in South Africa

7. SERVICE TO THE UNIVERSITY/ PROFESSION/ DISCIPLINE/ COMMUNITY

My professional duties while employed in at the NIOH included:

- **ensuring the high standard** of the Directorate in terms of its core function as a national reference centre for lung pathology, including services for asbestos fibre counting and in electron microscopy. The Pathology Directorate also serves as a national reference centre for consultation purposes for all occupational lung diseases.
- **providing a statutory service** on behalf of the Medical Bureau of Occupational Diseases in performing autopsy examinations of the cardio-respiratory organs for the determination of compensable lung diseases (Act 78 of 1973).
- **providing a diagnostic service** in pulmonary pathology
- **generating data for disease surveillance and research purposes** in occupational disease. The data from the directorate are widely utilised for disease surveillance and research purposes in collaboration with mines, the Epidemiology and Occupational Medicine Section of the NIOH, and academic institutions in South Africa and internationally
- initiating, developing and managing **research projects**, including projects with national and international collaborators
- **disseminating results** of research projects in the form of presentations, reports and/or publications in peer-reviewed medical journals
- **providing leadership** in anatomical pathology (including training registrars and lecturing postgraduate students). I also teach and train a variety of health professionals outside the University in lung disease, pathology disease surveillance and legislation, including health professionals from the Dept of Minerals and Energy, Dept of Health, Provincial Departments of Health, mine medical services, occupational health nurses and medical technologists.
- assisting and advising researchers at the NIOH in both protocol development and the research process, as a member of the **NIOH research committee**
- **mentoring young scientists** at the NIOH: particularly gratifying were the awards of prizes to Zodwa Ndlovu and Shobna Chauhan for best oral presentation and best poster presentation, respectively, at the 2004 NIOH Annual Research Day

- **facilitating ongoing education to health professionals**, such as the facilitation of spirometry workshops in 2005 and 2006 in collaboration with the National Institute of Occupational Safety and Health (NIOSH) USA
- actively working on **improving occupational health in the SADC region** as a Member of Work and Health in Southern Africa (WAHSA) Steering Committee of the Swedish International development Agency (SIDA)-SADC Programme (Work and Health in Southern Africa project)
- **development of training materials**, for example, a curriculum for a 5 day seminar to *Improve capacity to measure and control dust* (with learning materials, exercises, field work etc.). Seminars have been held in Zambia, Mozambique and Tanzania, with more to follow (Work and Health in Southern Africa project)
- **revision and distribution of existing publications** relating to occupational health. For example, SORSA Alert – Crystalline Silica Health Hazards and Precautions (updated to contain new information on silica, silicosis and tuberculosis for practitioners in the SADC Region) (Work and Health in Southern Africa project)
- **development of new guidelines**. For example, Guideline on Isoniazid Preventive Therapy (IPT) for patients with silicosis in Southern Africa (Work and Health in Southern Africa project)
- **reviewing research** as a member of Editorial Board of the Journal of Occupational Health Southern Africa (elected October 2007)
- providing expertise as **member of Scientific Committee** of the 9th International Conference on Particles: Risks and Opportunities (2008)

RESEARCH

Around 125 publications in international peer reviewed scientific journals including leading journals such as the Lancet. Several book chapters. Invited reviewer for international medical journals. Invitations to present at international meetings in many countries including France, London, USA, UK.

Research interests include silica, coal, TB/HIV, asbestos, and occupational disease surveillance. Active collaboration with a wide range of national and international institutions.

9.1 National and international research collaborators (past and current)

9.1.1 *National*

Universities:

- University of Cape Town
- University of Natal
- University of Pretoria
- University of the Witwatersrand: Schools of Pathology, Public Health and Clinical Medicine

Other:

- Safety in Mines Research Advisory Committee
- Department of Minerals and Energy
- National Union of Mineworkers
- Chamber of Mines

- Medical Research Council, South Africa
- National Institute for Communicable Diseases
- Mining industry

9.1.2 International

Universities:

- Dokkyo University School of Medicine, Japan
- City University of New York, USA
- London School of Hygiene and Tropical Medicine, London, UK
- University of Edinburgh, Scotland, UK
- University of Michigan, USA
- West Virginia University Medical Center, Morgantown, USA
- F Edward Hébert School of Medicine, Bethesda, Maryland
- University of Cardiff, Wales, UK
- University of Calgary, Canada
- Jefferson Medical College, Philadelphia, Pennsylvania;

Other institutions:

- National Institute for Occupational Safety and Health (NIOSH), USA
- Centre of Expertise in Life Sciences, The Netherlands
- International Environmental Research Foundation (IERF), USA
- Southern African Development Community (SADC)
- Swedish National Institute for Working Life (NIWL), Sweden
- Swedish National Institute of Public Health (NIPH), Sweden
- Swedish International Development Cooperation Agency (SIDA), Sweden

9.4 Research grants

Recipient of numerous national and international research grants.

CURRICULUM VITAE - N. NAIDOO
(updated: June 2014)

“C”

PERSONAL DATA

SURNAME:	NAIDOO
FIRST NAME:	NITHISEELAN RAJEN
IDENTITY NUMBER:	631025 5157 080
DATE OF BIRTH:	25 October 1963
SEX:	Male
NATIONALITY:	South African
HOME ADDRESS:	11 Elf Place Clare Estate Durban 4091
POSTAL ADDRESS:	As above
TELEPHONE:	031-2693032 (H) 031-2604385 (W)
ELECTRONIC MAIL:	naidoon@ukzn.ac.za
WORK ADDRESS:	Discipline of Occupational and Environmental Health School of Nursing and Public Health University of KwaZulu-Natal Room 321 George Campbell Building Durban 4041
PRESENT POSITION:	Head of Department Chief Specialist Associate Professor: Occupational Medicine

EDUCATIONAL QUALIFICATIONS

SCHOOL: Burnwood Senior Secondary
(Durban, 1976-1981)

QUALIFICATION: Matriculated with Exemption

TERTIARY EDUCATION: University of Natal
Medical School (1982-1987)

QUALIFICATION: Bachelor of Surgery (MB.ChB)

POST GRADUATE: Diploma in Occupational Health, University of Cape Town
(1994)
Masters in Public Health (Occupational Medicine),
University of Michigan (1998)
Doctorate in Occupational Health, University of Michigan
(USA) (2002)

EMPLOYMENT HISTORY

CURRENT EMPLOYER: University of KwaZulu-Natal/KwaZulu-Natal Department
of Health

POST: Associate Professor: Occupational Health
Co-ordinator - Occupational Health Programme
(March 1994 – September 2002)
Deputy Director: Centre for Occupational & Environmental
Health
(September 2002 – November 2007)
Acting Head: Department of Occupational &
Environmental Health
(November 2007 – June 2008)
Head of Department (July 2008 – current)

ACTIVITIES:

Managing a specialist clinic in occupational medicine; lecturing to undergraduate and postgraduate students; research in occupational health: includes drawing up of protocols, funding proposals and managing of funds; consultancy services to industry on occupational health and safety; regional occupational health policy issues: drafting occupational health policy for the regional ministry of health. Clinical functions include the assessment of workers for work related diseases, including the submission of cases for compensation either under the COID or ODMW Acts.

PREVIOUS EXPERIENCE

EMPLOYER: Transvaal Provincial Administration (Hospital Services)
 POST: Post-graduate Internship
 DURATION: January 1988 - September 1988
 ACTIVITIES: Clinical functions in paediatrics and surgery

EMPLOYER: Natal Provincial Administration (Hospital Services)
 POST: Internship
 DURATION: September 1988 -December 1988
 ACTIVITIES: Clinical functions in internal medicine.

EMPLOYER: Department of Paediatrics, University of Natal
 Medical School
 POST: Registrar
 DURATION: January 1989 - July 1989
 ACTIVITIES: Clinical functions

EMPLOYER: Department of Anaesthetics, University of Natal
 Medical School
 POST: Registrar
 DURATION: July 1989 - July 1991
 ACTIVITIES: Clinical functions

EMPLOYER: Department of Anaesthetics
 Royal Berkshire Hospital
 Reading
 UNITED KINGDOM
 POST: Registrar
 DURATION: July 1991 - December 1991
 ACTIVITIES: Clinical functions

EMPLOYER: Industrial Health Unit, Department of Sociology
 University Of Natal
 POST: Clinical Director: Occupational Health Clinic (WORKERS'
 HEALTH CENTRE) –
 DURATION: January 1992 - February 1994

ACTIVITIES:

Clinical director of the occupational medicine clinic, which serviced the trade union movement in KwaZulu-Natal. This included staff allocation, drawing up of budgets, preparation of reports to international funders. The clinical problems included the investigation, diagnosis and management of work related diseases and injuries, application for compensation under COIDA Act and OMDW Act.

MEMBERSHIP TO PROFESSIONAL ORGANISATIONS

MEDICAL - GENERAL:	Health Professionals Council of South Africa (HPCSA) General Medical Council (GMC UK)
OCCUPATIONAL HEALTH:	South African Society of Occupational Medicine (SASOM)
ENVIRONMENTAL HEALTH:	International Society of Environmental Epidemiology
RESPIRATORY HEALTH:	South African Thoracic Society

PUBLICATIONS

1. **Naidoo R.** Role of Tertiary Occupational Medicine Clinics: the King Edward Experience. *OccHSA* 1995; 1.3: 22-23
2. **Naidoo R.** Case Study: Upper Extremity Musculoskeletal Disorder of Occupational Origin. *OccHSA*, 1995;1.2:24-25.
3. Uusitalo T, **Naidoo R.** Accessing Occupational Health and Safety Information through the Internet. *Afr Newslett Occup Health and Safety*, 1995; 5:6-8
4. Nriagu J, Jinabhai C, **Naidoo R**, Coutssoudis A. Atmospheric lead pollution in KwaZulu/Natal, South Africa. *Sci.Total Environment* 1996; 191:69-76
5. Nriagu J, **Naidoo R.** Lead poisoning of children in KwaZulu-Natal. *Sci.Total Environment*. 1997; 197:1-11.
6. Colvin M, **Naidoo R.** Hazards of the Chemical Industry in South Africa - *Afr Newslett Occup Health and Safety*. July 1997.
7. Nriagu J, Robins T, Gary L, Liggans G, Davila R, Supuwood K, Harvey C, Jinabhai CC, **Naidoo R.** Prevalence of asthma and respiratory symptoms in south-central Durban, South Africa. *European J Epidemiol*. 1999 Sep;15(8):747-55.
8. Robins TG, Jeebhay M, **Naidoo R.** The University of Michigan/Fogarty International Center programme to support training and research in environmental and occupational health in Southern Africa. *Occupational Health Southern Africa*, 8(4), 26-27, 2002.
9. Jinabhai CC, **Naidoo R**, Oosthuizen J. Integration of Environmental Health Services into a comprehensive primary health care programme in the Durban Metropolitan Area, South Africa. *SA Journal of Epidemiology*, 2003; 18(3):57-62
10. **Naidoo R**, Ryan A, Naidoo S. Specialist occupational medicine services in Sub-Saharan Africa. *African Newsletter on Occupational Health and Safety*. Volume 14, Number 1, April 2004
11. **Naidoo R**, Robins TG, Solomon A, White N, Franzblau A. Radiographic outcomes among South African Coal Miners. *Int Arch Occup Env Health*. 2004; 77(7): 471-481.
12. **Naidoo R**, Robins TG, Murray J, Green F, Vallyathan V. Validation of the coal miner autopsy data in the Pathaut database. *American Journal of Industrial Medicine*. 2005;47:83-90
13. **Naidoo R**, Robins TG, Seixas N, Laloo UG, Becklake M. Differential respirable dust related lung function effects between current and former South African coal miners. *Int Arch Occup Env Health*. 2005; 78: 293-302.
14. **Naidoo R**, Robins TG, Murray J. Respiratory outcomes among South African Coal Miners at autopsy. *American Journal of Industrial Medicine*. 2005;48:217-224
15. Gounden Y, **Naidoo R.** Occupational Hygiene in Southern Africa. *African Newsletter on Occupational Health and Safety*. Volume 15, Number 3. December 2005
16. **Naidoo R**, Seixas N, Robins TG. Respirable dust exposure in South African Coal Mines. *J Occ Env Hygiene*. 2006;3:293-300.
17. **Naidoo R**, Robins TG, Seixas N, Laloo UG, Becklake M. Respirable coal dust exposure and respiratory symptoms in South African coal miners: A comparison of current and ex-miners. *Journal of Occupational and Environmental Medicine*. 2006;48(6):581-590.
18. **Naidoo R**, Jeebhay MF, Robins TG, Myers J, Noguiera C, Zeleznik S. Addressing the challenges of underdevelopment in environmental and occupational health in Southern Africa: The University of Michigan Program. *Int J Occ Env Health*. 2006;12:392-399
19. Jack C, **Naidoo R.** Asthma in KwaZulu- Natal, *SA Resp Journal*, March 2006, Vol 12:19-22.
20. **Naidoo R**, Rees D. Coal workers' pneumoconiosis and silicosis-the South African experience. *Chinese Journal of Industrial Hygiene and Occupational Diseases (Zhonghua Lao Dong Wei Sheng Zhi Ye Bing Za Zhi)*. 2007; 25(3):187-9. [Chinese].

21. **Naidoo R**, Robins TG, Becklake MR, Seixas NS, Thompson ML. Evaluation of cross shift peak flow changes and respirable dust exposure among coal miners in three South African mines. *American Journal of Industrial Medicine*. 2007; 50:992-998
22. **Naidoo R**. Pneumoconiosis on South Africa coal mines – myth or reality? *Occupational Health Southern Africa*. 2008; 14(1):6-13
23. Batterman SA, Chernyak SM, Gounden Y, Matooane M, **Naidoo RN**. Organochlorine pesticides in ambient air in Durban, South Africa. *Science of the Total Environment*. 2008; 397:119-130
24. Naidoo S, London L, Burdorf A, **Naidoo RN**, Kromhout H. Agricultural activities, pesticide use and occupational hazards among women working in small scale farming in Northern KwaZulu-Natal, South Africa. *Int J Occup Environ Health* 2008;14:218–224
25. **Naidoo RN**, Haq SA. Occupational use syndromes. *Best Practice & Research Clinical Rheumatology* 2008; 22(4): 677–691
26. Kistnasamy EJ, Robins TG, **Naidoo RN**, Batterman S, Mentz G, Jack C, Irusen E. The relationship between asthma and ambient air pollutants among primary school students in Durban, South Africa. *I J Environment and Health* 2008 2(3/4): 365-385
27. Naidoo S, Kromhout H, London L, **Naidoo RN**, Burdorf A. Musculoskeletal pain in women working in small-scale agriculture in South Africa. *American Journal of Industrial Medicine* 2009; 52(3): 202-209
28. **Naidoo RN**. The WAHSA Programme 2004-2008 (editorial). *Occupational Health Southern Africa*. 2009; 15s
29. *Hogstedt C, Elgstrand K, Ryan A, **Naidoo RN**, Rees D, Chitambo A et al. The Work and Health in Southern Africa (WAHSA) Programme – overall experiences and the way forward. *Occupational Health Southern Africa*. 2009; 15s:2-6
30. **Naidoo RN**, Kessy FM, Mlingi L, Mirembo J. Occupational health and safety in the informal section in Southern Africa – the WAHSA Project in Tanzania and Mozambique. *Occupational Health Southern Africa*. 2009; 15s:46-50
31. **Naidoo RN**, Kessy FM, Mlingi L. Respiratory health of stonecrushers from the informal sector in Tanzania. *Occupational Health Southern Africa*. 2009; 15(6):6-13
32. **Naidoo RN**. Work-related chronic obstructive pulmonary disease. *Continuing Medical Education Journal*. 2009;27(11):488-491
33. **Naidoo RN**. Work-related Asthma. *The Specialist Forum*. 2010;10(3):42-50
34. Reddy P, **Naidoo RN**, Robins TG, Mentz G, London S, Li H, Naidoo R. GSTM1, GSTP1, and NQO1 Polymorphisms and Susceptibility to Atopy and Airway Hyperresponsiveness among South African Schoolchildren. *Lung*. 2010; 188: 409-414
35. Naidoo S, London L, Rother HA, Burdorf A, **Naidoo RN**, Kromhout H. Pesticide safety training and practices in women working in small-scale agriculture in South Africa. *Occup Environ Med*. 2010;67:823-828
36. Naidoo S, London L, Burdorf A, **Naidoo RN**, Kromhout H. Spontaneous miscarriages and infant deaths among female farmers in rural South Africa. *Scand J Work Environ Health*. 2011;37(3):227-36
37. Batterman S, Su FC Jia C, **Naidoo R**, et al, Manganese and lead in children's blood and airborne particulate matter in Durban, South Africa, *Sci Total Environ*. 2011;15:409(6):1058-68
38. Govender N, Laloo UG, **Naidoo RN**. Occupational exposures and chronic obstructive pulmonary disease: a hospital based case-control study. *Thorax*. 2011;66(7):597-601
39. Naidoo S, London L, Burdorf A, **Naidoo RN**, Kromhout H. Occupational activities associated with a reported history of malaria among women working in small scale agriculture in South Africa. *Am. J. Trop. Med. Hyg*. 2011; 85(5): 805–810
40. **Naidoo RN**. Occupational exposures and Chronic Obstructive Pulmonary Disease: incontrovertible evidence for causality? *Am J Respir Crit Care Med*. 2012 Jun 15;185(12):1252-4

41. Jafta N, Batterman S, **Naidoo RN**, Gqaleni N, Robins T. Characterisation of allergens and fungal aerosols in homes of primary school children in Durban, South Africa. *Am J Ind Med.* 2012;55(12):1110-21
42. Reddy P, **Naidoo RN**, Robins TG, Mentz G, Li H, London SJ, Batterman S GSTM1 and GSTP1 gene variants and the effect of air pollutants on lung function measures in South African children *Am J Ind Med.* 2012;55(12):1078-86
43. Reddy P, **Naidoo RN**, Robins TG, Mentz G, Li H, London SJ. GSTM1, GSTP1 and NQO1 polymorphisms and susceptibility to asthma among South African children. *South Afr J Epidemiol Infect* 2012;27(4):184-188
44. **Naidoo RN**. Mining: South Africa's Legacy and Burden in the context of occupational respiratory diseases. An invited commentary on "Occupational respiratory diseases in the South African mining industry" by Gill Nelson. *Glob Health Action* 2013, 6: 20512 - <http://dx.doi.org/10.3402/gha.v6i0.20512>
45. Reddy P, **Naidoo RN**, Chuturgoon AA, Asharam K, Naidoo D, Phulukdaree A, Gounden S. Correlation between glutathione S-transferase Mu 1 (GSTM1) and glutathione S-transferase pi gene (GSTP1) polymorphisms and markers of inflammatory stress in pregnant females. *Journal of Toxicology and Environmental Health Sciences* Vol. 5(3) pp. 52-59, March 2013. DOI: 10.5897/JTEHS2013.0255
46. **Naidoo RN**, Robins TG, Batterman S, Mentz G, Jack C. Ambient pollution and respiratory outcomes among schoolchildren in Durban, South Africa. *South African Journal of Child Health.* 2013; 7(4) 127-134.
47. Reddy P, **Naidoo RN**, Chuturgoon AA, Asharam K, Phulukdaree A, Gounden S. Effect of the TNF α -308 polymorphism on birth outcomes among South African women. *J. Advances in Biomedical Studies.* 2014; 1(1), 021-026
48. Hendry G, North D, Zewotir T, **Naidoo RN**. The application of subset correspondence analysis to address the problem of missing data in a study on asthma severity in childhood. *Stat Med.* 2014. doi: 10.1002/sim.6189. [Epub ahead of print]

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1. Nagiah S, Phulukdaree A, Naidoo D, Ramcharan K, Naidoo RN, Moodley D, Chuturgoon A. The role of uncoupling protein 2 -866G/A polymorphism on oxidative stress markers associated with air pollution exposure during pregnancy in Durban, South Africa (submitted, 2013, *Free Radical Biology and Medicine*)

PUBLICATIONS IN NON-PEER REVIEWED PUBLICATIONS AND LAY PRESS

1. **Naidoo R**, Gounden Y, Molefi T. Workers' rights and legislation in occupational health and safety. *NUMSA Bulletin.* April 2003: 8: 37-39.
2. **Naidoo R**, Ryan A, Gounden Y. Compensation for worker injury. *NUMSA Bulletin.* November 2003: 9.
3. Gounden Y, **Naidoo R**, Molefi T. Occupational safety: safeguarding your life. *NUMSA Bulletin.* March 2004: 10.
4. **Naidoo R**, Ryan A. Work related asthma. *NUMSA Bulletin.* October 2004: 11.
5. **Naidoo R**, Funding sustainable occupational health development in Southern Africa – what are we aligning to? *Equinet Editorial* September 2009
6. **Naidoo RN**. Public health and the climate: addressing the challenges for Southern Africa. *Public Health Association of South Africa (PHASA) Newsletter.* November 2012

PUBLISHED CONFERENCE PROCEEDINGS AND ABSTRACTS

1. Jinabhai C.C and **Naidoo R**. Integration of environmental health services into a comprehensive primary health care programme in the Durban Metropolitan area, South Africa. Occupational health for health care workers (Conference proceedings). Third International Congress, Edinburgh 1997. ICOH/CIST
2. **RN Naidoo**, T. Robins, N. Seixas, U. Laloo, M. Becklake. Respirable dust related lung function effects between current and former south african coalminers. 17th International Symposium on Epidemiology in Occupational Health (EPICOH) Melbourne, Australia October 2004. Occup Environ Med 2004; 61: e22.
3. **RN Naidoo**, T. Robins, J. Murray. Autopsy Based Respiratory Outcomes Among South African Coalminers. 17th International Symposium on Epidemiology in Occupational Health (EPICOH) Melbourne, Australia October 2004. Occup Environ Med 2004; 61: e32.
4. Y. Gounden, M. Van Der Merwe, S. Batterman, **R. Naidoo**, A. Mohamed, K. Govender, J. Chetty. Exposure Assessment in the South Durban Health Study - Conventional Pollutants. 17th Annual Conference of the International Society for Environmental Epidemiology. Johannesburg, South Africa. September 2005. Epidemiology. 16(5): Supplement. 2005
5. Reddy, P; **Naidoo, R**; Naidoo, R; London, S, Robins, T. Glutathione-s-transferase gene polymorphisms (GSTM1 and GSTP1) as increased risk factors for asthma. 17th Annual Conference of the International Society for Environmental Epidemiology. Johannesburg, South Africa. September 2005. Epidemiology. 16(5): Supplement. 2005.
6. Jack C, **Naidoo R**, Kistnasamy J, Robins T, Laloo U. The health status of students and their family members at selected schools in South Durban compared to communities in the north. 17th Annual Conference of the International Society for Environmental Epidemiology. Johannesburg, South Africa. September 2005. Epidemiology. 16(5): Supplement. 2005
7. Jaftha N, Gqaleni N, Batterman S, **Naidoo R**, Robins T and Jia C. Indoor air quality of selected residences in South Durban compared to North Durban. 17th Annual Conference of the International Society for Environmental Epidemiology. Johannesburg, South Africa. September 2005. Epidemiology. 16(5): Supplement. 2005
8. **Naidoo, R**; Gqaleni, N; Robins, T, Batterman, S, Gounden Y, Kistnasamy J, Van der Merwe M, Jack C. Overview of the Epidemiological and Health Risk Study conducted under the Multipoint Plan. 17th Annual Conference of the International Society for Environmental Epidemiology. Johannesburg, South Africa. September 2005. Epidemiology. 16(5): Supplement. 2005.
9. **Naidoo R**; Robins T; Jeebhay M. Collaboration and Synergy in Environmental and Occupational Health Programmes in Southern Africa. 17th Annual Conference of the International Society for Environmental Epidemiology. Johannesburg, South Africa. September 2005. Epidemiology. 16(5): Supplement. 2005.
10. Robins T, **Naidoo R**; Jeebhay M. University of Michigan International Training in Research in Environmental and Occupational Health (ITREOH) capacity building program in Southern Africa.. 17th Annual Conference of the International Society for Environmental Epidemiology. Johannesburg, South Africa. September 2005. Epidemiology. 16(5): Supplement. 2005.
11. Robins, T G; Batterman, S; Mentz, GB; Kistnasamy, B; Jack, C; Irusen, E; Laloo, U; **Naidoo, R**; Kistnasamy, B; Baijnath, N; Amsterdam, H. Respiratory Health and Air Pollution in Durban: the Settlers' School Study. 17th Annual Conference of the International Society for Environmental Epidemiology. Johannesburg, South Africa. September 2005. Epidemiology. 16(5): Supplement. 2005
12. T.G. Robins, C. Jack, E. Irusen, G.B. Mentz, U. Laloo, J. Kistnasamy, S. Batterman, **R. Naidoo**. High Prevalence of Bronchial Hyperreactivity Among School Children In Durban, South Africa. ATS 2005 · San Diego International Conference – “Proceedings of the ATS Jan-Feb 2006”
13. **Naidoo R**, Rees D. Coal Workers' Pneumoconiosis and Silicosis – the South African Experience at the “Occupational Health for All and Developing System for Basic

Occupational Health Service"9th National Conference on Occupational Health organized by Chinese Association of Occupational Health, September 23-27, 2006 Kunming, Yun Nan Province.

14. Jafta N, Gqaleni N, Batterman S, **Naidoo R** and Robins T. Allergen levels in the residences and schools in primary school children in Durban. The 3rd National Public Health Conference, Johannesburg. May 2006. South Afr J Epidemiol Infect 21(3) Suppl, 2006
15. Sikhosana N, Jafta N, Gqaleni N, **Naidoo R**, Batterman SN and Robins T. Indoor concentration of particulate matter and carbon monoxide in the south and north of Durban. The 3rd National Public Health Conference, Johannesburg. May 2006. South Afr J Epidemiol Infect 21(3) Suppl, 2006
16. Gounden Y, Batterman S and **Naidoo R**. The Durban south Health study: Exposure monitoring. The 3rd National Public Health Conference, Johannesburg. May 2006. South Afr J Epidemiol Infect 21(3) Suppl, 2006
17. Reddy P, **Naidoo R**, Naidoo R, London S, and Robins T. Allelic frequencies of GSTM1, GSTP1 and NQO1 polymorphisms in a South African population. The 3rd National Public Health Conference, Johannesburg. May 2006. South Afr J Epidemiol Infect 21(3) Suppl, 2006
18. Jafta N, Batterman S, **Naidoo R**, Robins T, Gqaleni N. "Conditions associated with higher allergen levels in homes of primary school children in Durban". Presented in the SATS-ALLSA-CF Conference 2–5 March 2007, Cape Town, South Africa. Current Allergy & Clinical Immunology, 2007; 20 (1)
19. **Naidoo R**, Robins T, Batterman S, Jack C. Ambient pollution and respiratory outcomes among South African schoolchildren. 19th Conference of the International Society for Environmental Epidemiology, Mexico City. September 2007. Epidemiology Supplement. 2007; 18(5): S105
20. Batterman S, Gounden Y, **Naidoo R**, Chernyak S, Robins T. Exposures and Health risks from toxic air pollutants in industrialised and non-industrialised communities. 19th Conference of the International Society for Environmental Epidemiology, Mexico City. September 2007. Epidemiology Supplement. 2007; 18(5): S112
21. Robins T, **Naidoo R**, Batterman S, Mentz G, Gounden Y. Association of Ambient air pollutant exposures with changes in pulmonary function among South African schoolchildren. 19th Conference of the International Society for Environmental Epidemiology, Mexico City. September 2007. Epidemiology Supplement. 2007; 18(5): S190
22. Reddy P, **Naidoo R**, Robins T, Batterman S, Mentz G, London S. Glutathione-s-transferase polymorphisms (GSTM1 and GSTP1) and respiratory health in a South African population. 19th Conference of the International Society for Environmental Epidemiology, Mexico City. September 2007. Epidemiology Supplement. 2007; 18(5): S190
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24. Gounden, Y; Batterman, S; **Naidoo, R**. Spatial and Temporal Trends of Air Pollutants in Industrial and Nonindustrial Communities. 19th Conference of the International Society for Environmental Epidemiology, Mexico City. September 2007. Epidemiology Supplement. 2007; 18(5): S72
25. Kessy F, **Naidoo RN**, Mlingi L. Health risk assessment and interventions among informal stonecrushers in Dar-es-Salaam, Tanzania. 20th International Conference on Epidemiology in Occupational Health. Costa Rica, June 2008. Occ Environ Med 65(9) Special Supplement, oem.bmj.com/cgi/data/65/9/DC1/1
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27. Naidoo S, London L, Alex B, **Naidoo R**, Kromhout H. Agricultural activities, crop production and pesticide use among women working in small scale farming in two areas of northern KwaZulu-Natal, South Africa. 20th International Conference on Epidemiology in Occupational Health. Costa Rica, June 2008. *Occ Environ Med* 65(9) Special Supplement, oem.bmj.com/cgi/data/65/9/DC1/1
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29. **Naidoo R**, Robins T, Batterman S, Mentz G, Reddy P. Ambient air pollutant exposures, gene-interactions and fluctuations in pulmonary function among South African schoolchildren. 21st Conference of the International Society for Environmental Epidemiology, Dublin, Ireland. August 2009. *Epidemiology Supplement*. 2009; 20(6):S89
30. Naidoo S, London L, Burdorf A, **Naidoo RN**, Kromhout H. Spontaneous miscarriages and infant deaths among female farmers in rural South Africa. 22nd EPICOH conference, 7-11 September 2009. Oxford, England. *Occ Environ Med* 68, Suppl 1

REPORTS, MONOGRAPHS AND POLICY DOCUMENTS

1. Development of a Framework for the Provision of Occupational Health Services in KwaZulu-Natal (1995)
2. Occupational Health Indicators for Service Provision (1996)
3. Package of minimum occupational health services for provincial directorates of Occupational Health (1999)
4. Respiratory Health of South African Coalminers: SIMRAC Commissioned Report 607 (2002)
5. Respiratory Health of South African Coalminers. Doctoral Dissertation, University of Michigan, 2002.
6. Robins T., Kistnasamy B., Naidoo R., Lallo U., Irusen E., Jack C., Maistry N., Kistnasamy J., Baijnath N., Amsterdam H., Batterman S. and Mentz G. Air contaminant exposures, acute symptoms and disease aggravation among students and teachers at the settlers school in South Durban. Final report, University of Natal/University of Michigan, Durban 2002.
7. Naidoo RN, Gqaleni N, Batterman S, Robins TG. The South Durban Health Study: Health study and health risk assessment: Final Report. University of KwaZulu-Natal, Durban, July 2006.

CHAPTERS IN BOOKS

Naidoo R. Occupational Epidemiology. In *Epidemiology: A Research Manual for South Africa*. 2nd edition. Joubert G, Ehrlich R (Executive editors). Oxford University Press. Cape Town, 2007

[Edited]

PRESENTATIONS, INVITED TALKS AND GUEST LECTURES

[excluding published proceedings and abstracts recorded above]

1. Invited speaker: Socio-political situation in South Africa. Organised by the Public Health Students of African Descent, October 1994.

2. Address to the Annual Congress of Occupational Health Section of the American Public Health Association (APHA), November 1994.
3. Occupational Health in Health Care Workers, 3rd International Commission for Occupational Health, Edinburgh, Scotland, July 1997: Integration of environmental health services into a comprehensive primary health care programme in the Durban Metropolitan area, South Africa.
4. Guest Lecture: Occupational diseases in South Africa. Occupational Diseases Seminar: Postgraduate (credit bearing) course (EIH 769) at University of Michigan, September 1997.
5. Guest Lecture: Occupational Health in South Africa. Professional Seminars in Occupational Health: Postgraduate (credit bearing) course (EIH 668) at University of Michigan, January 1998
6. Fogarty International Center Annual Conference of participating US grantee institutions in occupational and environmental health, Washington, United States, March 1998: The Political Development of occupational health in South Africa
7. Health and Social Change International Workshop, University of Linkoping, Sweden, September 2001: The effects of social change for workers in South Africa (invited participant)
8. Occupational Health and Public Health: Lessons from the Past, Challenges for the future, Norrkoping, Sweden, September 2001: The Political Economy of Occupational Health in South Africa
9. Webster Memorial Conference, National Centre of Occupational Health: Work and Chronic Bronchitis, Johannesburg, November 2001: Chronic Bronchitis as a work related disease (invited speaker)
10. Fogarty International Center Annual Conference of participating US grantee institutions in occupational and environmental health, Bethesda, United States, January 2002: The state of occupational health in the Southern African Development Community
11. Mine Medical Officers' Association Annual Congress and Conference: Nelspruit, May 2002: Respiratory Health of South African Coalminers (invited speaker)
12. Respiratory health among South African Coalminers. 14TH Conference of the IUATLD Africa Region, Durban, South Africa, 11-14 June 2002
13. Biological Monitoring in Occupational Health Seminar: Durban 16 October 2002: Hazardous Biological Agents Regulations (invited speaker)
14. Occupational Asthma in South Africa, Joint National Asthma Education Project and North Guateng SAMA: International Asthma Day seminar. CSIR, Pretoria, May 2003.
15. The role of safety managers in workplace asthma: Institute of Safety Managers (KZN Branch) Annual Conference, Durban, July 2003.
16. Principles of Occupational Health Management. KwaZulu-Natal Midlands Doctors' Guild Annual Meeting, Pietermaritzburg, August 2003
17. University of Natal Nelson R. Mandela School of Medicine Faculty Research Day: Respirable dust exposure and declines in lung function among South African coal miners. September 2003.
18. Opportunities for information networking within the Fogarty Occupational and Environmental Health programme in Southern Africa. WHO Planning Workshop on Development of Information Networks in Southern Africa, Johannesburg, October 2003 (invited speaker)
19. Occupational Asthma: Asthma for Africa Congress 2003 (2nd National Asthma Education Project Conference), Durban. October 2003 (invited speaker and chair of session on occupational health)

20. Epidemiological Approaches investigating the impact of environmental pollutants on health of communities in the Durban Metro. World Congress on Environmental Health, Durban, 2004 (invited speaker)
21. Results of the Settlers' School Study into environmental pollution and respiratory outcomes. World Congress on Environmental Health, Durban, 2004 (invited speaker).
22. Effect of respirable coal dust exposure on respiratory symptoms in South African Coal Miners: Evidence of a "healthy worker effect". Public Health Association of South Africa 2004 Conference, Durban, June 2004.
23. Air pollution and children's health. 6th African Renaissance Conference. Durban, March 2004.
24. Chronic Bronchitis in the workplace. South African Thoracic Society Annual Congress. Durban, August 2004 (invited speaker)
25. Respirable dust related lung function effects between current and former South African Coal Miners. 17th International Symposium on Epidemiology in Occupational Health. Melbourne, Australia. October 2004
26. Autopsy based respiratory outcomes among South African Coal Miners. 17th International Symposium on Epidemiology in Occupational Health. Melbourne, Australia. October 2004
27. T.G. Robins, C. Jack, E. Irusen, G.B. Mentz, U. Laloo, J. Kistnasamy, S. Batterman, R. Naidoo. High Prevalence of Bronchial Hyperreactivity Among School Children In Durban, South Africa. ATS 2005 · San Diego International Conference
28. Respiratory Health of Coalminers. COPICON Congress 2005: Combined Congress of the Critical Care Society of Southern Africa and the South African Thoracic Society. Sun City, South Africa. July 2005. (invited speaker)
29. Prevention of Occupational Asthma: Asthma for Africa Congress 2005 (3rd National Asthma Education Project Conference), Johannesburg, November 2005 (invited speaker)
30. Jafta N, Gqaleni N, Batterman S, Naidoo R and Robins T. Allergen levels in the residences and schools in primary school children in Durban. The 3rd National Public Health Conference, Johannesburg. May 2006
31. Sikhosana N, Jafta N, Gqaleni N, Naidoo R, Batterman SN and Robins T. Indoor concentration of particulate matter and carbon monoxide in the south and north of Durban. The 3rd National Public Health Conference, Johannesburg. May 2006
32. Gounden Y, Batterman S and Naidoo R. The Durban south Health study: Exposure monitoring. The 3rd National Public Health Conference, Johannesburg. May 2006
33. Reddy P, Naidoo R, Naidoo R, London S, and Robins T. Allelic frequencies of GSTM1, GSTP1 and NQO1 polymorphisms in a South African population. The 3rd National Public Health Conference, Johannesburg. May 2006
34. National Institute of Environmental Health Sciences (US NIH) Global Environmental Health Workshop. San Francisco, California. 10-13 January 2007 (invited participant)
<http://www.niehs.nih.gov/news/events/pastmtg/2007/global/docs/GEH-Overview-Summary.pdf> ; <http://www.niehs.nih.gov/news/events/pastmtg/2007/global/index.cfm>;
<http://www.niehs.nih.gov/news/events/pastmtg/2007/global/notice.cfm>
35. Jafta N, Gqaleni N, Batterman S, Naidoo R and Robins T, Levels and conditions associated with higher indoor allergens in bedrooms of primary school children in Durban Homes. South African Thoracic Society Congress, March 2007, Cape Town.
36. Y. Gounden, R. Naidoo, S. Batterman, T. Robins, N. Gqaleni, C. Jack, N. Jafta, C. Jia, S. Chernyak, J. Kistansamy, M. vd Merwe, J. Chetty, K. Govender. Ambient Air Pollution And Respiratory Health: The South Durban Health Study (SDHS). South African Thoracic Society Congress, March 2007, Cape Town.
37. Naidoo R. Pneumoconiosis on South African coal mines: myth or reality. South African Thoracic Society Congress, March 2007, Cape Town (invited speaker)

38. Reddy, P., Naidoo, R, Naidoo, R, London, S, Robins, T, Batterman, S and Mentz G. 2 – 4 June 2008. Pulmonary responses to air pollutants is modified by genotype: A gene-environment interaction. 4th Public Health Association of South Africa, Cape Sun.
39. Reddy, P, Naidoo, R, Naidoo, R, London, S, Robins, T., Batterman, S and Mentz, G. 12 – 13 August 2008. Pulmonary responses to air pollutants is modified by genotype. Astrazeneca-College Of Health Sciences Research Symposium,UKZN.
40. Reddy P, Naidoo RN, Naidoo R., Robins TG, Mentz G, London SJ, Batterman S. Effect modification of respiratory responses to ambient air pollutants by GSTM1, GSTP1 and NQO1 polymorphisms. American Thoracic Society Congress, San Francisco, California (2007).
41. Naidoo RN. Strengthening Fogarty initiatives in Southern Africa: the case of occupational and environmental health. Foundation for the National Institutes of Health Meeting: “Public-private partnerships to deliver health interventions” Washington, October 2008.(invited speaker)
42. Naidoo RN. Fogarty in Southern Africa. Fogarty International Center 40th Anniversary Gala Dinner. Guest Speaker. Washington, October 2008
(http://www.fic.nih.gov/news/publications/global_health_matters/2008/fogartydinner_10-08.htm)
43. Govender N, Naidoo RN. Occupational exposures and COPD. The 5th National Public Health Conference, Durban, December 2009
44. Reddy P, Naidoo RN, Robins TG, Mentz G, London SJ, Li H. Genetic epidemiology of respiratory disease. A South African perspective. The 5th National Public Health Conference, Durban, December 2009
45. Robins TG, Jeebhay MF, Naidoo RN. Do international funding initiatives work? The Fogarty experience in South Africa. 29th ICOH International Congress on Occupational Health, Cape Town, South Africa, March 2009
46. Naidoo RN. Funding sustainable occupational health development in Southern Africa – what are we aligning to? 29th ICOH International Congress on Occupational Health, Cape Town, South Africa, March 2009
47. Naidoo RN. Funding occupational health in Southern Africa: Inter-agency collaboration. 29th ICOH International Congress on Occupational Health, Cape Town, South Africa, March 2009
48. Ryan A, Naidoo RN. Globalisation and occupational health: Current trends and future directions in Southern Africa. 29th ICOH International Congress on Occupational Health, Cape Town, South Africa, March 2009
49. Kessy FM, Naidoo RN, Mlingi L. Health risk assessments and interventions among stonecrushers from the informal sector in Dar-es-Salaam, Tanzania. 29th ICOH International Congress on Occupational Health, Cape Town, South Africa, March 2009
50. Naidoo RN, Robins T, Batterman S, Mentz G. Respiratory outcomes, work and ambient pollution. 29th ICOH International Congress on Occupational Health, Cape Town, South Africa, March 2009
51. Naidoo S, London L, Burdorf A, Naidoo RN, Kromhout H. Musculoskeletal Pain In Women Working In Small-Scale Agriculture In South Africa. 29th ICOH International Congress on Occupational Health, Cape Town, South Africa, March 2009
52. Kessy FM, Naidoo RN Mlingi L. Health and Safety Risks of Informal Metal Workers, Dar-es-Salaam, Tanzania. 29th ICOH International Congress on Occupational Health, Cape Town, South Africa, March 2009
53. Naidoo S, London L, Burdorf A, Naidoo RN, Kromhout H Agricultural Activities, Crop Production and Pesticide Use among women working in small scale farming in two areas of Northern KwaZulu-Natal (KZN), South Africa (SA). 29th ICOH International Congress on Occupational Health, Cape Town, South Africa, March 2009

54. Govender N, Naidoo RN. Occupational exposures and COPD. 29th ICOH International Congress on Occupational Health, Cape Town, South Africa, March 2009
55. **Naidoo RN**, Kessy F, Mlingi L. Respiratory health of stonecrushers from the informal sector in Tanzania. 29th ICOH International Congress on Occupational Health, Cape Town, South Africa, March 2009
56. [Invited speaker] Naidoo RN. The Informal Sector in Southern Africa – Workers' Health and Social Justice. American Public Health Association Annual Meeting, Denver, Colorado, USA, October 2010
57. [Invited speaker] Naidoo RN. Funding sustainable occupational health development in Southern Africa. American Public Health Association Annual Meeting, Denver, Colorado, USA, October 2010
58. Jafta N, Naidoo RN, Jeena P. Association of childhood TB with indoor air pollution. 6th National Public Health Association of South Africa (PHASA) Conference, East London, South Africa. November 2010.
59. Makamure MT, Reddy P, Chuturgoon A, Moodley D, Naidoo RN. Association of the tumour necrosis factor α (-308 G/A) gene polymorphism with asthma related phenotypes among children in Durban, South Africa. ERAM/SERIN Congress: European Academy of Allergy and Clinical Immunology, Brussels, Belgium, November 2010.
60. Asharam K, Naidoo R, Chuturgoon A, Reddy P, Naidoo P. Air Pollution and Risk Factors for Adverse Birth Outcomes. 6th National Public Health Association of South Africa (PHASA) Conference, East London, South Africa. November 2010
61. Matooane M, Naidoo R, Batterman S. Time-activity patterns: a case of south Durban, South Africa. Joint International Society of Exposure Science and International Society for Environmental Epidemiology. August 2010. Seoul, South Korea
62. Association of the tumour necrosis factor α (-308 G/A) gene polymorphism with asthma and atopy among children in Durban, South Africa. Makamure, M.T.; Reddy, P.; Chuturgoon, A; Moodley, D, Naidoo, R. Joint International conference of the African and Southern African Societies of Human Genetics, 6-9 March, 2011. Cape Town, South Africa.
63. [invited speaker] Naidoo RN. Urbanisation and asthma – learning lessons from south Durban. Commonwealth Pharmacists Association International Conference. 29 May-1 June 2011. Durban, South Africa.
64. Govender N, Laloo UG, Naidoo RN. COPD and occupational exposures: a hospital based case-control study. South African Thoracic Society and Critical Care Congress. 27-31 July 2011. Durban, South Africa.
65. [invited speaker] Naidoo RN. The Neil White Memorial Lecture: the need for renewal in researcher-activism in workers' health. South African Thoracic Society and Critical Care Congress. 27-31 July 2011. Durban, South Africa.
66. Naidoo RN, Chuturgoon A, Reddy P, Asharam K, Naidoo D, Phululdaree A, Moodley D. Ambient pollution and birth outcomes. International Society for Environmental Epidemiology Annual Congress. 13-16 September 2011. Barcelona, Spain
67. Govender N, Laloo UG, Naidoo RN. Occupational exposures and chronic obstructive pulmonary disease in a high tuberculosis prevalence population. International Society for Environmental Epidemiology Annual Congress. 13-16 September 2011. Barcelona, Spain
68. Naidoo S, London L, Burdorf A, Naidoo RN, Kromhout H. Occupational activities associated with a reported history of Malaria among women working in small-scale agriculture in South Africa. International Society for Environmental Epidemiology Annual Congress. 13-16 September 2011. Barcelona, Spain
69. [invited keynote] Naidoo RN. Public Health and the Climate: Addressing the Challenges for Southern Africa. Public Health Association of South Africa/Rural Doctors Association of South Africa. Bloemfontein, September 2012.

70. [invited plenary] Naidoo RN. Climate Change – its impacts on Environmental Health in Africa. Africa Congress on Environmental Health. Durban, November 2012
71. K Asharam and RN Naidoo, P Reddy and A Chuturgoon. Ambient air pollution and birth outcomes. South African Paediatric Association Congress 2012 – Limpopo Province. 22-26 August 2012.
72. K Asharam, FJ Veldman, RN Naidoo, A Chuturgoon. Vitamin A status in a cohort of pregnant women from areas with different levels of air pollution and HIV status. 8th PHASA/RUDASA Conference- Bloemfontein. 5 - 7 September 2012.
73. K Asharam, FJ Veldman, RN Naidoo, A Chuturgoon. Vitamin A status in a cohort of pregnant women from areas with different levels of air pollution and HIV status. UKZN College of Health Sciences Research Symposium 2012. 12-13 September 2012.
74. S Nagiah, A Phulukdaree, K Asharam, RN Naidoo, DB Naidoo and A Chuturgoon. The role of mitochondria in the oxidative stress response of PBMCS of pregnant women living in an industrial hub (Durban South Basin). UKZN College of Health Sciences Research Symposium 2012. 12-13 September 2012.
75. K Asharam and RN Naidoo. Ambient air pollution and birth outcomes. The Municipal Institute of learning (MILE), eThekweni Research Symposium – UKZN. 19 September 2012.
76. S Muttoo, R Naidoo, Meliefste K. Developing a land use regression model for NOx exposure assessment. 8th PHASA/RUDASA Conference- Bloemfontein. 5 - 7 September 2012.
77. A. Phulukdaree, ¹D. Moodley, ²R. Naidoo, ¹A.A Chuturgoon. OXIDATIVE Stress response in peripheral lymphocytes during pregnancy in an industrialised hub – Durban South versus Durban North. SASMB Conference, Drakensberg, South Africa: February 2012
78. K Asharam, FJ Veldman, RN Naidoo Vitamina A Status In A Cohort Of Pregnant Women From Areas With Different Levels Of Air Pollution *International Congress of Pediatrics 2013 (ICP) The 27th Congress of International Pediatric Association 24-29 August 2013, Melbourne, Australia*
79. Naidoo RN, Chuturgoon A, Reddy P, Asharam K. Birth Outcomes, Biomarkers Of Oxidative Stress And Exposures To Oxides Of Nitrogen: Findings From A Birth Cohort Pilot. International Society for Environmental Epidemiology Annual Congress. 19-23 August 2013. Basel, Switzerland
80. S Muttoo, R Naidoo, Meliefste K. Land use regression model for NOx exposure assessment in the MACE Birth Cohort. International Society for Environmental Epidemiology Annual Congress. 19-23 August 2013. Basel, Switzerland

ATTENDANCE AT CONFERENCES AND WORKSHOPS (WORKSHOP CONVENOR, SESSION CHAIR OR NON-PRESENTING DELEGATE)

1. Occupational Health in Southern Africa, National Centre for Occupational Health: September 1994, Johannesburg, South Africa
2. Pacific Rim Conference on Occupational Health, Sydney, Australia, October 1995
3. Allergy Conference of Southern Africa, ALLSA, Durban, South Africa, October 1996.
4. Pulmonology Congress, Durban. December 2003 (invited chair of session).
5. Public Health Association of South Africa 2004 Conference, Durban, June 2004 (invited chair of session)
6. Occupational Respiratory Diseases session: 20th International Conference on Epidemiology in Occupational Health. Costa Rica, June 2008 (session chair)

7. Contribution of International Programmes to Occupational Health in Developing Countries: Special Symposium - 29th ICOH International Congress on Occupational Health, Cape Town, South Africa, March 2009 (Chair and Symposium Organiser)
8. Convenor: Earth Observation and Environmental Modelling for the mitigation of Health Risk (EO2HEAVEN) Workshop (international consortium): Durban, November 2011
9. Co-convenor: Climate and Health Workshop. International workshop held in parallel to the Committee of Parties (COP) 17 in Durban, December 2011. Facilitator of sessions within workshop
10. Delegate: World Medical Association to COP17, Durban 2011. Participation in sessions and videoconferencing at COP17 (http://unfccc4.meta-fusion.com/kongresse/cop17/templ/play.php?id_kongresssession=4432&theme=unfccc)
11. Convenor: Climate and Health Workshop: parallel session to the Public Health Association of South Africa/Rural Doctors Association of South Africa. Bloemfontein, September 2012.
12. Discussant: Africa Congress on Environmental Health: Climate Change and the role of the environmental health practitioner. Durban, November 2012

AWARDS AND GRANTS

1. International Award from the Occupational Health Section of the American Public Health Association, November 1994.
2. Scholarship to Asia Pacific Rim Conference, Sydney Australia, October 1995
3. Fogarty International funding: two month research residency at the School of Public Health, University of Michigan (Minority International Research and Training programme) (1996)
4. SASOM Award: Gold Medal 1996 for development of the discipline of occupational health in the province.
5. International Institute of the University of Michigan: doctoral studies at the University of Michigan (1997)
6. Fogarty International Center of the National Institute of Health (United States) scholarship: doctoral studies at the University of Michigan (1997)
7. Medical Research Council funding: Research study (1998): The relationship of occupational exposures and idiopathic pulmonary fibrosis.
8. Safety in Mines Research Advisory Council study grant (1999 - 2000): Respiratory Health among South African Coalminers (R1.2million)
9. Rockefeller Institute Scholarship: Africa Dissertation International Award for doctoral research field work (1999) (\$20 000.00).
10. Medical Research Council funding: Respiratory health of South African coalminers (R128 000)
11. World Health Organisation/National Department of Health (R150 000): Research: Effect of substance abuse amongst workers (2001)
12. World Health Organisation/National Department of Health (R320 000): Training grant for public sector health care workers in occupational health (2001)
13. World Health Organisation (R20 000): Development of an occupational health and safety training manual for agriculture and forestry workers (2001)
14. University of Natal international conference travel grant (R5 500): Conference on Occupational Health and Public Health (Sweden, 2001)

15. Swedish International Development Agency (SIDA) (R18 000): Development of proposal for capacity building in occupational health in Southern Africa – commissioned by Southern African Development Community (SADC)
16. Nomination for University of Michigan Distinguished Dissertation Award for doctoral dissertation “Respiratory Health of South African Coalminers”, July 2002
17. eThekweni Municipality (R6 000 000): The Health Status And Risk Factors Associated With Adverse Health Outcomes Among The Durban South Community. July 2003
18. University of KwaZulu-Natal Research Fund (R55 000): Health impacts of environmental pollution, July 2003/4.
19. National Institute of Health/Fogarty International Center (R1 200 000) (co-PI): Health, Environment and Economic Development in South Durban, August 2003.
20. University of Natal Nelson R. Mandela School of Medicine Faculty Research Day – Best Senior Pre-Clinical Presentation: September 2003
21. Department of Environmental Health Sciences, School of Public Health, University of Michigan – Warren Cook Award for Best Student in Occupational Health, 2003.
22. Medical Research Council. Birth Outcomes and Air Pollution (R330 000) (2010-2013)
23. European Union Framework Programme 7. (R1 000 000) (2010 – 2013). Earth Observation and ENVironmental modelling for the mitigation of HEAlth risks (EO2HEAVEN)
24. National Institute of Health/Fogarty International Center 09/01/09- ongoing (co-PI). Millennium Promise Awards: Non-communicable Chronic Diseases Research Training Program
25. Chemical Industries Education and Training Authority: Worker Health and Safety Education in the Chemical Industries (R500 000) (2011-13)
26. Department of Labour: Worker Health and Safety in Occupational Health in the Chemical Industries (R1 656 064) (2012-2013)
27. National Research Foundation: Competitive Funding for Rated Researchers (R120 000) (2012-2014)
28. University of Michigan Environmental Health Sciences Core Center Grant (as co-PI with Stuart Batterman): The epigenetics of environmentally-related childhood asthma (R160 000)

APPOINTMENTS

1. Head: Occupational Health Programme, Department of Community Health, Nelson R. Mandela School of Medicine, University of Natal
2. Head: Occupational Medicine Clinic, King Edward Hospital (jointly with Respiratory Unit, King Edward Hospital)
3. Director: Industrial Health Unit, (affiliated Unit), University of Natal
4. National Programme Manager: Fogarty International Center/Univ of Michigan International Training and Research in Environmental and Occupational Health for Southern Africa
5. Deputy Director: Medical Research Council Research Unit in Occupational Health (joint Unit with the University of Cape Town)
6. Deputy Director: Centre for Occupational and Environmental Health, Nelson R. Mandela School of Medicine, University of Natal

TEACHING AND TRAINING

(1). Undergraduate

1. First year medical students: (1994 – 2000) general occupational health lectures and tutorials
2. Fourth year medical students (1994 – 2003): occupational medicine – lectures, tutorials and case studies
3. Third year environmental health students (Natal Technikon) (1994 – 1997): joint tutorials with medical students
4. Development and delivery of credit bearing special programme for residential undergraduates at University of Michigan: Public Health Research and International Issues (1997 - 1998)
5. Module development – Body in Motion II Module for medical undergraduates at Nelson R. Mandela School of Medicine.
6. Module Development: Man, Work and Environment – Nelson R. Mandela School of Medicine
7. Supervision of Research Electives – 4th year students - Nelson R. Mandela School of Medicine

(2). Postgraduate

1. Certificate course training for medical doctors: Occupational Health 1994 – 1997
2. Postgraduate Diploma in Occupational Health: Course Co-ordinator 1999 – current
3. Occupational Health modules/sessions in the following courses:
 - Diploma in Health Services Management (1994 – 2000)
 - Masters in Public Health (2001 – 2002)
 - Masters in Family Medicine (1996/7)
4. Masters in Medical Science (Occupational and Environmental Health)
5. Co-ordinator: development of modules in Occupational Hygiene for Masters in Medical Science (Occupational Hygiene)
6. Member of Task Team: development of distance based programmes in occupational and environmental health (jointly with University of Cape Town, funded by Fogarty International Center)
7. Development of distance based module for Fogarty Southern Africa training initiative: Psychosocial and sociological aspects of occupational and environmental health; Occupational and Environmental Respiratory Diseases

(3). Examinations

1. Responsible for undergraduate medical student examinations in occupational health (1994 – current) at first year and four year of study
2. Responsible for postgraduate examinations (D.OH, DHSM, MPH and Masters in Medical Science) since 1994.
3. External examiner for third and fourth year for Department of Environmental Health Sciences, Natal Technikon, 1994 – 1997.
4. External examiner for postgraduate Diploma in Occupational Health (University of Cape Town): 2002/4; 2006; 2012
5. College of Medicines of South Africa Examinations in Occupational Medicine (national specialist examinations): core/additional examiner: 2006-2011; Exams convenor: 2012

ACADEMIC WORKSHOPS CONVENED

Curriculum Development Workshop in Occupational Hygiene: co-facilitated by Prof Wayne Sanderson, University of Iowa, November 2006

Curriculum Development Workshop in Environmental Health: co-facilitated by Prof Stuart Batterman, University of Michigan, February 2009

Exposure Assessment in Occupational Epidemiology: co-facilitated by Prof Hans Kromhout and Dick Heederik, University of Utrecht; Prof Alex Burdorf, University of Rotterdam, February 2010

Occupational and Environmental Toxicology: co-facilitated by Profs Kjell Toren and Lars Barregard, University of Gothenburg. March 2010

HIGHER DEGREES SUPPORT AND SUPERVISION

1. Co-supervisor: Respiratory Symptoms due to Formaldehyde Exposure among Medical Students in the Dissecting Hall, University of Natal: Masters in Medical Science degree by Jacques Oosthuizen (1996)
2. Supervisory support: Risk Factors for the development of byssinosis among textile workers, KwaZulu Natal: Masters in Medical Science degree by Garth Hunter (2001)
3. Internal Examiner: Lung function among automotive spray painters exposed to isocyanates: Masters in Medical Science degree by Bernard Randolph (1997)
4. External Examiner: Factors determining exposure to benzene vapour among filling station attendants and road tanker drivers in the city of Cape Town, South Africa. Dissertation for Masters in Public Health (University of Cape Town) by E. Rusford (2002).
5. Supervision of various mini-research projects for participants in the Diploma in Occupational Health course (1999 - current)
6. External Examiner: Postgraduate Diploma in Occupational Health, University of Cape Town, November 2002.
7. External Examiner: Occupational allergy and asthma among table grape farm workers in the Hex-river Valley, Western Cape – Dissertation for Masters in Technology in Environmental Health (Peninsula Technikon) by Roslynn Baatjies (2003)
8. Internal Examiner: Dissertation for Masters in Medical Science by Mr. Jaisendra Gansan (2004)
9. Internal Examiner: Dissertation for Masters in Medical Science - Indoor And Outdoor Environmental Assessment Of Durban Block Hostels – An Internal Comparison On Exposure Measures And Outcomes Of Self Supported Health And Wealth Being In Hostels - Sikhumbuzo Archibald Buthelezi (2005)
10. Supervisor: Doctoral Thesis: Epidemiological and genetic risk factors associated with asthma among children in the South Durban region in KwaZulu-Natal. Poovendrie Reddy (2010)
11. Supervisor: Doctoral Thesis: Inhalational Risk Assessment of Ambient Air Pollutants in Durban. Mamopeli Matoaane (current)
12. Supervisor: Masters in Medical Science (coursework dissertation): Ambient sulphur dioxide and particulate matter concentrations measured in selected communities of north and south Durban. Yoganathan Gounden (2009)
13. Supervisor: Masters in Medical Science (coursework dissertation): Tuberculosis in coalminers in Mpumalanga. Obed Mphofu (2008)
14. Supervisor: Masters in Public Health (coursework dissertation): A study to investigate the levels of particulate matter (PM10) in industrially exposed and non exposed communities: a comparative study. Sagren Moodley (2008)
15. Supervisor: Masters in Public Health (coursework dissertation): Respiratory health effects of the informal stone crushers in Dar Es Salaam, Tanzania. Florian Kessy (2011)

16. Supervisor: Masters in Medical Science (full research): The Respiratory health of workers exposed to charcoal dust in Nambian forestry industry. Ndinoholo Hamatui (current)
17. Supervisor: Masters in Medical Science (full research): Determining exposure to oxides of nitrogen among pregnant females in a birth cohort. Sheena Mutttoo (current)
18. Supervisor: Masters in Medicine (coursework dissertation): Workplace exposures among patients with chronic obstructive pulmonary disease. Nadira Govender (2011)
19. Co-supervisor: PhD: Innovative statistical strategies in addressing missing and non-response in large environmental epidemiological datasets to identify risk factors for childhood asthma. Gill Hendry (current)
20. Supervisor: PhD: The interaction of social determinants and ambient pollution in childhood asthma. Joy Kistnasamy (current)
21. Supervisor: PhD: The relationship between indoor air pollutants and childhood tuberculosis. Nkosana Jafta (current)
22. Supervisor: PhD: The impacts of stove interventions in reducing adverse respiratory outcomes among women and children in Moshi, Tanzania Robert Mussa Njee (current).
23. Supervisor: Masters in Medical Science (full research): Policies and regulatory frameworks influencing trends of work-related fatalities and severe injuries in the construction industry in Dar-es-Salaam, Tanzania. Joshua Matiko (graduated)
24. Supervisor: Masters in Medicine (coursework): Occupational exposure and genotoxicity among eThekweni Municipality petrol attendants. Mpho Makwela (graduated)

COMMITTEES/COMMISSIONS

1. The National Committee on Occupational Health Policy (Department of National Health)
2. The Scientific Committee for the Pan African Conference on Occupational Health's (PACOH) 1997 conference
3. Commission of Enquiry into chemical exposure of workers at the University of Durban-Westville
4. Management Board: Industrial Health Unit, Department of Sociology, University of Natal (1995 – 2001)
5. Occupational Health and Safety Management committee - King Edward VIII Hospital (1995 – 1998)
6. Technical Committee for Occupational Diseases (Office of the Compensation Commissioner, Department of Labour): 2000 – current
7. Member, Scientific Review Committee, Fogarty International Center International Training and Research in Occupational and Environmental Health programme (2001 – 2006).
8. Major Foreign Collaborator, Fogarty International Center International Training and Research in Occupational and Environmental Health Southern Africa programme (2001 – 2006)
9. Appeals Review Committee: Provincial Department of Agricultural and Environmental Affairs – Objections to Methane Gas Pipeline installation in the Durban South residential area (2001).
10. Technical Committee for Durban South Environmental Pollution Research Task Team (2001/2)
11. Scientific Committee: Asthma for Africa Congress 2003 (2nd National Asthma Education Project Conference) Durban, October 2003
12. Member, Scientific Committee: World Congress on Environmental Health, Durban 2004.
13. Council Member, National Asthma Education Programme (2005)

14. Member, Scientific Committee: International Commission on Occupational Health, International Conference, Cape Town, 2009
15. Advisory Board, International Archives of Occupational and Environmental Health
<http://www.springer.com/environment/environmental+health+-+public+health/journal/420?detailsPage=editorialBoard>
16. Editorial Board, EcoHealth. 2008-2010
<http://www.springer.com/environment/journal/10393?detailsPage=editorialBoard>
17. Regular and occasional reviewer for peer reviewed journals:
 - American Journal of Respiratory and Critical Care Medicine
 - International Journal of Occupational and Environmental Health.
 - International Archives of Occupational and Environmental Health
 - American Journal of Industrial Medicine
 - Journal of Environmental Science and Health
 - International Journal of Tuberculosis and Lung Disease
 - Environmental Health Perspectives
 - Occupational Health Southern Africa
 - Journal of African Earth Sciences
 - Medical Science Monitor
 - Occupational and Environmental Medicine

CONTINUING EDUCATION COURSES (NON ACADEMIC QUALIFICATION)

1. Department of Community Health Certificate course in Occupational Health (course co-ordinator, 1995 - 7)
2. International Perspectives in Occupational Health (October 1993 - February 1994) - co-ordinated by Professor Tom Robins (Director, Occupational Health Program, School of Public Health, University of Michigan)
3. Occupational Epidemiology (February-March 1994) co-ordinated by Professor Tom Robins (Director, Occupational Health Program, School of Public Health, University of Michigan)
4. Environmental Health Course - course co-ordinator Professor Jerome Nriagu (Director, Environmental Health Program, School of Public Health, University of Michigan)
5. Advanced Occupational Epidemiology (September - December 2000) co-ordinated by Professor Tom Robins (Director, Occupational Health Program, School of Public Health, University of Michigan)

NON PROFESSIONAL ACTIVITIES

SWIMMING:

Council Member and Convenor – Development Council: KwaZulu Natal Aquatics (1999 – current)

General Secretary - KwaZulu Natal Aquatics (2010 – current)

Deputy Convenor: National Transformation Committee – Swimming South Africa (2000 – current)

KwaZulu Natal Amateur Swimming Association:

Vice President Development (1992 – 4)

Records Clerk (1994 – 5)

Deputy President (1996 – 1997)

Amateur Swimming Association of South Africa:

National Executive Member: Age Group Convenor: 1995 – 1999

National Selector: (1992 – 1999)

REFEREES

Thomas G. Robins, MD, MPH

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CURRICULUM VITAE: DAVID JOHN REES

2020

CURRENT POSITION AND ADDRESS

Head: Occupational Medicine and Epidemiology, National Institute for Occupational Health (NIOH), National Health Laboratory Service (NHLS).
Professor Emeritus, University of the Witwatersrand, Johannesburg.

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P O Box 4788
Johannesburg
2000 South Africa

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e-mail: davidr@nioh.ac.za

PERSONAL

Born Johannesburg, 17 December 1954
Married to Susan Goldstein, a Community Health specialist, with three children: Kate (born 1983), Jan (born 1984) and Nicki (born 1988).

EDUCATION

1971	Matriculated Parktown Boys' High School
1979	MBBCh University of the Witwatersrand, Johannesburg

POST GRADUATE DEGREES

1986	DOH	University of the Witwatersrand (Distinction)
1990	MSc (Med)	University of the Witwatersrand (Distinction)
1995	PhD	University of Cape Town

REGISTRATION

2005	Specialist Occupational Medicine with the HPC South Africa
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SHORT COURSES

1992	Public Management	University of Pretoria (cum laude)
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MAJOR AWARDS

- 1986 Joan and Ian Webster Gold Medal in Occupational Health
- 1990 W. Harding le Riche Gold Medal in Epidemiology
- 1997 Member of Faculty of Occupational Medicine (MFOM), Royal College of Physicians, UK (currently not a member)
- 2004 Faculty of Health Sciences Award for Exceptional Service
- 2015 Faculty of Health Sciences recognition for dedication and achievement in research

PROFESSIONAL EXPERIENCE

- 1981-1984 Clinical appointments as senior house officer, medical officer and then senior medical officer in urology (Hillbrow Hospital), paediatrics (Baragwanath Hospital), Intensive Care Unit (Baragwanath Hospital) and the Soweto Primary Health Care Clinics.
- 1984 -2019 Full-time in occupational health.
- 1998- 2019 Professor of Occupational Health, University of the Witwatersrand, Johannesburg.
- 2020 Professor Emeritus, University of the Witwatersrand, Johannesburg.
- 1984 -1988 Senior Medical Officer, Occupational Medicine, National Centre for Occupational Health (NCOH).
- 1988 -1990 Head: Occupational Medicine Section, NCOH.
- 1991- 1998 Director: Occupational Medicine and Epidemiology, NCOH.
- 1991(6 months) Acting Director: NCOH.
- 1996-1997 Acting Chief Director: Occupational Health, Department of Health and acting Director: NCOH.
- 1998-2003 Director: NCOH.
- 2003-2004 Acting Director: National Institute for Occupational Health (NIOH).
- 2004-2020 Head: Occupational Medicine Division or Occupational Medicine and Epidemiology Division, NIOH.

The Division: Occupational Medicine and Epidemiology, NCOH and NIOH has over the years had a staff complement of about 30 medical practitioners, scientists and support staff. It includes an occupational medicine section (with an ergonomics unit and an occupational medicine referral clinic), occupational epidemiology and immunology and microbiology sections (with laboratories). The referral clinic evaluates

workers for occupational disease and incorporates a public health response in that appropriate interventions to improve workplace conditions and surveillance of workers form part of the management of occupational diseases. The Division manages individual patients, including certification and submission for compensation, provides advisory services to factories and workers, does health hazard evaluations (field surveys of exposures and health effects), conducts and supervises research into

occupational and environmental health issues, produces and disseminates occupational health information and teaches occupational health to practitioners, undergraduates, registrars and workers.

MEMBERSHIP OF OCCUPATIONAL HEALTH BODIES (Past or current)

- Chairperson: Epidemiology Research Unit (ERU) Board
(The ERU conducted research into occupational health in the mining industry, it was managed by a tripartite board).
- Member: Advisory Council for Occupational Health and Safety
(A tripartite statutory body to advise the Minister of Labour on occupational health, including all new legislation)
- Member: Minister of Health's Committee on Occupational Health
(The committee produced a plan for occupational health services in South Africa)
- Member: Steering Committee, National Occupational Health and Safety Council (a committee to advise the Minister of Labour on the establishment of a national council for South Africa)
- Member: Committee to advise the Workmens' Compensation Commissioner on revisions to the schedule of compensable diseases (this led to a new system for compensating occupational disease in South Africa)
- Member: Department of Mineral and Energy Affairs Task Team on Occupational Medicine (this task team helped draft aspects of the Mine Health and Safety Act)
- Member: Interdepartmental Task Team of the Departments of Labour and Health (this task team drew up principles for interdepartmental coordination between the Department of Health and Labour)
- Member: Committee to advise the Minister of Health on compensation for platinum salt sensitivity
- Founder Member: Sub-committee on Occupational Asthma, South African Pulmonology Society (this led to occupational asthma becoming a compensable disease in South Africa)
- Chairperson: Scientific Committee, Occupational Health in Southern Africa
(A 5-day international policy and scientific conference)
- Member: Scientific Committee Pan African Congress on Occupational Health 97
- Member: Executive Committee, Health Information Centre and Workplace Information Group (trade union service organisations)
- Co-chair: Occupational Health and Safety Committee, Chief Directorate, Occupational Health
- Member: Medical Advisory Panel for Occupational Disease, COIDAct
- Member: Combined MBOD/NCOH Panel (for the certification of occupational respiratory diseases under the COIDAct)
- Member: Research Committee, National Centre for Occupational Health
- Founder member: Scientific Committee for Occupational Dermatoses, South African Society of Occupational Medicine
- Founder member: Board of Directors, SORDSA (a national surveillance programme for occupational and work-related respiratory disease)
- Member: Advisory board, Afrox Occupational Health Services
- Member: Technical Committee on Occupational Diseases, Department of

Labour.

Member: Planning Committee. World Health Organization Collaborating Centres in Occupational Health

Participant (keynote speaker or workshop facilitator): occupational health strategic planning summits, Eastern Province, North West Province and Northern Province.

Member: Review Committee and Scientific Committee University of Michigan/Fogarty International Centre Southern African Programme in Environmental and Occupational Health.

Member: Executive Committee School of Public Health, University of the Witwatersrand.

Member: Scientific Committees. EPICOH International Symposium Epidemiology in Occupational Health (over many years).

Member Executive Committee: ICOH Scientific Committee. Epidemiology in Occupational Health

Member: Department of Labour's Working Group for the Elimination of Silicosis (representing the Department of Health).

Temporary advisor to World Health Organization for 13th Session of the Joint ILO/WHO Committee on Occupational Health.

Co-Chairperson WHO Collaborating Centres' Intensive Partnership in Africa.

Chairperson: Medical Reviewing Authority for Occupational Diseases (a panel to assess objections to certification decisions in terms of ODMWAct).

Member: International Labour Organization technical meeting Revision of the ILO International Classification of Radiographs of Pneumoconiosis, Italy.

Member: International Advisory Board, Annals of Work Exposure and Health.

ACADEMIC ACTIVITIES

Reviewer for:

Journals

American Journal of Industrial Medicine

Annals of Occupational Hygiene

Annals of Work Exposure and Health

British Medical Journal – Open

BMC Public Health

Current Allergy and Clinical Immunology

Environmental Health

International Archives of Occupational and Environmental Health

International Journal of Tuberculosis and Lung Disease

Journal of Occupational Medicine and Toxicology

New Solutions: A Journal of Environmental and Occupational Health Policy

Occupational and Environmental Medicine

Occupational Health Southern Africa

South African Journal of Psychology

South African Journal of Science

Southern African Journal of Infectious Diseases

South African Medical Journal

Research protocols (excluding University of the Witwatersrand and NIOH)
 Israel National Institute for Health Policy and Health Services Research
 Health Research Council of New Zealand
 Fogarty International Center, USA
 National Research Foundation, South Africa
 Mine Health and Safety Council, South Africa
 Medical Research Council, South Africa

Opponent for PhD thesis

Opponent for PhD thesis at Karolinska Institutet, Stockholm, Sweden.

Supervisor: post graduate degrees to completion

Candidate for Member of the Faculty of Occupational Medicine (MFOM), Royal College of Physicians, UK
 PhD, University of the Witwatersrand x 5
 MMed, University of the Witwatersrand x 8
 MPH, University of the Witwatersrand x 25
 Research Report for the degree of Master of Family Medicine, University of the Witwatersrand
 MSc (Med), University of the Witwatersrand x 3
 External supervisor. International Internship for the World Health Organization.
 Occupational hygiene candidate.
 B Tech Research Report, Technikon Witwatersrand.

RESEARCH EXPERIENCE

Research experience in many study designs (case series, descriptive, case-control, cohort, cross-sectional) and in a broad range of topics (e.g. the pharmacokinetics of fluorspar, compensation, occupational asthma, mesothelioma, pneumoconiosis, occupational health services, occupational allergy, surveillance of occupational lung disease).

Experience includes managing large research projects (e.g. a multi-centred case-control study in five cities with investigation teams in each city, field surveys of hundreds of workers, a national surveillance programme).

Management of a large research programme. The NIOH frequently had over 50 active research projects. Head: Occupational Medicine and Epidemiology includes oversight of an epidemiology and surveillance section with PhD epidemiologists.

PUBLICATIONS

Peer-reviewed publications

- Zwi S, Ehrlich RI, Rees D, Zwi AB (1986). The pneumoconioses. *S Afr J Continuing Medical Education* 4:93-99.
- Rees D, Hilton A (1987). Compensation for disease in non-mining industry. *Nursing RSA* 2:45-47.
- Ehrlich RI, Rees D, Zwi AB (1988). Silicosis in non-mining industry on the Witwatersrand. *S Afr Med J* 73:704-708.
- Rees D (1988). Spirometry: test acceptability and reproducibility in a South African workplace. *Southern Afr J Epidemiol Infect* 3:5-8.
- Bateman ED, Louw SJ, Bowey FSB, Joubert JR, Rees D, Zwi S, Mets JT (1988). Occupational asthma - time for scheduling as a compensable disease. *S Afr Med J* 74:545-546.
- Rees D, Richards GA (1990). Domestic exposure to workplace hazards: a risk for hostel dwellers. *Southern Afr J Epidemiol Infect* 5:14-15.
- Rees D, Rama DBK, Yousefi V (1990). Fluoride in workplace air and in urine of workers concentrating fluorspar. *Am J Ind Med* 17:311-320.
- Rees D, Kielkowski D (1991). Dust and pneumoconiosis in the South African ceramic industry. *S Afr J Science* 87:493-495.
- Rees D, Cronje R, Du Toit RSJ (1992). Dust exposure and pneumoconiosis in a South African pottery. Part 1: Introduction, study objectives and dust exposure. *Brit J Ind Med* 49:459-464.
- Rees D, Steinberg M, Becker PJ, Solomon A (1992). Dust exposure and pneumoconiosis in a South African pottery. Part 2: Pneumoconiosis and factors influencing reading of radiological opacities. *Brit J Ind Med* 49:465-471.
- Rees D, du Toit RSJ, Rendall REG, van Sittert GCH, Rama DGK (1992). Tremolite in Southern African chrysotile. *S Afr J Sci* 88:468-469.
- Colvin M, Myers J, Nell V, Rees D, Cronje R (1993). A cross-sectional survey of neurobehavioural effects of chronic solvent exposure on workers in a paint manufacturing plant. *Environmental Research* 63:122-132.
- Rees D, Soderlund N, Cronje R, Song E, Kielkowski D, Myers J (1993). Solvent exposure, alcohol consumption and liver injury in workers manufacturing paint. *Scand J Work Environ Health* 19:236-44.
- Nell V, Myers J, Colvin M, Rees D (1993). Neuropsychological assessment of organic solvent effects in South Africa: test selection, adaptation, scoring and validation issues. *Environmental Research* 63:301-318.
- Soderlund N, Rees D, Wasserfall C, Roodt L (1993). A survey of a small group of workers exposed to toluene diisocyanate (TDI). *S Afr Med J* 83:100-103.
- Weiner R, Rees D, Lunga FJP, Felix MA (1994). Third wave of asbestos-related disease from secondary use of asbestos: A case report from industry. *S Afr Med J* 84:158-160.
- Goodman KC, Rees D, Arkles RS (1994). Compensation for occupational lung disease in non-mining industry. *S Afr Med J* 84:160-166.
- Rees D, Weiner R (1994). Dust and pneumoconiosis in the South African foundry industry. *S Afr Med J* 84:851-855.
- Jaga K, Rees D, Kielkowski D, Rama DBK (1994). Cholinesterase activity in workers exposed to organophosphate pesticides at a coffee plantation. *J Occup Med* -

Singapore 6:13-19.

Calverley AE, Rees D, Dowdeswell RD, Linnett P, Kielkowski D (1995). Platinum salt sensitivity in refinery workers: incidence and effects of smoking and exposure. *Occup Environ Med* 52:661-666.

Rees D, Felix MA, Panter C, Weiner R, Roodt L (1995). Occupational asthma in South Africa. *Occupational Health Southern Africa* 1:13-16.

Roodt L, Rees D (1995). Tests of sensitisation in occupational medicine practice: the soybean example. *S Afr Med J* 85:522-525.

Rees D, Hnizdo E (1995). A proposal for a South African surveillance system for occupational asthma - an invitation for comments. *Occupational Health Southern Africa* 1:14-16.

Rees D, Cantrell A (1995). No need for milk in the prevention of occupational illness. (Invited Opinion). *Occupational Health Southern Africa* 1:25.

Rees D (1995). Occupational asthma: seek and you shall find? A case report of occupational asthma induced by alpha-amylase. *South African Respiratory Journal* 1:22-23.

Rees D, Lowe R (1995). An infrastructure for occupational health services. *Occupational Health Southern Africa* 6:20-21.

White N, Ehrlich R, Rees D (1996). A guide to spirometry as applied to occupational health. *S Afr Med J* 86:807-813.

Lowe R, Rees D (1996). Occupational health nurses and occupational hygiene: an attitude study. *Amer Assoc Occup Health Nurses J* 44:288-293.

Rees D, Nelson G, Kielkowski D et al (1998). Respiratory health and immunological profile of poultry workers. *S Afr Med J* 88:1110-1117.

Rees D (1998). The new National Centre for Occupational Health. *Occupational Health Southern Africa* 4:32-35.

Stark JH, Rees D (1998). Occupational allergies: immunology, diagnosis and compensation. *Current Allergy and Clinical Immunology* 11:20-27.

Stark JH, Rees D (1998). Occupational allergies - an overview. *Specialist Medicine* 20:30-36.

Rees D, Goodman K, Fourie E et al. (1999). Asbestos exposure and mesothelioma in South Africa. *S Afr Med J* 89:627-34.

Rees D, Myers J, Goodman K et al. (1999). A case-control study of mesothelioma in South Africa. *Am J Ind Med* 35:213-222.

Calverley AE, Rees D, Dowdeswell RJ (1999). Allergy to complex salts of platinum in refinery workers: prospective evaluations of IgE and Phadiotop status. *Clinical and Experimental Allergy* 29:703-11.

Myers JE, Nell V, Colvin M, Rees D, Thompson ML (1999). Neuropsychological function in South African paint makers. *J Occup Environ Med* 11:1011-8.

Rees D (2000). The burden of occupational lung disease. *Occupational Health Southern Africa* 6:10-14. (Note: published with permission of the editors after modification of the version in South African Respiratory Journal.)

Rees D (2000). The burden of occupational lung disease. *South African Respiratory Journal* 6:18-25.

Rees D, Mansoor N (2000). Case report of occupational asthma due to onion. *Occupational Health Southern Africa* 6:29-30.

Kielkowski D, Nelson G, Rees D (2000). Risk of mesothelioma from exposure to crocidolite asbestos: a 1995 update of a South African mortality study. *Occup Environ Med* 57:563-567.

- Solomon A, Rees D, Felix M, Venter E (2000). Silicosis and tuberculosis: a proposed radiological classification of tuberculosis to accompany the ILO International Classification of Radiographs of Pneumoconioses. *Int J Occup Environ Health* 6:215-219.
- Esterhuizen TM, Hnizdo E, Rees D, Lalloo UG (2001). Setting the scene for SORDSA: the importance of occupational respiratory disease surveillance in South Africa (Editorial). *S Afr Med J* 91:498-499.
- Esterhuizen TM, Rees D, Hnizdo E, Lalloo UG, Kielkowski D, van Schalkwyk EM, White N, Smith F, Hoggins B, Curtis T (2001). Occupational respiratory disease in South Africa: results from SORDSA (1997-1999). *S Afr Med J* 91:502-508.
- Esterhuizen TM, Hnizdo E, Rees D (2001). Occurrence and causes of occupational asthma in South Africa: results from SORDSA's occupational asthma registry, 1997-1999. *S Afr Med J* 91:509-513.
- Hnizdo E, Esterhuizen TM, Rees D, Lalloo U (2001). Occupational asthma as identified by the surveillance of work-related and occupational respiratory diseases programme in South Africa. *Clinical and Experimental Allergy* 31:32-39.
- Rees D, Kielkowski D, Lowe R (2001). Occupational health indicators for South Africa. *Int J Occup Environ Health* 7:98-102.
- Rees D, Phillips JI, Garton E, Pooley FD (2001). Asbestos lung fibre concentrations in South African chrysotile mine workers. *Ann Occup Hyg* 45:473-477.
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- Solomon A, Rees D, Felix M, Venter E (2003). Silicosis and tuberculosis: A proposed radiographic classification of tuberculosis to accompany the ILO International Classification of Radiographs of Pneumoconioses. *Occupational Health Southern Africa* July/August:4-9.
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- Murray J, Rees D (2003). Tuberculosis and silicosis in South African gold mining. *OSH & Development* 5:2-9.
- Myers JE, Thompson ML, Ramushu S....Rees DJ (2003). The nervous system effects of occupational exposure on workers in a South African manganese smelter. *Neurotoxicology* 280:1-10.
- Myers JE, Thompson ML, Ramushu S....Rees DJ (2003). The utility of biological monitoring for manganese in ferroalloy smelter workers in South Africa. *Neurotoxicology* 281:1-9.
- Rees D, Bartie D, Fox F, Jeebhay M, Mansoor N (2005). Is smoking cessation stressed enough in the prevention of occupational allergy? *Occupational Health Southern Africa* March/April:18-21.
- Kgalamono A, Rees D, Kielkowski D, Solomon A. (2005). Asbestosis in the non-mining industry on the Witwatersrand, South Africa. *S Afr Med J* 95:47-51.
- Spies A, Rees D, Channa K, Semano M (2005). Hexamethylene Diisocyanate Exposure in Automotive Repair Shops During Spray-painting. *Conference paper*,

- International Occupational Hygiene Association (IOHA)*. Saioh.org/IOHA 2005/Proceedings/papers. Paper R2-3:1-7.
- Rees D (2006). Silicosis elimination in South Africa. *Occupational Health Southern Africa* January/February 8-15.
- Sawry S, Rees D, Kielkowski D (2006). Occupational respiratory diseases in South Africa – results for non-mining industries from SORDSA, 2000-2003. *Supplementary to Occupational Health Southern Africa* March/April:S3-S8.
- Kielkowski D, Sawry S, Rees D (2006). Occupational disease surveillance: the way forward. *Occupational Health Southern Africa* March/April:S1-S2.
- Rees D, Ross MH (2006). South Africa's National Institute for Occupational Health: from phthisis to occupational health and back again. *Occupational Health Southern Africa* September/October:5-7.
- Bartie C, Calverley AE, Rees D (2006). Sensitisation to maize in the wet-milling industry. *Current Allergy and Clinical Immunology* 19:138-141.
- Vallabh BK, Lutchman D, Rees D (2007). Family practitioners' perceptions of, knowledge about and use of peak flow meters in the Lenasia, Lenasia South and Soweto Community Health Clinics. *SA Fam Pract* 49:15a-d.
- Phillips J, Renton K, Murray J, Garton E, Tylee BE, Rees D. (2007). Asbestos in and around Soweto dwellings with asbestos cement roofs. *Occupational Health Southern Africa* November/December:3-7.
- Naidoo R, Rees D (2007). Coal workers' pneumoconiosis and silicosis-the South African experience. *Chinese Journal of Industrial Hygiene and Occupational Diseases* (Zhonghua Lao Dong Wei Sheng Zhi Ye Bing Za Zhi) 25:187-189. [Chinese].
- Rees D, Murray J. Silica, silicosis and tuberculosis (2007). *Int J Tuberc Lung Dis* 11:474-484.
- Gresie-Bruisin DF, Kielkowski D, Baker A, Channa K, Rees D. (2007). Occupational exposure to ethylene oxide during pregnancy and association with adverse reproductive outcomes. *Int Arch Occup and Environ Health* 80:559-565.
- Gazi S, Rees D, Kgalamono S, Murray J (2008). A case of silicosis and progressive massive fibrosis with uncertain occupational exposure to silica. *Occupational Health Southern Africa* 14:16-18.
- Spies A, Rees D, Fourie AM, Wilson KS, Harris-Roberts J, Robinson E (2008). Inhalable dust and protein exposure in soybean processing plants. *Int J Occup and Environ Health* 14:225-230.
- Noguiera C, Rees D, Murray J (2009). Action on silica, silicosis and tuberculosis – the WAHSA experience in southern Africa. *Occupational Health Southern Africa* WHASA Special Issue: 27-33.
- Hogstedt C, Elgstrand K, Ryan A, Naidoo R, Rees D, Chitambo A, Kachima M, Kistnasamy B, London L, Ngowi V, Mattsson C, Petersson N (2009). The Work and Health Southern Africa (WAHSA) programme – overall experiences and the way forward. *Occupational Health Southern Africa* WHASA Special Issue: 2-6.
- Solomon A, Rees D (2010). Back to basics – the chest radiograph in silica associated tuberculosis. *Occupational Health Southern Africa* 16:25-27.
- Vekinis D, Kielkowski D, Bello B, Rees D (2010). Work-related fatalities in the South African construction industry: 2004 to 2006. *Occupational Health Southern Africa* 16:10-16.
- Rees D, Murray J, Nelson G, Sonnenberg P (2010). Oscillating migration and the epidemics of silicosis, tuberculosis, and HIV Infection in South African gold miners.

Am J Ind Med 53:398-404.

Swanepoel AJ, Rees D, Renton K, Swanepoel C, Kromhout H, Gardiner K (2010). Quartz exposure in agriculture: literature review and South African survey. *Ann Occup Hyg* 54:281-292.

Swanepoel AJ, Rees D (2011). Silica exposure in South African farming. *Occupational Health Southern Africa* 17:4-11.

Gottesfeld P, Murray J, Chadhas SS, Rees D (2011). Preventing tuberculosis with silica dust controls. *Int J Tuberc Lung Dis* 15:713-714.

Murray J, Davies T, Rees D (2011). Occupational lung disease in the South African mining industry: research and policy implementation. *J Public Health Policy* 32(51): 565-579.

Swanepoel AJ, Kromhout HA, Jinnah ZA, Portengen L, Renton K, Gardiner K, Rees D (2011). Respirable dust and quartz exposure from three South African farms with sandy, sandy loam, and clay soils. *Ann Occup Hyg* 55:634-643.

Harris-Roberts J, Robinson E, Fishwick D, Fourie A, Rees D, Curran A, Sen D, Barber C (2012). Sensitisation and symptoms associated with soybean exposure in processing plants in South Africa. *Am J Ind Med* 55:458-464.

Mirembo JCF, Swanepoel AJ, Rees D (2013). Respirable quartz exposure on two-medium sized farms in southern Mozambique. *Int J of Occup and Envir Health* 19:113-118.

Banyini AV, Rees D, Gilbert L (2013). "Even if I were to consent, my family will never agree": exploring autopsy services for posthumous occupational lung disease compensation among mineworkers in South Africa. *Glob Health Action* 6: 99-108.

De Jager P, Churchyard GJ, Ismail N, Kyaw KKK, Murray J, Nshuti L, Rees D, Reid A (2014). Clinical guidelines on isoniazid preventive therapy for patients with silicosis in South Africa. *Occupational Health Southern Africa* 20: 6-11.

Rose A, Rees D (2014). The impact of contact dermatitis: a case series from the National Institute for Occupational Health (NIOH). *Occupational Health Southern Africa* 20:11-17.

Rees D, Phillips JL (2014). Investigating the effectiveness of occupational health interventions in the workplace. *Occup Environ Med* 71:809-810.

Folscher LL, Goldstein LN, Wells M, Rees D (2015). Emergency department noise: mental activation or mental stress? *Emerg Med J* 32:468-473.

Ehrlich R, Rees D (2015). Reforming miners' lung disease compensation in South Africa-long overdue but what are the option? *New Solutions: A Journal of Environmental and Occupational Health Policy*. DOI:10.1177/1048291115610434.

Phillips JI, Swanepoel AJ, Rees D (2016). Asbestos remains troublesome in South Africa after the ban. *Occupational Health Southern Africa* 22(4): 2-5.

Mizan GE, Rees D, Wilson K (2016). Reproductive health hazards in laboratory work. *Occupational Health Southern Africa* 22(4) 2-5.

De Jager P, Rees D, Kisting S, Kgalamono S, Ndaba M, Stacey N, Tugendhalt A, Hofman K (2017). Nudging for prevention in occupational health and safety in South Africa using fiscal policies. *New Solutions: A Journal of Environmental and Occupational Health Policy* DOI: 10.1177/1048291117710782.

Manganyi J, Wilson K, Rees D (2017). Quantitative respirator fit, face sizes, and determinants of fit in South African diagnostic laboratory respirator users. *Ann Work Expos Heal* 1-9 doi: 10.1093/annweh/wxx077.

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Ehrlich R, Murray J, Rees D (2018). Subradiological silicosis. *Am J Ind Med* 61:877-885.

Kootbodien T, Wilson K, Tlotleng N, Ntlebi V, Made F, Rees D, Naicker N (2018). Tuberculosis mortality by occupation in South Africa, 2011-2015. *Int J Res Public Health* 15 doi.org/10.3390/ijerph15122756.

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Chapters in books

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Rees D, Dias B (2000). Establishing exposure to a recognised cause in suspect cases of occupational asthma. *SORDSA News* 4:3-4.

“JM26”

Human Resources
Lee-Ann Samuel
Group Executive: People

01 April 2020
Mr J Mphahlele
General Secretary
AMCU
By E-mail: mpahlelejk@amcu.co.za

Dear Mr Mphahlele

UPDATE IN TERMS OF COVID19 GOVERNMENT INSTITUTED LOCK DOWN

Background

Following the State President's declaration of the National State of Disaster on 15 March 2020 and the subsequent announcement of a national lockdown from 27 March to 16 April 2020, the Implats Group supports the decisive action taken by the South African government to help flatten the curve of the COVID-19 infection rate. Implats is committed to contributing where it can to South Africa's socio-economic stability. During the national lockdown, Implats' primary focus is on protecting the lives and livelihoods of employees, service providers and communities by doing all it can to sustain the financial viability of its business and the national economies of the countries in which it operates.

Implats successfully ramped down all South African mining operations (Impala Rustenburg and Marula) and placed them on care and maintenance from Thursday, 26 March 2020. Essential care and maintenance services are continuing to ensure the integrity of key infrastructure and facilitate a safe start-up once operations are cleared to resume.

Ministerial Directives

The Minister distributed a paper titled “unpacking mineral and energy industries’ response in preparation for a nationwide lockdown” to the Minerals Council on 25 March, in which, it acknowledges that in some mining operations and processing plants a complete shutdown

will not be feasible, as a restart from scratch may be too costly. This would negatively affect security of supply, and therefore the economy as a whole and Department has adopted a risk-based approach, with worst-case scenario planning, and all companies have been requested to ensure that their business continuity plans are fit for purpose and guidelines have been provided to mining companies for the submission of applications to continue limited scale mining operations in order to protect infrastructure and to secure metal supply.

In line with South African government regulations (letter from the Minister is attached herewith), the Group has received authorisation to conduct limited smelting operations at Impala Rustenburg together with limited operations at its Springs refinery. This would allow some in-process inventory to be treated during the lockdown period under controlled conditions. The Group have also received authorisation to conduct limited underground ore transport and milling at its South African mining operations under agreed precautionary measures. This will assist in securing underground infrastructure during the lockdown period and significantly enhance our ability to safely resume operations after the lockdown period.

To this end, the company is currently mobilising employees to return to work in order to conduct limited mining activities during the lockdown period in line with the authorisations received from the Regulator. Your assistance in returning employees to work will be highly appreciated and will demonstrate an act of solidarity. We assure you that the company has put in place the required precautionary measures in respect of both health and safety for employees working during this period. The lives and livelihoods of our workers are of critically important to us.

We therefore firmly believe that the ability to continue limited mining and processing activities during the lockdown period will assist in the financial sustainability of the Company and in so doing it will protect the livelihoods of our workers and mitigate future job losses.

Post 21 day lockdown scenario

As you aware, the government-imposed lockdown is placing Implats under severe financial strain. Notwithstanding this, the Company took a decision to pay employees for this period. The Company will not be in a position to continue paying salaries if the lockdown is extended beyond the 21-day period and in the event that it does, from 17 April 2020 the no work-no pay principle will apply. This decision has not been taken lightly and is premised on concerns pertaining to the Company's cash flow position. Employees will be assisted to claim compensation from the UIF. Applying for annual leave or the encashment of leave during this period will not be allowed as this will also have an impact on the Company's cash flow.

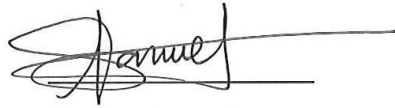
AMCU is a valued stakeholder and as mentioned at our meeting on 25 March 2020, the Company will make every effort to partner with you as it considers alternative measures to sustain the Company's cash flow. The Company is currently under significant pressure to ensure its solvency and liquidity is maintained and swift decision making during this time is essential. As such the Company may not always be in a position to consult before decisions pertaining to pay and work arrangements are taken, we endeavour to communicate all decisions in a timely manner and trust that these decisions will receive your support and understanding.

Conclusion

It is of vital importance that our start-up post the 21 day lockdown is done in a steadfast manner, bearing in mind, that additional screening will be required for COVID-19 and I urge you to please work with us to ensure all of our employees report for duty promptly on the morning of 17 April 2020.

The risks posed by COVID-19 to our lives and livelihoods will be an ever-present feature for some time to come. This crisis provides us with the opportunity to show the world again that we are **STRONGER TOGETHER**. The actions we take in the coming days, weeks and months will determine our future as a company, people and nation - let us work together in preserving our jobs and defeating the virus in the best way possible.

As always, we remain available for engagements that would further the interests of our employees and the sustainability of Implats.

A handwritten signature in black ink, appearing to read 'Lee-Ann Samuel', with a long horizontal line extending to the right.

Lee- Ann Samuel
Group Executive: People

“JM3”



Remarks by Mineral Resources and Energy

Minister, Mr. Gwede Mantashe (MP)

unpacking mineral and energy industries' response

in preparation for a nationwide lockdown,

25 March 2020

The Department of Mineral Resources and Energy yesterday met key stakeholders in the mining and energy industries to consolidate plans to deal with the spread of Covid-19. This is in support of the decisive action by the President of the Republic, HE Cyril Ramaphosa, to institute a nationwide lockdown from 23:59pm on Thursday 26th March 2020.

Working together with the South African Petroleum Industry Association, the Minerals Council SA and in consultation with labour unions, we have developed a framework through which these industries will implement the envisaged directives.

This is being done in order to safeguard the lives of people, while ensuring that the limited economic activity which will be undertaken during this period is supported.

In all our undertakings, we are considering the health, security as well as socio-economic impact of COVID-19 on these industries. The industries will be required to prioritise the health and safety of employees, suppliers, contractors and other relevant personnel.

While demand is expected to decline in the period ahead, as a result of restrictions on economic activity, security of energy supply remains critical. The supply of fuel to the relevant critical and essential services, as well as the supply of coal to Eskom for electricity supply and liquid fuels production, are critical during this period.

We are mindful that in some mining operations and processing plants a complete shutdown will not be feasible, as a restart from scratch may be too costly. This would negatively affect security of supply, and therefore the economy as a whole.

We are adopting a risk-based approach, with worst-case scenario planning, and all companies are required to ensure that their business continuity plans are fit for purpose.

Broadly, the following are measures being proposed for implementation:

MINING

- Mining operations will be scaled down significantly, particularly deep level mining, which is labour intensive.

- Essential services supporting the sector, including security and related infrastructure, maintenance, water pumping, refrigeration and ventilation will continue.
- Mines supplying coal to Eskom will remain in operation, albeit at reduced production levels.
- For exports, each case will be evaluated on its merits.
- Services being rendered to communities, such as the supply of water, will continue.
- Production in the gold, chrome, manganese and other sectors will be scaled down; while the processing of surface material in the PGMs sector will continue for the production of – among others medical products. This will allow smelters, which cannot be switched on and off abruptly, to remain operational.
- In order to contain the spread of COVID-19, travel will be restricted, in line with regulations to be outlined by the Minister of COGTA.
- The Minerals Council has committed to avail its health infrastructure - facilities and staff – during the lockdown, to support Government efforts.

ENERGY

The following activities are among those which will be considered an essential service:

- The production and distribution of petroleum products, including fuel, paraffin and liquefied petroleum gas. This entails shipping, manufacturing, terminals, distribution and retail.
- In the case of petroleum products, imports will be scaled back for the duration of the lockdown, as there will be excess capacity
- Regulatory oversight on nuclear facilities, as well as nuclear safeguard inspections.
- Production and supply of nuclear medicines and chemicals used at refineries.
- The Safari-1 research reactor and support technical services.

Engagements are ongoing between the sectors, the relevant government departments and state-owned entities. We will continue to provide updates as the situation unfolds.

Thank you.

“JM4”











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“JM5”



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News Room

Remarks by the Minister Mr Gwede Mantashe on the amended regulations, 16 April 2020

Date Published: 16 Apr 2020

f t G+

The Department of Mineral Resources and Energy has been in continuous engagements with key stakeholders in the Mining and Energy Industries to give effect to the direction by President Ramaphosa that government should -among others - “evaluate how we will embark on risk-adjusted measures that can enable a phased recovery of the economy...”.

In this regard we are proactively managing issues directly affecting mining and energy, in the interests of ensuring employee health and safety, as well as ensuring that these sectors we regulate are able to meet their obligations during this period, and are better positioned to ramp up production systematically once the lockdown has been lifted.

The following are the amendments to the National Disaster Management Act, specific to mining and energy:

ENERGY AND PETROLEUM PRODUCTS

To ensure the continuous supply of energy and petroleum products to society:

- a. collieries that supply Eskom shall continue to operate at full capacity; and
- b. refineries shall operate at full capacity to avoid shortage of fuel, and such operations shall include refineries, smelters, plants and furnaces

MINING OPERATIONS

Mining operations, excluding collieries that supply Eskom, shall be conducted at a reduced capacity of 50% during the period of the lockdown, and thereafter at increasing capacity as determined by the Cabinet member responsible for mineral resources and energy. We must maintain a risk-based approach.

The following conditions apply to the starting and increasing of capacity:

- a. A rigorous screening and testing program must be implemented as employees return to work;
- b. the mining industry must provide quarantine facilities for employees who have tested positive for the COVID-19;
- c. data collected during the screening and testing programme must be submitted to the relevant authority;
- d. mining companies must make arrangements to transport their South African employees from their homes to their respective areas of operations;
- e. in accordance with these Regulations and other regulations applicable in neighbouring SADC countries, workers from these neighbouring countries will be recalled at the end of lockdown in their respective countries.

The monitoring and impact assessment of seismicity through the Council for Geoscience must be intensified with immediate effect. This will assist in monitoring ground stability.

CONCLUSION

I urge all stakeholders in the industries we regulate to respect the Regulations, as well as the directives guiding how we must systematically phase in a ramp-up of production. This will assist us in protecting employees by containing the pandemic, and ensuring this critical sector of the economy is able to operate safely and optimally. Furthermore, employers and labour unions must engage on a regular basis, on matters directly affecting employees.

I thank you

Ends

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To promote and regulate the minerals and mining for transformation, growth, development and ensure that all South Africans derive sustainable benefit from the country's mineral wealth. The Department of Mineral Resources aim to formulate and implement policy to ensure optimum use of the country's mineral resources.

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mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

“JM6”

Private Bag X59, Pretoria, 0007, 70 Meintjies Street, Trevenna Campus, Sunnyside
Enquiries: mamabefu.modipa@dmr.gov.za, Tel: 012 444 3880

Dear Ms. Natasha Viljoen

Acting CEO: Anglo American Platinum Ltd

SUBJECT: Application for exemption

Email: natascha.viljoen@angloamerican.com

1. We acknowledge receipt of your letter dated 26 March 2020.
2. In line with the President's direction on intervention measures to prevent the risk of spread of COVID-19, I attach the following for your attention: -
 - Regulations in terms of section 27(2) of the Disaster Management Act 2002 issued by the Minister of Cooperative Governance and Traditional Affairs on the 25th March 2020,
 - Annexure C, Form I, to be signed by the Head of Institution
 - Ministerial Direction for the Mining and Energy Sectors issued by the Minister of Mineral Resources and Energy on the 25th March 2020
3. The Head of Institution is required in terms of Regulation 11B (2) and (3) to determine the essential services to be performed by his/her institution and must identify the essential staff who would perform those services.
4. You are required to adhere to the attached Regulation and Ministerial Direction and ensure that the health and safety the employees and any other person(s) are not compromised.
5. We hereby consent to operations continuing as set out in your letter subject to the attached regulations and directive from the Minister's speech.

Regards,

Adv Thabo Mokoena

Director General: Mineral Resources

Date: 27/03/2020

Honourable Minister Gwede Mantashe
 Department of Mineral Resources and Energy
 Private Bag X 59
 PRETORIA
 0001
 Email: vuyelwa.siyeka@dmr.gov.za
 cc: George.Lekorotsoana@dmr.gov.za
 Advocate Thabo Mokoena, Director General

“JM7”

26 March 2020

Dear Honourable Minister,

APPLICATION FOR EXEMPTION

As a company and citizen of South Africa, we are extremely proud of the decisive action the Honourable President of the Republic of South Africa has made and the calls for a 21-day national lockdown in order to contain the spread of COVID-19 and to ultimately flatten the curve of infections.

We have taken numerous steps in support of the President's call for help. For example, we have identified a number of our facilities that could be made available for quarantine and isolation wards, we are working through the Department of Health offering assistance to local clinics and will extend the current water provision to local communities. This community support against COVID-19 will continue as an essential service during the lockdown.

Whilst we will be placing our underground operations and associated processing facilities on care and maintenance, with plans in place for all the essential service to still run (e.g. pumping, ventilation, security and critical maintenance including at ACP etc), we have also been working on plans to ensure we still operate in a controlled manner and on a scaled back basis at Mogalakwena mine's surface operations and Polokwane smelter. Controls have been put in place and aligned to the Regulations to limit employee exposure to, and the risk of, COVID-19 spreading. Should we be able to successfully demonstrate in the coming week that we can operate on a scaled back basis, without exposing employees to additional COVID-19 risk, and with the permission of your office, we would open certain underground mining sections at Mototolo mine in particular as this is a mechanised mine.

Each member of staff and suppliers are important and critical to the operational continuity, albeit on a much-reduced basis, and will:

- be issued with an original letter, signed by the General Manager of that operation with multiple contact details that could be used by any official or law enforcement

officer to validate such person's purpose and authority to support an operation, essential function or service; and

- be issued with the necessary preventative and protective equipment to prevent the spread of COVID-19 as well as follow instructions around certain preventative controls and social distancing protocols.

The key operations we herewith seek exemption for, and which are aligned with the Minister's proclamations and the Regulations, are as follows:

Operation	Reduced production and headcount	Rationale for reduced/continued operation
Mogalakwena mine including drilling and blasting	Reduced headcount by over 40% to drill, blast and move surface ore for processing on a reduced scale at the Mogalakwena North Concentrator.	To ensure a continued platinum group metals (PGMs) pipeline is available through the process. To ensure platinum is available to meet customer demands in particular in the medical sector where it is used in high end medical equipment, pacemakers and critical medication.
Mototolo mine	Based on a comprehensive health and safety risk assessment process that will be followed, Mototolo mechanised mine will commence operations on a scaled back basis. This operation will run at more than 50% (but no more than 80%) of normal complement and a final number will be advised pending the outcome of the risk assessment.	To ensure a continued platinum group metals (PGMs) pipeline is available through the process. To ensure that post lockdown, the company can start earning foreign reserves in the best interests of rebuilding the South African economy and National Treasury's interests by adding to the fiscus.

The surface operations we will continue to run as per the Regulations:

Operation	Reduced production and headcount	Rationale for reduced/continued operation
Mogalakwena mine run from surface stocks	Reduced headcount by 80% to move surface ore for processing on a reduced scale at the Mogalakwena North Concentrator.	To ensure a continued platinum group metals (PGMs) pipeline is available through the process. To ensure platinum is available to meet customer demands in particular in the medical sector where it is used in high end medical equipment, pacemakers and critical medication.
Polokwane smelter	Reduced headcount by 60% of normal smelting personnel to operate the Polokwane smelter at a smelting rate of 100t/day	
Anglo Converter Process (ACP)	This operation normally runs with a very lean team that allows for COVID-19 protocols to be adhered to. To ensure the safe	

Operation	Reduced production and headcount	Rationale for reduced/continued operation
	running of this operation does not allow for significant reduction but only operational and maintenance essential personnel will be on site during the lockdown.	
Base Metal and Precious metal Refineries	This operation normally runs with a very lean team that allows for COVID-19 protocols to be adhered to. To ensure the safe running of this operation does not allow for significant reduction but only operational and maintenance essential personnel will be on site during the lockdown.	

Aligned with the risk-based approach, our underground mines at Amandelbult and JV mines of Modikwa and Kroondal, will be placed on care and maintenance as of midnight of 26th March 2020. Consequently, our Mortimer and Waterfall Smelters will also be placed under care and maintenance. To note - this remains a risk to the future operation of these two smelters, but we have put measures in place to maintain the operational integrity of these as far as possible.

This plan is aimed at supporting government's approach to address the COVID-19 challenges, to protect the wellbeing of our employees and to protect the long-term viability of our assets. It allows for approximately 20% of our normal metal flow through the pipeline and enhances our ability to continue the payment of wages, in response to the President's request and to support our communities. We have committed and communicated the payment of salaries during this 21-day lockdown period to all our employees.

We are deeply grateful for the guidance and appreciation that your Departmental team, and in particular the Director General, has and continues to provide us. We will ensure that the actions above are consistent with your wishes and objectives.

Finally, I want to recognise that we have not had the opportunity to officially meet, but I am fully committed to ensure we do our part and collectively step out of this process stronger than ever and I look forward to meeting you in the near future.

Yours in health and safety,



Natasha Viljoen
Acting CEO
Anglo American Platinum Limited

“JM8”

George Kahn

From: Rajen Naidoo <NAIDOON@ukzn.ac.za>
Sent: Tuesday, 14 April 2020 16:16
To: George Kahn; 'David Rees'; Jim te Water Naude
Cc: 'rkahn@icon.co.za'; 'stewartP@unizulu.ac.za'; Richard Spoor
Subject: RE: DMRE Guiding Principles

Dear George and Colleagues,

Thanks for circulating this document, as I was unaware of its existence. Much to its credit, the National Department of Health has been very responsive to the epidemic and the crisis. In so doing, the NDoH has established a national structure, within which the Occupational Health Task Team is located. The latter consists of a number of Working Groups, including WGs for Training, PPE, Risk Assessment, Screening, Monitoring and Surveillance etc. Each of these have produced guideline documents for their respective areas. To date, much of the focus has been on the protection of the health of healthworkers, extending to those within the essential services. The focus has now shifted to those in industries that may become “unlocked”, beyond the essential services.

For the mining sector, this DMRE document is very superficial, and fails to appreciate the extent and complexities of the problem that workers in the industry are likely to face in the event of “unlocking”. There has to be a comprehensive assessment of risk at different points of exposure for the worker returning to work: this has been listed to some extent in the document, but fails to elaborate the necessary action and responsibility. Systems of monitoring workers at points of departure from living areas to entry into the workplaces, and in reverse at the end of the shift is critical, and must be spelled out in detail.

In addition to the responsibility of protecting employees within the “unlocked” sector, the primary (well resourced core) employer has to also take responsibility for the health of the supply chain – particularly if these are from SMME’s and underresourced employers. The same applies to the sector that provides transport to the workers from their point of departure (in the labour sending areas, if applicable): workers exposed to positive cases in transit or in commute are likely to affect large swathes of the shift if they are in close proximity over the shift. Thus protection of these underresourced supply chains are critical.

I think it serves no point in responding point-for-point on the DMRE Guidelines, suffice to say, a more meaningful strategy, a legally binding policy is necessary. “Unlock” permits (if such will ever exist) must be based on well defined criteria, adherence to a clear mine by mine SOP, which includes public health and occupational health principles.

Hope this is of some help.

Kind regards
 Rajen

From: George Kahn [mailto:George@rsinc.co.za]
Sent: 14 April 2020 13:20
To: 'David Rees' <DavidR@nioh.ac.za>; Jim te Water Naude <doc@drjim.co.za>; Rajen Naidoo <NAIDOON@ukzn.ac.za>
Cc: 'rkahn@icon.co.za' <rkahn@icon.co.za>; 'stewartP@unizulu.ac.za' <stewartP@unizulu.ac.za>; Richard Spoor <Richard@rsinc.co.za>
Subject: RE: DMRE Guiding Principles

Find attached an OCR version.

Kind regards,

George Kahn
Senior Associate

Cell: +27 (0) 82 851 6103
 Office: +27 (0) 13 751 1662

Richard Spoor Inc. Attorneys
White River Office
Unit M7, Moroccan Building, Bagdad Centre, R40, White River

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From: George Kahn
Sent: Tuesday, 14 April 2020 12:00
To: 'David Rees' <DavidR@nioh.ac.za>; Jim teWaterNaude <doc@drjim.co.za>; 'Rajen Naidoo' <naidoon@ukzn.ac.za>
Cc: rkahn@icon.co.za; stewartP@unizulu.ac.za; Richard Spoor <Richard@rsinc.co.za>
Subject: FW: DMRE Guiding Principles

Dear Professors and Doctors,

Please find enclosed the recently published guiding principles issued by the Chief Inspector of Mines, presumably in terms of section 9(3) of the MHSA, relating to the Covid-19 pandemic in mines.

The government has declared gold mining, gold refineries, coal mines and other “essential mines”, as an essential service exempt from the lockdown restrictions. The mines are busy ramping up for normal production. We understand that numerous mines are getting started today: Impala plat, de Beers and some manganese mines.

We are acting on behalf of a union that wants a standard relating for covid-19 measures, for all mines, to be implemented and made binding on them. The Minister can do this in terms of sections 76, 98(1) or even 23(4).

I am asking you whether you find this guideline sufficient for dealing with covid-19 in the mining sector, i.e. combined with its unique challenges for social distancing in a high velocity ventilated and enclosed environment, etc..

I have attached some work from Prof Stewart, copied in, on the RLDWP for you to bear in mind when considering this.

I would be grateful for any thoughts you might have.

The union is only concerned with the health and safety of its members and the greater community, they want to get back to work but also want their members’ family members not to be imperil. Ironically they are the ones demanding the department abide by the president’s orders and remarks, when the department is conducting business and holding physical meetings almost like normal.

Kind regards,

George Kahn
Senior Associate

Cell: +27 (0) 82 851 6103
 Office: +27 (0) 13 751 1662

Richard Spoor Inc. Attorneys**White River Office**Unit M7, Moroccan Building, Bagdad Centre, R40, White River

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From: Krister J van Rensburg <jvrensburgcp@amcu.co.za>
Sent: Tuesday, 14 April 2020 08:30
To: Richard Spoor <Richard@rsinc.co.za>; George Kahn <George@rsinc.co.za>
Subject: FW: DMRE Guiding Principles

Morning Richard and George

Please see attached received from our Health and Safety Coordinator this morning. It is the first time that I'm seeing it, and it was apparently only shared with the Mine Health and Safety Council (MHSC) over the weekend. I have asked him to send me a statement in this regard.

On a first reading, it seems very vague and basically devolves all powers to the individual mines. Still, it is an important document to inculcate in our further actions (legal and otherwise).

Your thoughts are welcome.

Best
 Krister

Krister J van Rensburg
 HOD: Organisational Development
 AMCU



www.amcu.co.za

From: Krister J van Rensburg
Sent: Tuesday, 14 April 2020 07:56
To: 'Feroze Boda' <feroze@iafrica.com>; Larry Dave <larrydave@law.co.za>; Robyn Oldfield <robyno@ldalaw.co.za>
Subject: DMRE Guiding Principles

As received via WhatsApp this morning, Colleagues...

Krister J van Rensburg
 HOD Organisational Development
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Comment of Mining Industry documents

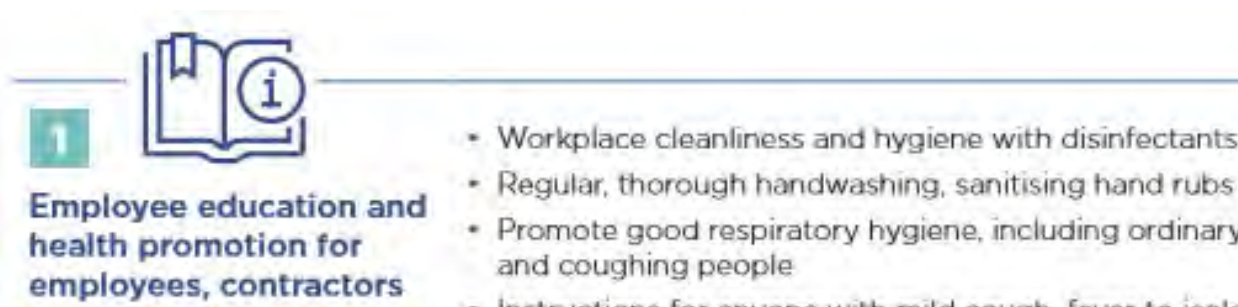
The National Institute for Occupational Health has not had the time to comment on these documents; the comments herein are, therefore, mine alone.

10-point plan

What is contained in this document is a standard set of interventions widely promoted, and therefore sensible in the main.

But, the 10 points are not really helpful to my mind because translating them into actual practical actions is difficult.

For example, Point 1:



1 

Employee education and health promotion for employees, contractors

- Workplace cleanliness and hygiene with disinfectants
- Regular, thorough handwashing, sanitising hand rubs
- Promote good respiratory hygiene, including ordinary and coughing people

How will the first three bullet points be achieved on a mine? What does workplace cleanliness mean on a coal mine? How will regular handwashing be achieved? What are ordinary masks?

Is the fourth bullet point both cough **and** fever or either? How will mine workers self isolate? There are many reasons why mine workers have coughs, including dust exposure. An instruction to self-isolate does not seem appropriate to me, unless it is accompanied by detailed guides, including consulting a health provider, with methods to do so.

There are also omissions.

An important one is screening, testing, self-isolation while being a person under investigation, and contact tracing. (Contact tracing will not be easy.)

Guiding principles

The Guiding principles are general approaches and responsibilities. They are useful in that they identify some issues to consider. But they rely heavily on the employer having the resources, competence, knowledge and will to give effect to the principles. Smaller enterprises are going to find this very difficult, but so will large ones without access to a range of experts.

The principles are also merely that, and to be a useful tool to reduce infections, details are needed that take account of the real situation in mining. 6.1. 2 is an example:

6.1.2 Employers

- a) Employers should ensure that employees have been assessed for COVID-19 exposure prior to entering the mine premises.
- b) The employer should have a workplace policy and procedure and workers are familiar with it.
- c) The policy should include medical management procedures to

I do not know what is meant by a) How does the employer assess employees for COVID-19 prior to entering the mine premises? How frequently is this to be done? c) is vague: what does “..medical management procedures to address COVID-19 in the workplace.” mean in practice?

6.1.2 is an example, the generalities of the principles apply to most of the principles.

More specifically, Annexure B makes some suggestions about reducing risk during spirometry. But I think routine spirometry should be halted until it becomes safer to do it.



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15.04.2020

George Kahn
Senior Associate
Richard Spoor Inc. Attorneys
White River

Dear George,

I have read the four documents sent to me (DMR guideline, Statement by the Minister, and Minerals Council SOP and 10 point schema), and the comments by Profs. Naidoo and Rees. My perspective is that of a specialist in occupational medicine and in public health.

I hope that these comments are useful.

Sincerely,

A handwritten signature in black ink, appearing to read 'R D Ehrlich', on a light-colored rectangular background.

Emeritus Prof. Rodney Ehrlich

General

1. I fully agree with the comments of Profs. Rees and Naidoo.
2. The focus here is to protect those involved, but there is potential society wide benefit besides continued production. With sufficient investment in COVID safety, re-opening the mines could serve as positive example of the country's return to work strategy and a guide to other sectors. This will require investment of effort and money and appropriate governance - alignment with national DOH strategy in this case, enforcement across all mines, and availability of monitoring information to all stakeholders. Jurisdictional tensions about policy priority will be a barrier.
3. The mines are no longer closed communities. The mines need to work closely with the DOH and provincial and local authorities. This is particularly in regard to realistic social distancing, screening, testing, contact tracing, isolation, quarantine and identification of vulnerable family members (e.g. over 65 years of age, HIV infected or established medical vulnerabilities). In other words, the local health system needs to be aware that there of the potential impact of miner movement between work and home. This is referred to in the Minerals Council SOP but should be expanded.
4. One public health strategy that has to be integrated and is not really dealt with in the documents is COVID testing. If the mining industry is regarded as a strategic sector for early return to operations, an arrangement with the DOH for access to tests and testing is needed. Similarly, the industry should work with the DOH on a protocol for random screening to assess the degree of missed cases.
5. The assumption needs to be made that there will be COVID cases and that some of these will be severe. The larger companies have the advantage of well established mine medical services, either company provided or via contractors, but provision would need to be made for smaller operations. How will this be done?

Chamber of Mines SOP (my numbering)

1. This document is comprehensive in scope and contains the necessary level of detail. Usefully, it includes items such as liaison with local health authorities, daily telephonic contact with workers "self-isolating" (more realistically, at home with others) and a register as per DOH guidelines.
2. The reference to "non-medical masks" is not specific enough. From information provided to me, mines should be using dust masks to the level of FFP2, which reportedly offer quite a high degree of protection against viral particles. This needs to be clarified.
3. The recommendation "Utilise a risk-based method to prioritise high-risk individuals (pre-existing occupational lung diseases, HIV with low CD4, non-compliant HIV patients and smokers), for more active interventions such as prophylaxis and individualised counselling" does not provide enough guidance.

The category of vulnerable employees needs to be defined and stratified into those that should not be in congregate settings, those requiring individualised medical surveillance while at work, and those just requiring counselling (e.g. smokers). Under current National Health protocols, HIV positive individuals with low CD4 counts are regarded as vulnerable to serious forms of COVID and by implication should not be in congregate settings. Similarly, this would apply to a miner with active TB (some evidence for COVID severity) or chronic silicotuberculosis (no evidence yet, but precautionary).

There document implies that HIV, TB and other health programmes are available and running, but this should be made explicit to ensure that these programmes are not compromised.

We don't yet understand the relationship between past TB or a positive tuberculin (immune) test and severity of COVID disease. Since most miners are tuberculin positive, this would not work as a risk rating indicator, but a close eye needs to be kept on the emerging science.

DMR Guiding Principles

These are relevant but rather general. The Minerals Council SOP should be taken as giving specific guidance and should be made enforceable. A few specific comments (numbering as per document):

3. Issues of concern

a) Accommodation is presumably understood to include rooming, toilets, eating and recreational facilities. All of these areas require environmental control, including ventilation and disinfection.

4. Guiding principles

b) Once a worker is COVID positive, everyone he/she comes into contact with will be exposed. In principle, this is everywhere on the mine premises.

d) Comprehensive HR policies are going to be needed on the various types of COVID related withdrawal and return to work.

5.2 Consideration should be given to temporarily suspending routine breathalyser testing unless effective IPC can be guaranteed. There is no reference to disposable mouthpieces. Breathalyser testing on suspicion of intoxication could be done at the medically supervised facility. The time and effort could be better redirected to COVID screening.

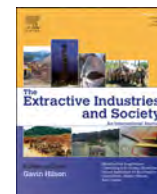
5.4 There are now a number of publicized protocols for protecting staff and patients in health facilities. These should be adapted for use in all mine medical activities – hospitals, mine medical centres and mobile and temporary facilities. Rescue protocols should factor in the possibility of COVID infected miners. Consideration should be given to postponing all routine spirometry.

5.6. The “personal hygiene programme” needs to be defined. All personal hygiene requires an enabling environment, e.g. provision of water and soap in as many places as possible and alcohol based hand sanitiser at sites where hand washing is not feasible



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Original article

Worker health and safety representatives on South African mines: A compassionate voice in the face of employer dominance and health complexity

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ABSTRACT

There is a triple disease burden on South African mines; occupational disease, communicable disease and non-communicable disease (NCD) are all of concern. The Mine Health and Safety Act No 29 of 1996 introduced for the first time, worker elected health and safety representatives (HSRs). Globally, although arrangements for HSRs are associated with better health and safety outcomes, employers increasingly dominate their activities. In-depth interviews ($n = 40$) were conducted with HSRs ($n = 10$) and OHS practitioners ($n = 15$) on four underground mines (gold, platinum and diamond) over 12 to 18 months in 2015–16, to understand how HSRs engaged with health issues, and how the employer responded. Activities across the triple disease burden were categorized as either employer or worker-led activities. While the employer supported HSRs working under their instruction, HSRs faced impediments to their statutory representative role. Employers took advantage of gaps in regulatory guidance. As a consequence of health complexity, and employer dominance, where HSRs acted independently, it was as the compassionate voice to workers. HSRs in middle-income countries take on a meaningfully different role to their counterparts in highly industrialised nations. There are implications, for both regulatory policy and trade union strategy.

1. Introduction

The occupational health of mineworkers has received attention globally. A recent scoping review of health in the extractive sector found that research has been dominated by quantitative health impact studies exploring direct toxic exposures experienced by workers (Brisbos et al., 2019). The complex social arrangements associated with health which affect workers, was identified as a significant research gap. Although the scoping review included a substantial number of studies from South Africa, few studies described health interventions (Brisbos et al., 2019). There is also scant attention paid to the statutory health interventions that support mineworker representation in middle- and low- income countries. Despite the progressive precedent set for worker representation in Africa, under the post-apartheid South African Mine Health and Safety Act (MHSA) No 29 of 1996 as amended (Republic of South Africa, 1996), very little has been written about representatives experience of this, and the relationship to health outcomes.

Worker representation in occupational health in many mining

contexts is a statutory health intervention. While it is very poorly described and understood in South Africa, arrangements for employee participation in occupational health and safety (OHS) through employee elected health and safety representatives (HSRs) are well established and defined in highly industrialised mining nations, found in Europe, New Zealand, Canada and Australia (Frick, 2013; Garcia et al., 2009; Harris et al., 2012; Hovden et al., 2008; Lewchuk, 2013; Walters et al., 2016a, 2016b). International Labour Organisation (ILO) Convention 176 Safety and Health in Mining, to which South Africa is a signatory, makes provision for HSRs too (ILO, 1995). In practice, worker elected or selected HSRs, and a joint employer/employee health and safety committee are established in the mine workplace as a mechanism for employer consultation with workers and, in some cases, collective decision making concerning OHS. Although the origins of these pluralist arrangements are frequently referenced to important government commissions held in the UK and in Canada in the 1970s (Robens (Robens, 1972) and Ham (Ham, 1976) respectively), the arrangements were, in fact, a product of much longer labor struggles for improvements to OHS (Storey, 2005; Walters, 1996). An outcome of

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this labor history was the “preferred model” for worker representation which ensured that trade union elected representatives formed joint arrangements with the employer. In this model HSRs are members of trade unions, who report into trade union structures and thus are directly associated with the worker collectivism underpinning the arrangements for labor relations (Nichols and Walters, 2009). In unionized workplaces in Europe, Australia and Canada, HSRs remain union appointments (Menéndez et al., 2008; Walters et al., 2018; Walters, Johnstone, et al., 2016). Similarly in South Africa, HSRs are appointed as instructed by the mine health and safety agreement signed by both the recognized trade unions on-site and the employer, as a requirement of the MHSA (Chapter 3).

Globally, it is established that the presence of joint arrangements between the employer and trade unions facilitated through the appointment HSRs is associated with positive OHS outcomes (Menéndez et al., 2008; Walters, 2006). In South Africa, a study of the implementation of the right to refuse dangerous work provided some evidence of the value of HSRs for OHS, because workers were more likely to withdraw from a hazardous workplace under the instruction of a HSR, than of their own volition (Coulson et al., 2019). In the last decade, however, there is a mounting concern that the neoliberalism of the globalized workplace threatens these arrangements, because of the growing dominance of the employer over the activities of HSRs, and the weakness of trade unions (Gunningham, 2008; James and Walters, 2002; Johnstone et al., 2005). Studies show that increasingly HSRs undertake activities that are in the interest of the smooth running of the employer OHS management system, such as supporting behavior-based safety approaches, rather than consulting with the employer about the OHS concerns of workers as intended under relevant legislation (Hovden et al., 2008; Nichols and Walters, 2009; Walters and Wadsworth, 2016; Wright and Spaven, 1999). Diminished labor presence in the workplace has been a significant contributor to employer dominance of the arrangements for worker representatives because increasingly HSRs operate autonomously of any collective power base (Loudoun and Walters, 2009).

Given the challenge to the “preferred model,” HSRs globally have adapted their strategies to remain effective in their role and are therefore not solely reliant on the muscle of trade unions to assert themselves in the face of the employer. Hall et al. (2006) argued that the mobilization of OHS knowledge was an effective adaptation to the decline of worker power related to the demise of organized labor (Hall et al., 2006, 2016). They found that HSRs who strategically applied technical and/or legal information that was sourced independently of the employer remained effective. These HSRs, described as “knowledge activists,” were distinguished by their commitment to autonomously seek information outside of the employer and their tactical use of information in their engagement of the employer. A New Zealand study found HSRs who had technical expertise could more readily engage at a strategic level with the employer because of their “specialist craft based expertise” (Harris et al., 2012: 492). Walters et al. (2016) found HSRs, although unionized on Australian coal mines, operated in a hostile industrial relations context and maintained their highly effective contribution to OHS performance only by careful application and detailed knowledge of the law (Walters, Johnstone, et al., 2016). Thus neoliberal realities have meant HSRs cannot solely rely on the collective power base central to the “preferred model,” but must adapt if their role is to have meaning. The application of technical and/or legal knowledge by HSRs is the leading example of this.

In contrast to other global contexts, where diminished trade union density (estimated around 20% (Ibsen and Tapia, 2017)) is argued to have created the conditions for employer dominance of HSRs, on South African mines union density is high, at 80% (Bhorat et al., 2014). However, this has not held back employer dominance. In South Africa, part-time or workplace HSRs on underground mines, working in localized workplaces, or HSRs addressing safety related issues, were found to take on the responsibilities and perspectives of the employer

(Coulson, 2018; Coulson and Christofides, 2019). For example, workplace representatives signed off on daily risk assessments to support safe production, especially at the start of a shift. Partiality towards management interests in the implementation of the right to refuse dangerous work on South African mines has also been reported (Coulson et al., 2019). We have argued that the extent to which the South African mine employer has dominated the safety activities of HSRs seems unprecedented (Coulson and Christofides, 2019). What is not known is whether employer dominance extends to activities undertaken by HSRs in the interests of health and if adaptations, such as the tactical use of information by HSRs, may have found expression in the South African mining context.

Employer dominance is not the only challenge that HSRs in South Africa may face when it comes to health. Health on South African mines has grown in complexity since the introduction of the MHSA under which worker HSRs are appointed. Under the MHSA, the definition of the word “health” covers all matters related to “occupational health at mines” (MHSA Section 102). Two successive, sector-wide voluntary 10 year OHS milestones, set in 2003, and again in 2014 (these are complementary to the MHSA), aimed to achieve significant improvements for priority occupational disease, namely occupational lung disease (especially silicosis associated with gold mining) and noise induced hearing loss (NIHL) (refer to Table 1). Progress towards these targets has been slow, and twenty years on from the promulgation of the Act, the regulator has only now reported improvements (Department of Mineral Resources, 2017). One contributory factor is the communicable disease burdens of human immuno-deficiency virus (HIV) and tuberculosis (TB) that have escalated rapidly in the period since the promulgation of the MHSA. The inclusion of HIV and TB prevalence and incidence targets as part of the 2014 OHS milestones is tangible evidence of this (refer to Table 1). The synergistic disease multiplier of silicosis, HIV and TB on South African gold mines has over the last two decades added enormously to the disease burden on mines (Campbell and Williams, 1999; Murray et al., 2011; Rees et al., 2010). Presently HIV and TB remain higher in all mining communities than in the general population (PHRU, 2017). The government National Strategic Plan for HIV, STI and TB 2016–22 identifies mineworkers as both a key and vulnerable population for HIV and TB programming (South African National AIDS Council, 2017). Non-communicable disease (NCD) in the mining workplace has grown in significance too. Estimates for NCD in the general population are that diabetes and hypertension are of mounting concern (Mayosi et al., 2009). The Minerals Council of South

Table 1

Mine Health and Safety Council (MHSC) OH milestones 2014–2024 for silicosis, NIHL and HIV and TB (Mine Health and Safety Council, 2015).

Milestones
Occupational health: Elimination of respiratory diseases To eliminate silicosis: By December 2024, 95% of all exposure measurement results will be below the milestone level for respirable crystalline silica of 0.05 mg/m³ Using present diagnostic techniques, no new cases of silicosis will occur amongst previously unexposed individuals Occupational health: Elimination of NIHL: Through the quietening of equipment: By December 2024 the total operational or process noise emitted by any equipment must not exceed a milestone sound pressure level of 107 dB(A). For the individual: By December 2016, no employee's Standard Threshold Shift (STS) will exceed 25 dB from the baseline when averaged at 2000, 3000 and 4000 Hz in one or both ears. Prevention of TB and HIV/AIDS Reduction of HIV & AIDS and new TB infections By December 2024 the TB incidence rate should be at or below the highest of either • The national TB incidence rate or • Reduction of new infections in line with the National Strategic Plan (NSP) • 100% of employees should be offered HIV counselling and testing (HCT) annually with all eligible employees linked to an ART programme as per the NSP, and • Promote access to prevention services on TB and HIV & AIDS treatment to families and immediate communities of affected employees

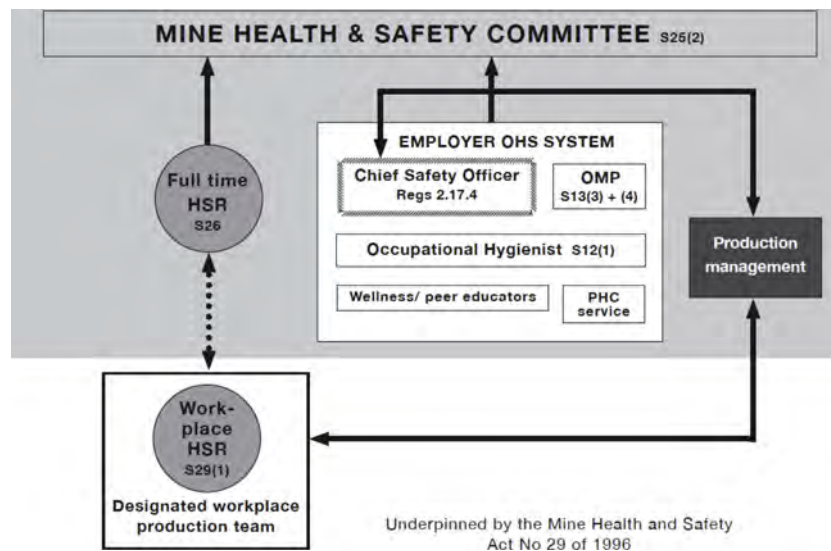


Fig. 1. Occupational health (OH) arrangements for HSRs and employer representatives on large mines.

Africa and the Department of Mineral Resources Mine Health and Safety Inspectorate (DMR-MHSI) have both reported increased incapacitation of mineworkers because of NCDs (Balfour-Kaipa, 2016; Department of Mineral Resources, 2017). Thus mineworkers face a triple disease burden on South African mines, characterized by occupational disease, communicable disease and the emergence of NCD.

Fig. 1 summarises the occupational health arrangements for HSRs and employer OHS representatives on large mines. The arrangements for HSRs are determined by the mine health and safety collective agreement. Two types of HSRs are elected by workers under the MHSA. Full-time HSRs (Section 26) exercise their powers across the whole mine site, and workplace (part-time) HSRs (Section 29 (1)) who share the same powers, but for a designated workplace (Section 25(1)) only. Together they make-up a two tier structure for worker representation. There are many more workplace HSRs than full-time HSRs, and no direct line of communication between them (as shown in Fig. 1 by a broken line).

Part-time/workplace HSRs have been found on a daily basis to facilitate the response of production teams to co-workers who were unwell and/or grappling with emotional distress, which appeared indicative of a high disease burden beyond that associated with occupational disease Coulson, 2018. What is not known is whether HSRs who work in a full-time capacity across the whole mine site extend their activities beyond their statutory role in occupational health too. This paper therefore considers the role of full-time HSRs only.

On election by employees, a full-time HSR relinquishes his or her job of employment for the period of appointment (usually 3 years). Between two and four full-time HSRs are commonly appointed per shaft. The rights and powers of a full-time HSR are in keeping with international and ILO precedents and include the right to represent workers on all matters related to OHS, to conduct workplace inspections and consult with the employer and the regulator (Section 30) (Refer to Table 2). All HSRs are protected from discrimination in their role (Section 83).

Statutory appointments under the MHSA frame the employer OHS management system too. The employer is required to appoint the services of an occupational medical practitioner (OMP) (Section 13 (3) & (4)), an occupational hygienist (Section 12(1)) and a chief safety officer (Minerals Act regulation 2.17.4). Although not a requirement of the MHSA, primary health care (PHC) services are commonly found on large mines; including screening and treatment for HIV and TB, diabetes, and hypertension (including in some instances a peer education service). Social workers (a non-statutory position) provide support/

wellness services to mineworkers for personal problems, for example for stress and substance use.

HSRs and employer representatives participate at the joint employer/employee mine health and safety committee which has similar powers to those granted to HSRs (Section 36). This statutory body (Section 25(2)) is weighted in favour of employee representatives with at minimum four employee representatives (selected from amongst the HSRs) and employer representatives equal to, or less than, the number of employee representatives (Section 34(2)(b)). Employer representatives on the committee can be expected to include those appointed into mandatory positions as per the MHSA, and individuals providing PHC and/or wellness services.

This paper explores several questions. Firstly, given the statutory role of HSRs under the MHSA is limited to occupational health, do full-time HSRs in practice respond to the full spectrum of health issues on South African mines? Secondly, is there evidence of employer dominance over the activities of full-time HSRs related to health, and how does the employer exert this dominance? And thirdly, what adaptations to the role of full-time HSRs are emerging given the complexity of health and/or in the event of employer dominance?

2. Methods

Descriptive case studies (Yin, 2014) were conducted at four underground mine sites between February 2015 and December 2016 to explore the practice of HSRs. The mine sites included two global senior mining companies and, two intermediate mining companies (ICMM, 2012), all were underground operations with more than 500 employees workers on site including gold (1 mine), platinum (2 mines) and diamond (1 mine). All mines had appointed full-time HSRs and had signed health and safety collective agreements.

Table 3 summarizes data collection at 4 sites. It outlines the number of participants, as well as their job category for each of the case study sites. In total, in-depth interviews ($n = 40$) of 60 min or more, using semi-structured guides, with full-time HSRs ($n = 10$) and employer OHS practitioners ($n = 15$) were conducted over 12–18 months. All interviews were on-site conducted in either English or a vernacular language. All interviews were transcribed. In-depth interviews ($n = 25$) were conducted with full-time HSRs who were interviewed up to four times over a maximum period of 18 months, each interview covering different aspects of their role as it relates to health (refer to Table 4). In total, 4 of the 10 full-time HSRs were interviewed 4 times. Reasons for attrition in repeat interviews included the withdrawal of permission for

Table 2

Section 30 rights and powers of HSRs under the MHSA No 29 of 1996 as amended.

Section of the MHSA	Description
Chapter 3:	
Section 30	Rights and powers of representatives: • Represent employees on all aspects of health and safety • Direct any employee to leave any working place if circumstances arise at the working place • Identify potential hazards and risks to health and safety • Make representation or recommendation to the employer or to a health and safety committee on any matter affecting the health and safety of employees • Inspect any relevant document which must be kept in terms of the MHSA • Request relevant information from an inspector • With the approval of the employer, be assisted by or consult an adviser or technical expert • Attend any meeting of a health and safety committee • Request an inspector to conduct an investigation • Participate in consultations on health and safety with the employer or an inspector • Participate in any health and safety inspection and in any internal health and safety audit • Inspect working places concerning health and safety • Investigate complaints by any employee relating to health and safety • Examine the causes of accidents in collaboration with the employer • Visit the site of an accident • Co-operate with the employer in the conducting of investigations and participate in inquiries • Perform functions agreed by the health and safety committee; or prescribed. NB. The rights and powers apply to health and safety representatives only in respect of the working places for which they are responsible

researchers to be on site (site 3), 1 full-time HSR died and was replaced by a new respondent (site 4), other full-time HSRs were enrolled into the study because of new elections (site 3) or respondents were not available for interview on the day of the research visit (site 2).

In-depth interviews with employer representatives including the occupational medicine specialist, nurse, occupational hygienist, senior safety management, management coordinator of HSRs (site 4 only) and coordinator of peer education/social worker explored their engagement with full-time HSRs. Observations of health and safety committee meetings were conducted at sites 1 and 2. Permission for observation was not granted at site 3. Health and safety committee meetings were not proceeding at site 4 at the time of the research/fieldwork.

Ethics clearance was provided by the Human Research Ethics Committee (HREC)-Medical, University of Witwatersrand, Clearance Certificate No. M140701. Participation in the study was voluntary and with informed consent. The analysis took the form of cross case synthesis because the data told a consistent story across all four sites (Yin, 2014). Transcribed data was thematically analyzed using Max QDA 12 using deductive and inductive codes. Two experienced qualitative researchers met to determine interrater reliability and to check for consensus and consistency.

Table 3

Number of study participants and data collection methods at 4 mine sites.

Case study sites	# respondent on Site 1 Gold	# respondent Site 2 Platinum	# respondent on Site 3 Diamond	# respondent on Site 4 Platinum	Total # respondents	Total # interviews on site
Start date	Feb-15	Jun-15	Mar-15	Jul-15		
End date	Feb-16	Dec-16	April-16	Sept-16		
Employer representatives						
Senior OHS manager	1		1	1	3	3
Chief safety officer		1			1	1
Management coordinator HSRs				1	1	1
OMP	1	1		1	2*	2
OH/PHC Nurse	1		1		2	2
Occupational hygienist	1	1	1	1	4	4
Coordinator peer education/ Social worker	1			1	2	2
Totals					15	15
HSRs						
Full-time HSRs	2	2	3***	3**	10	25
Non-participant observation at mine health & safety committee	1	1				2

* 1 OMP serviced both sites 2 and 4 **1 full-time HSR died during the course of the research (not an accident), ***2 new full-time HSRs were elected towards the end of the research period.

Table 5
Employer and worker-led activities of full-time HSRs.

Activities	Employer-led activities – acting under employer instructions	Worker-led activities – acting on worker initiated concerns
	• Hazard identification • Compliance with OHS procedure and PPE use • HIV, TB and NCD health promotion activities	• Raising worker OHS complaints with employer representatives • Attendance at the mine health and safety committee • Assisting individual worker requests for representation in meetings with supervisors • Health promotion, care and support activities

as communicable and NCDs. Concerns about occupational health included silicosis, NIHL, blasting fumes, heat exhaustion, eye problems, fatigue, skin disease, personal hygiene, pests and psychosocial issues such as stress. Communicable diseases included HIV and TB; and NCD, hypertension, diabetes and personal risk factors, such as the use of alcohol, cannabis and smoking.

Full-time HSRs across the four sites undertook both employer and worker-led activities for health (refer to Table 5). Activities categorized as employer-led were undertaken by full-time HSRs under the instruction of safety management. Although not a requirement of the MHSA, all full-time HSRs reported to the safety department, which facilitated employer access to them. Employer-led activities included participation in employer workplace hazard identification, the reinforcement of OHS procedure relevant to occupational health (including compliance with the use of personal protective equipment (PPE)); and communicable disease and NCD health promotion, such as giving educational talks and advice. Activities categorized as worker-led were worker initiated, and included the representation of individual and collective concerns to employer representatives, attendance at the mine health and safety committee and HSR-led care and support activities. Each of these activities is discussed under headings that correlate with those used in Table 5.

3.1. Employer-led activities

Whilst the MHSA provided the architecture for representation, legislation had not translated to the enactment of a role for HSRs in health that was autonomous of the employer. This was despite the role of HSRs in this study being underpinned by a signed health and safety collective agreement at all sites. Not one full-time HSR in this study resisted reporting in to the employer safety department, or saw any limitation with this, with respect to their role. Full-time HSRs demonstrated no appreciation of the effective functioning of HSRs found in other contexts where HSRs are directly supported by trade unions, such as on Queensland coal mines, in Australia (Walters, Johnstone, et al., 2016). Neither did they question their limited access to mine health professionals.

3.1.1. Hazard identification

The identification of potential hazards and risks through inspections conducted independently of the employer is an HSR function (Section 30 and 30(5)A of the MHSA), but HSRs lacked instruments and training to take exposure readings of common hazards such as dust, noise and heat. This was a common complaint of full-time HSRs. Instruments were issued to supervisors and production management only. Contrary to their autonomous role under law, full-time HSRs supported the inspection program of the safety department and relied on the safety department's checklists and sometimes escorted the occupational hygienist when he or she took readings. At site 1, the occupational hygienist described completing inspections in the workplace with full-time HSRs so that they can see that his/her readings are not "doctored," and to keep communication open. The only instance where HSRs were issued with instruments was at site 4, and only then to assist with the preparation of statutory employer investigation reports into NIHL (MHSA Section 11(5)).

"when the guy records now a level of greater than 5%, we have to do an investigation... so he [Full-time HSR] will go and visit that

guy....He will then interview that guy underground, and now we are getting real value because now he is taking a physical noise measurement at the winch, or at the rock-drill, or whatever he is operating, he is seeing whether the guy is making use of his hearing protection devices," (Occupational hygienist platinum site 4)

3.1.2. Compliance with OHS procedure

Behavior-based OHS approaches are commonplace in mining worldwide (Quinlan, 2014; Walters et al., 2016a) and on South African mines too (Hermanus et al., 2015). These approaches emphasize worker compliance with safety rules rather than more systemic approaches to safety management (Frick, 2011). Full-time HSRs consistently reinforced mine standards for the employer through regular communication with workers, such as the necessity for watering down of areas where people were working, and checked workers for the use of PPE, especially hearing protection devices. This role for full-time HSRs resonated with the role of workplace HSRs who were found to prioritise worker education and communication too (Coulson, 2018).

3.1.3. Health promotion activities

Mine medical staff were acutely aware of the challenge presented by communicable and NCD. They felt the HIV and TB reporting requirements (Department of Mineral Resources, 2019), sector wide milestones for HIV and TB reductions (refer to Table 1) (Mine Health and Safety Council, 2015), and particularly the new guidance for fitness to work (Leon, 1995; Republic of South Africa, 2016) put medical professionals under pressure to ensure workers did not go underground with undiagnosed disease. They passed on these pressures to the full-time HSRs, by involving them in health promotion activities; in a manner, that was reflective of HSR involvement in employer behavior-based safety approaches.

Respondents also had experience of unmanaged ill-health in the workplace and the consequences for workers who were forced to work when they were not well.

"There was this guy who had heart problems, he was a riggerthe guy even collapsed here at the mine because of the heart disease because the engineer told him that if he didn't come on the weekend, then never come back again to the mine. "(Full-time HSR platinum site 4)

Full-time HSRs, therefore, shared the concern of employer representatives about the necessity for the promotion of health messages related to HIV, TB and NCD, although education activities associated with HIV and TB were more commonplace. In turn, employer representatives relied on them to fill the communication gap between themselves and workers. The daily workplace safety/toolbox talks were regularly used by full-time HSRs to promote HIV and TB prevention, screening and treatment, alongside workplace OHS standards and procedure. At site 4, condoms were provided at the office of full-time HSRs, reinforcing their role in HIV prevention. Employer representatives were unanimous in their desire for HSRs to be more deeply involved in health promotion, and not just in the workplace but, with community outreach too.

"If he checks an oke [person/guy] coughing then he [HSR] needs to say to them that they need to go for TB screening ... they are meeting these guys [mineworkers] every day, and so when he [HSR] sees him in a tavern every day, he must say to him please when you are joling [having

fun] with the chicks [women] you need to use a condom.” (OMP platinum sites 2 and 4)

Mine medical staff saw the opportunity for HSRs to play a proactive role in NCD management too, if equipped with the correct information. In their opinion, HSRs could be relied upon to identify workers who were symptomatic, and to enable their timeously referral to the clinic.

3.2. Worker-led activities

An earlier study (2007) of the involvement of HSRs on South African gold mines in silicosis education found that HSRs were largely unaware of the advocacy and pro-active role envisaged for them under the MHSA (Mine Health and Safety Council, 2007). This study in part refutes this and shows that full-time HSRs were well aware of their representative role and undertook activities that were worker-led. This suggests that the sector wide training of HSRs in the last decade has helped strengthen HSRs understanding of their representative role (Mining Qualifications Authority, 2015). However, full-time HSRs seemed unaware of the role of the mine health and safety committee to represent workers (MHSA Section 36), including as it relates to health issues facing workers, and as a consequence had a limited understanding of the extent of their advocacy powers under the law.

3.2.1. Raising worker OHS complaints

“We visit all workplaces if we find anything wrong we go to the person in charge for resolving that matter sit them down and tell them to sort it out within 7 days.” (Full-time HSR gold site 1)

Employer representatives described complaints/concerns being brought to their attention by full-time HSRs. Complaints/concerns were also raised in meetings, mainly at the safety department. At site 2 (diamond), the occupational hygienist described sitting in on meetings of the safety department with full-time HSRs to ‘listen’ to what HSRs had to say. Common complaints raised by full-time HSRs were about excessive exposures (especially dust), about the physical workplace (such as waiting areas that were too exposed and uncomfortable), and difficulties with personal protective equipment. Sometimes complaints originated from workplace HSRs who had no success raising issues with supervisors, which through the full-time HSR, were then brought to the attention of employer representatives (especially the safety department).

Employer representatives described responding to the concerns of HSRs by conducting their own inspections. They were demanding of how concerns should be raised with them, expecting HSRs to be more informed about the nature of the hazard and asking good questions of them that indicated their interest,

“.....if he [full-time HSR] comes and sits down here and just says explain to me a little bit what is dermatitis, for instance, you know that means he’s interested, but if he comes here and sits here and says there’s dust at forty-five metre level, go sort it out and you say okay how much dust is there? What creates it? And he says I don’t know, he doesn’t add value.” (Occupational hygienist gold site 1)

The one full-time HSR who met with obvious success sourced information independently of the employer. In this instance an old structure for health care risk waste was replaced with a secured and compliant storage facility for the mine clinic.

“...he [full-time HSR] gave me the specs [health care risk waste storage] and he made me break the old one down and he got the contractor to be paid, he got the authorization and it was built because of him more than anybody else.” (OMP platinum sites 2 and 4)

This example appeared exceptional, and in most cases full-time HSRs were inadequately resourced to access information. Although full-time HSRs were allocated offices, they were provided with no cell phone airtime or access to the internet at any of the sites. Full-time

HSRs were also reliant on safety management rather than mine health professionals for information on all health matters including HIV, TB and NCD. Mine medical staff reported that sometimes full-time HSRs would come to their offices asking for more specific technical information, such as about TB treatment regimens. Mine health professionals were not involved in HSR training and did not know what was taught in the curriculum, but recognized that the role of HSRs would be strengthened if their knowledge was improved. Employer representatives stated full-time HSRs lacked confidence because of their inadequate knowledge.

3.2.2. Attendance of the mine health and safety committee meeting

In contravention of the MHSA, the observed health and safety committee meetings at two sites were heavily weighted in favour of the employer. At site 1, one HSR and 13 employer representatives were present. At site 2, three HSRs and 14 employer representatives were present. Both meetings were chaired by the senior safety manager. Full-time HSRs at all sites understood that they should attend the mine health and safety committee meeting. Comments by respondents showed that some types of worker concerns faced less opposition from the employer than others. Those who challenged the production imperative were met with employer hostility. In other cases, employer respondents took a paternalistic stance to worker complaints and felt the role of the committee was to assist HSRs to understand employer perspectives.

“My obstacles are that ... I am telling the mine overseer that his workers are knocking off late and there is no one paying for their overtime then he might tell me those things which are not nice like it is not my duty to tell him about how his workers work and knock off late.” (Full-time HSR platinum site 2)

“The fact that the safety rep is sitting in there [mine health and safety committee meeting], they are not getting victimized or shut down, we allow them to talk even if it’s something that is not on the agenda,..... sometimes it’s difficult from a managers side [as we managers know] why it’s working, but in their [HSRs] world it’s not working, so it’s our job to make sure they [HSRs] see what we also see...” (Safety manager diamond site 3)

At both the observed mine health and safety committee meetings, it was union shop stewards rather than the full-time HSRs who asked questions of the employer. This stands to reason given full-time HSRs all reported in on a daily basis to the safety department. Employer respondents were unable to identify any example of where a full-time HSR had added value to the mine health and safety committee and described their role as “passive.”

“Normally they [full-time HSRs] would just be passengers just sitting there and not voicing out unless someone tries and digs something out of them...” (Safety manager platinum site 2)

3.2.3. Representation of individuals in meetings of supervisors

Full-time HSRs assisted individual workers to raise health related issues with supervisors. Issues were varied and reflected the impact of the triple disease burden, but also the handling of health issues by the employer. For example, issues included the worker who had been denied leave over a long period; the worker who had been stabbed but, didn’t have a sick note; the worker with TB, but who was fearful of needing regular time off to collect medication; or workers who were fatigued. The reason behind these representations was ubiquitous; workers felt they would not be understood or listened to. Employer representatives concurred with this when it came to supervisors.

“It can happen that if he [worker] goes straight to his foreman maybe their communication is not good, and so he thought that if he comes with me [full-time HSR] then the foreman will understand what he is saying.” (Full-time HSR platinum site 2)

"I think the thing is that these guys [full-time HSRs] represent them and they [workers] can be listened to unlike if they go by themselves." (Nurse gold site 1)

3.2.4. Health promotion, care and support to workers

Full-time HSRs provided health promotion, care and support to workers about whom they were concerned. Health promotion activities would happen during union mass meetings or at meetings between HSRs and workers.

"Some [workers] mostly complain about their eyes or chest,...people used to smoke heavily and we used to talk to them when we were having our own meetings on surface with everyone that people must quit smoking because of the dangers related to smoking..." (Full-time HSR platinum site 4)

Full-time HSRs at all sites regularly visited mineworkers who had been admitted to hospital. Once workers returned from hospital, they described advising workers on a range of health supportive behaviors such as, *"drink a lot of water," "eat healthily," "take your treatment" and "visit the clinic regularly."* In keeping with the sentiments of mine medical staff described earlier, full-time HSRs did on occasion take action to ensure workers got treatment. One respondent (gold site 1), described parading [calling individuals to the mine surface] individuals in the interest of getting them medical attention, in this case for TB.

"I eventually took the initiativeI took out 2 or 3 people from the underground and took them directly to the hospital. It comes back that those people have got TB but they didn't want to admit that, but we counsel them and make them understand that this can be helped ..." (Full-time HSR gold site 1)

4. Discussion

This study explored the day-to-day activities undertaken by full-time HSRs in relation to health on underground mines. The findings of the study are indicative rather than conclusive and should be interpreted in the light of several limitations. As presented in the methods, not all full-time HSRs participated in all stages of the data collection as they were no longer in the position and/or available, and as a result we may have missed some of the dynamics over time. Also, meetings of the mine health and safety committee were observed on two mines, due to permission not being granted on one other mine. Our case comparison in this regard was therefore limited. Lastly, the data represents the views of full-time HSRs and the employer rather than that of the trade unions, and the position of major mining trade unions concerning health needs further exploration. Despite these limitations, the findings make some important observations about the role of full-time HSRs that is worthy of further examination through sector-wide quantitative and other studies.

4.1. The statutory role of HSRs in occupational health

This paper set out to answer three questions. The first concerned the statutory role of HSRs with respect to occupational health. The results showed that independent of whether the activities were worker- or employer-led, in both instances HSRs were involved with activities that went beyond their statutory role to address occupational health on mines (MHSA Section 102). The study showed that it was not only occupational disease that was shaping the role of worker representatives, but the very high communicable disease burden and the increasing NCD burden too. This finding is not reported in highly industrialised nations, where the infectious disease burden is low, and NCDs are better controlled in the general population. Thus worker representatives took on a meaningfully different role to their counterparts

in highly industrialised nations in relation to health.

A question then arising from this study, concerns the implications and appropriateness of full-time HSR's involvement in the response to communicable and NCD on mines. Given that health promotion activities are reliant on good communication in many instances, the employer took advantage of full-time HSRs. As a consequence full-time HSRs unwittingly compensated for the employers lack of investment in health, and employers went unchallenged with respect to germane requirements for peer education and workplace wellness programs that are well resourced. Currently the sector-wide training programme for HSRs does not include a specific module covering HIV, TB and NCDs given this is a non-statutory role for representatives, and therefore, HSRs are additionally ill-prepared for their health promotion role (Mining Qualifications Authority, 2015). The role of HSRs (workplace and full-time) in health, in the mining workplace requires supplementary regulatory guidance that goes beyond that offered under the current legislation, which may hold lessons for other middle- and low-income countries too.

4.2. Employer dominance of health related activities of HSRs

The second question concerned employer dominance of full-time HSRs related to health. HSRs undertook a substantial number of activities under the directive of the employer on a daily basis. The day-to-day reporting of full-time HSRs into the safety department profoundly influenced employer access to representatives, and facilitated employers dominating many of their daily activities including those for health. These activities de facto serviced the employer OHS management system, which resonated with global observations (Nichols and Walters, 2009; Ollé-Espuga et al., 2014; Wright and Spaven, 1999). While the employer supported an intensification of employer-led activities, representative activities that were worker-led faced impediments, or veiled opposition from the employer. This thwarted the capacity of full-time HSRs to act independently of the employer, in matters related to worker health.

Of particular note, full-time HSRs lacked resources necessary for their role. The inadequate provision of instruments to take basic exposure reading, and access to the internet, that would facilitate full-time HSRs acting independently of the employer, resulted in the employer being the sole source of expertise for full-time HSRs. Primarily the safety department, rather than mine health professionals, which can reasonably be surmised to contribute to gaps in HSR understanding of health priorities. Presently there is no guidance in the sector with respect to resourcing full-time HSRs as required under the MHSA (MHSA, Section 31(3)) which requires the employer to provide full-time HSRs with *"facilities and assistance necessary to perform their functions."* Mine employers took advantage of this. Given that all mine sites involved in this study were either global senior or intermediate mining companies (ICMM, 2012) full-time HSRs were seriously disadvantaged by being barred from commonplace technology. Employer representatives readily criticized full-time HSRs for their knowledge gaps about health priorities and their lack of confidence, but were shamefully under-resourcing representatives.

HSRs appreciation of the authority of the mine health and safety committee to act in the interests of workers was also absent, and therefore their advocacy role was blunted. The daily meetings of the safety department served to undermine the formal consultation of full-time HSRs with employer representatives at the mine health and safety committee. Of considerable concern was that the meetings of the mine health and safety committee at three sites were non-compliant with the MHSA, either because meetings were not constituted on a regular basis, or because meetings were biased by large numbers of employer representatives. This marginalised full-time HSRs further, and a sector wide study to understand the functioning of these statutory committees and the extent to which they have been able to act on behalf of worker concerns is an urgent priority.

4.3. Adaptations given employer dominance and health complexity

Thirdly, although full-time HSRs appeared passive in the face of demands from the employer, it would be incorrect to suggest that their present day role was only shaped by capitulating to employer demands. Full-time HSRs, in general, did not employ the knowledge-based strategies found in Canada (Hall et al., 2006, 2016), Australia (Walters, Johnstone, et al., 2016) and New Zealand (Harris et al., 2012). Only one full-time HSR (platinum site 4) described approaching employer representatives armed with detailed technical information sourced independently of the employer, which although an isolated finding spoke to Hall's "knowledge activism" (Hall et al., 2006, 2016). Contrary to a knowledge based strategy, where full-time HSRs across all four sites universally struck out independently of the employer, it was as the compassionate voice for workers. The willingness of full-time HSRs to accompany individual workers to make requests of intolerant supervisors, to take on the role of health promoter, even parading workers about whom they were concerned, and supporting workers both in and after hospital spoke to HSR compassion, rather than their legal mandate. The primary adaptation to the HSR role being to fill a gap which has arisen because of the absence of employer consideration and empathy for workers.

The dominance of the employer suggests that trade unions in South Africa have not developed a robust response to the health context at a site level. Full-time HSRs, whose role was underpinned by mine health and safety collective at each site, and who were therefore party to the "preferred model," were found to be intervening at the individual, rather than structural level. They primarily provided individual focused educational messages and support, largely as a result of their compassionate stance. Globally trade union activists have been hesitant to incorporate the complexity of contemporary health concerns into union strategy, preferring to focus on servicing individual members (Barry and Loudoun, 2006; Fairbrother, 1996; Loudoun and Walters, 2009). For example, the root cause for workplace stress often lies in the organisation of work (Walters, 2011). Weak trade union strategy was perpetuated in the South African context too. Structural analyses are pertinent for the health priorities on mines which prompted the empathetic actions of HSRs. HIV and TB, for example, owe their high prevalence and incidence to the structural inequities of apartheid mining (Rees et al., 2010). Many mineworkers today live in informal settlements that leave them vulnerable to infectious diseases (Chaskalson, 2016; Makgetla and Levin, 2016). Bullying and racist supervisors have a long history in South African mining (Shaw, 2010; Stewart and Nite, 2017). The sector-wide Culture Transformation Framework aims to change this culture and the elimination of discrimination is one of eleven pillars (Mine Health and Safety Council, 2011). Currently the sector, including trade unions, make no links between the individual actions of full-time HSRs and the sector-wide plan.

5. Conclusion

This study demonstrated the value of a qualitative, case study methodology to understand how worker representatives engaged with health. In the extractive industry, arrangements for worker representation are important and the ratification by six African countries of ILO C176 should be supported. The South African MHSA is aligned with ILO C176, but legislation alone has not ensured the enactment of a role for full-time HSRs that was aligned with the intent of the law. The combination of employer dominance and health complexity meant that where HSRs acted autonomously, it was as the compassionate voice to workers. Thus HSRs in middle- and low-income countries, like South Africa take on a meaningfully different role in relation to health to that of their counterparts in highly industrialised nations.

Legislation without supplementary guidance about the role of HSRs in health is inadequate and this is a valuable insight for other African states as they ratify ILO C176. In South Africa guidance is

recommended with respect to the activities of HSRs, their role in generalized communicable and NCD epidemics, their resourcing and the functioning of the joint employer/employee health and safety committee. In the absence of formal guidance, employers were found to exert significant influence over the activities of HSRs. The study found constraints to the enactment of the "preferred model" as it related to health because of employer dominance. Neither have trade unions provided full-time HSRs with strategic approaches to pressing health issues at the mine site.

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“JM12”

8 April 2020

Our ref: GS Jeffrey Mphahlele/CPJvR/Implementation of Covid-19 Measures (4)

Your ref: Hon Minister G Mantashe

Attention: Honourable Gwede Mantashe
Minister
Department of Mineral Resources and Energy

Copy: Adv Thabo Mokoena (Director-General, DMRE)
 Mr David Msiza (Chief Inspector of Mines)
 Mr Roger Baxter (Minerals Council)
 Mr Irvin Jim (National Union of Metalworkers of South Africa)
 Mr David Sipunzi (National Union of Mineworkers)
 Mr Gideon du Plessis (Solidarity)
 Mr Jacques Hugo (UASA)

By electronic transmission

Dear Honourable Minister

RE: IMPLEMENTATION OF COVID-19 MEASURES IN MINING AND ENERGY (4)

The SMSes received on 3 April 2020 and 6 April 2020 as well as our correspondences of 26 March 2020, 4 April 2020 and 6 April 2020 have combined reference.

As the Association of Mineworkers and Construction Union (AMCU), we hereby once again express our utter disappointment in the repeated non-response of your office to our correspondence. It is a sign of disrespect and a flouting of the international values of social dialogue, especially in the current trying times we are working in.

Nevertheless, as AMCU, we hereby make the following submissions:

1. The Covid-19 coronavirus is a novel virus, meaning that it constitutes a totally new health hazard than those that the mines are familiar with, such as Tuberculosis (TB), silicosis, and the like.

2. The risk of this new hazard is profound and includes the potential deaths of hundreds of thousands, if not millions, of people around the world. It also has a potentially devastating impact upon the economy and food security. Its risk is not limited to employees of the employer, and therefore the employer's liability is not entirely indemnified by section 35 of the Compensation of Occupational Injuries and Diseases Act ("COIDA").
3. AMCU believes that the Mine Health and Safety Act ("MHSA"), as amended, is the applicable legislation and legal framework to address the resultant concerns, in combination with the appropriate regulations promulgated under the Disaster Management Act ("DMA").
4. The MHSA codifies the right of workers to refuse dangerous work ("RRDW") and leave dangerous working place ("RLDWP") in section 23 of the Act.
5. As previously communicated to your office, the Minister must, in terms of section 23(4) of the MHSA gazette the minimum requirements for the procedures to exercise said rights. However, this has not transpired.
6. On 1 July 2016, the Chief Inspector of Mines issued guidelines on how mines must prepare their Codes of Practice ("COPs") on how to regulate these rights.
7. Key to these rights, is the central obligation of the employer to provide a safe and healthy working environment.
8. Employers are therefore required in terms of the MHSA to conduct regular and proper risk assessments by identifying possible hazards; assessing the risk posed by such hazards; recording such hazards and the risks as assessed; and making those records available for inspection by employees.
9. Employers must then, consult with the relevant health and safety structures on all measures, including the changing of the organisation or work and the design of safe systems of work, necessary to eliminate any recorded risk; control the risk at its source; minimise the risk; and, insofar as the risk remains: provide for the necessary Personal Protective Equipment (PPE) at the cost of the employer; and establish a monitoring mechanism to gauge the risk posed to employees.
10. Employers must then, as far as "reasonably practicable", implement these measures accordingly.
11. It is important to note that employers must not only mitigate the risks posed to their employees, but also the risks posed by hazards to their family members and members of the communities to which they belong.

12. The last important step in terms of the MHSA is for the employer to continuously review the efficiency and effectiveness of the aforementioned steps, in constant consultation with the relevant health and safety structures.
13. The Hazardous Biological Agents (“HBA”) Regulations, gazetted under the Occupational Health and Safety Act, as amended, is also applicable here.
14. The HBA regulations deem the Covid-19 virus a Group 4 HBA, meaning that the micro-organism is highly contagious, there is currently no effective prophylaxis or treatment against it, and it can be fatal in a significant number of infected persons.
15. The regulations therefore require the most serious interventions by the employer to safeguard their employees and affected non-employees. In terms of Annexure C to the regulations all body fluids, except sweat, are to be regarded as infectious in terms of droplet transmission.
16. The HBA regulations extend the duties of the employer to investigate not only confirmed Covid-19 cases, but also to investigate any possible accidental exposure to Covid-19 and record the incident in accordance with regulation 8 of the General Administrative Regulations.
17. These regulations further amplify the requirements of adequate personal protection equipment and facilities perhaps beyond the ordinary framework of the MHSA, requiring sterilisation, separate containers, demarcated areas with proper access controls and sealed colour coded containers for offsite cleaning.
18. Based on the above, AMCU hereby demands the following:
 - 18.1. The immediate establishment of a sectoral task team to implement and monitor compliance with the above legislation and regulations consisting of the Chief Inspector of Mines, the Minerals Council as well as the respective registered trade unions in the mining and energy sectors.
 - 18.2. This task team must include technical advisers from the National Institute of Health (NIOH) and the National Institute of Communicable Diseases (NICD), as well as the Minister of Health in order to comply with the requirements for the gazetting of potential regulations in terms of the MHSA.
 - 18.3. In terms of the Mineral and Petroleum Resources Development Act (MPRDA), community representatives must also be included in the task team where practicable and possible.

- 18.4. The main focus of this task team must be to develop an appropriate COP for companies in the sector, to be further customised and implemented at company level in consultation with the health and safety structures.
- 18.5. The principles encapsulated in this COP, must subsequently be gazetted as a regulation and a safety standard in the sector.
- 18.6. The task team must first do a national risk assessment, which can then be applied by the different companies.
- 18.7. In developing the COP, the task team must consider the following:
 - 18.7.1. The parameters of the new hazard (Covid-19 coronavirus), including:
 - 18.7.1.1. Mechanism of transmission, i.e. droplet, waterborne, airborne, and mouth, skin, nose, eyes, open wounds, and the like.
 - 18.7.1.2. Symptoms and screening, with focus on asymptomatic problem cases, i.e. medication-masked, lag phase, supercarriers, and the like.
 - 18.7.1.3. Complications and their chances, with focus on vulnerable and non-vulnerable groups, i.e. diabetics, pregnant, over 60, pneumoconiosis, cancer, vaccinations, and the like.
 - 18.7.1.4. Available treatments, cures and lifespan of the Covid-19 in different environments, including an infected person.
 - 18.7.1.5. The relationship between poverty, poor infrastructure, townships, migrant labour, access to healthcare and the transmission and complications of the Covid-19.
 - 18.7.1.6. Classification of the Hazardous Biological Agent i.e. group I, II, III or IV.
 - 18.7.1.7. The extent of the risk to:
 - 18.7.1.7.1. Underground employees;
 - 18.7.1.7.2. Surface employees;
 - 18.7.1.7.3. Family of employees;
 - 18.7.1.7.4. Medical employees;

- 18.7.1.7.5. Family of medical employees;
 - 18.7.1.7.6. Outside contractors; and,
 - 18.7.1.7.7. The greater community.
- 18.7.2. Generic measures of eliminating the risk entirely, i.e. measures for the hostels in order to prevent spread to families and community (quarantine no-go zones around mine communities), avoid using workers with susceptibility to severe complications, and the like.
 - 18.7.3. Generic measures of dealing with the risk at the source, i.e. universal medical screening of returning workers, isolating any person with a confirmed case or quarantining a suspected case, roadblocks at border of quarantine no-go zones and change of drivers with vehicle shrub down, and the like.
 - 18.7.4. Generic measures of minimising the risk, that do not counterbalance the measures taken to mitigate other risks, i.e. dust diseases or explosions. Training and behaviour modification must be considered, including washing properly, non-contact greetings and not touching one's face.
 - 18.7.5. Standards of required and adequate PPE, i.e. N95 or similar masks that protect against viruses and dust, secured eye protection, hazmat suits, and their required minimum maintenance, i.e. sterilisation or sealed colour coded containers.
 - 18.7.6. Generic measures per commodity, per geographical location, per extraction method, where generic measures are not universal, i.e. underground and surface, longwall and pillar & column, rural and semi-urban, and the like.
 - 18.7.7. Any required generic standards that are or must be applicable, i.e. quarantine quarters, kind of language on notices, sanitizers, sterilisation, waste disposal, cleaning regimes, and the like.

- 18.7.8. Communications required to the Department of Minerals, Principal Inspector of Mines, Medical Inspector, Department of Health, NIOH and/or NICD, if any.
- 18.7.9. Communications required with employees and the nature and periods for these communications, i.e. hourly, daily, weekly, and the like, alerting them to the ongoing risks posed by the Covid-19, so that they may perform their duties diligently not to endanger any other person and to safeguard their right not to be exposed to a harmful environment.
- 18.7.10. The mechanism and parameters for a miner to satisfy the requirements for them exercising their right to RLDWP on the specific basis of an HBA, specifically Covid-19, in order to understand and appreciate when an objective danger arises.
- 18.7.11. Determination of whether a miner being diagnosed with Covid-19, after mining operations recommence, is an occupational disease in terms of section 65, read together with section 66 and Schedule 3, of the COIDA, and the proper reporting procedures, medical treatment and section 47 benefits, failing which the liability of the employer to the miner that contracted the Covid-19 while present at the workplace.
- 18.7.12. The transport and movement of mineworkers locally, provincially and across international borders, i.e. Lesotho, Mozambique, Botswana, and how to do so without undermining the quarantine efforts of SA and its neighbours.
- 18.7.13. The interpretation of what reasonably practicable measures means in the context of Covid-19 transmissions and potentially a significant number of deaths.
- 18.8. All mines must thereafter consider the recommendations/regulations resulting from this national task team, and individually adopt and adapt them to their situation, in consultation with their Chief Occupational Medical Officers – using the recommendations/regulations as a minimum baseline requirement. Their final document must be reviewed by the Chief

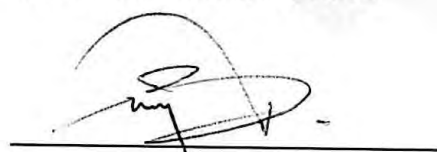
Inspector, the mine specifically and expressly drawing the Chief Inspector's attention to deviations from the national recommendations, either exceeding them or failing to achieve them, so that the Chief Inspector may quickly confirm or reject these health and safety operation documents.

- 18.9. It must further be accepted that in terms of all mines operating during the Covid-19 pandemic, their Covid-19 operative document must automatically include a provision that their Chief Occupational Medical Officer may shut down any part or all of the mine, on written notice to the mine manager, if he / she believes it is reasonable to do so in order to safeguard workers' health and/or protect the public health of the surrounding community from the Covid-19. The shut-down must remain in effect until the Chief Occupational Medical Officer, after consulting with the NIOH and registered trade unions, believes it is safe to reopen the closed part of the mine, the Minister of Health declares the pandemic over, or a court intervenes to open that part of the mine.
- 18.10. **Only once these national recommendations are published, the mines have submitted their individual Covid-19 measures to the Chief Inspector and the Chief Inspector has signed off on their acceptableness, then only may mineworkers be called back into operations.**

The above is submitted without prejudice and with full reservation of the rights of AMCU and its members.

We remain available for engagement via teleconference or other remote meeting technologies. Please feel free to contact me on 071-688-6707 for more information in this regard.

Yours in Social Justice



Jeffrey Mphahlele
General Secretary



Energy
Mineral Resources

“JM13”

Private Bag X59, Arcadia 0007, 70 Meintjies Street, Trevenna Campus, Sunnyside
Enquiries: Adv Thabo Mokoena, Tel: 012 444 3880, E-mail: Mamabefu.modipa@dmre.gov.za

The General Secretary

Association of Mineworkers and Construction Union (AMCU)

PO Box 920

River Crescent

Witbank

1035

Email: mabenaem@amcu.co.za

Dear Mr Jeffrey Mphahlele

RE: IMPLEMENTATION OF COVID-19 MEASURES IN MINING AND ENERGY (2)

The contents of your letter handed over to Ms Modipa in my office at our Pretoria offices on 05th April 2020 are noted with thanks. Please note the following response pertaining to concerns raised in your letter:

1. The mining companies given exemption was as a result of the meeting between the Minister of Mineral Resources and Energy, Mineral Council of South Africa and the labour unions where a framework was developed through which our industry will implement the envisaged directives this being done to safeguard the lives of people, while ensuring that the limited economic activity continues. We are mindful that in some mining operations and processing plants a complete shutdown will not be feasible, as a restart from scratch may be too costly. This would negatively affect security of supply, and therefore the economy as a whole. The following are all the operational mining and energy sections:

Mining

- Essential services supporting the sector, including security and related infrastructure, maintenance, water pumping, refrigeration and ventilation will continue.
- Mines supplying coal to Eskom will remain in operation, albeit at reduced production levels.
- For exports, each case will be evaluated on its merits.
- Services being rendered to communities, such as the supply of water, will continue.
- Production in the gold, chrome, manganese and other sectors will be scaled down, while the processing of surface material in the PGMs sector will continue for the production of – among others medical products. This will allow smelters, which cannot be switched on and off abruptly, to remain operational.
- In order to contain the spread of COVID-19, travel continues to be restricted, in line with regulations outlined by the Minister of COGTA.
- The Minerals Council has committed to avail its health infrastructure - facilities and staff – during the lockdown, to support Government efforts.

The list of exempted mining companies, please refer to Annexure A

Energy

- The following activities are among those which will be considered an essential service:
- The production and distribution of petroleum products, including fuel, paraffin and liquefied petroleum gas. This entails shipping, manufacturing, terminals, distribution and retail.
- In the case of petroleum products, imports will be scaled back for the duration of the lockdown, as there will be excess capacity
- Regulatory oversight on nuclear facilities, as well as nuclear safeguard inspections.

- Production and supply of nuclear medicines and chemicals used at refineries.
 - The Safari-1 research reactor and support technical services.
2. The Department of Mineral Resources and Energy received the reports from the unions concerning mining companies that are in contravention with COVID 19 regulation. Consequently, the department dispatched inspectors to investigate the matter as soon as possible and where such contraventions are seen, the necessary actions will be taken in line with the regulation by the state security cluster responsible for the regulation. In addition, the Mineral Council has committed to talk to its members and to work hand in hand with the department and unions to raise awareness of such incidents.
 3. The ramp up plan will be a phased in approach which will be phased over a certain period. In addition, this ramp up approach was discussed in a stakeholders meeting, which your organisation was invited. The meeting included the Mineral Council of South Africa and Unions.

Should you consider to be provided with any further information or clarity in respect of the content of this particular communique, you are kindly advised not to hesitate to contact the Director-General of the Department of Mineral Resources and Energy, Adv. T. Mokoena at 083 630 6527.

Trust you will find the above in order.

Regards,



Adv T Mokoena

Director General: Department of Mineral Resources and Energy

Date: 08/04/2020

LIST OF MINING COMPANIES GIVEN AN EXEMPTION TO OPERATE AT A MINIMUM SCALE. (Annexure “A”)

- 1.Zinoju Coal
- 2.Imerys Refractory Minerals
- 3.Fortitude Mining Holdings
- 4.Lengana Health Services
- 5.Willam Patrick Bower
- 6.Beryl Coal
- 7.Kernel Resources
- 8.South 32 SA coal holdings
- 9.MC mining
- 10.Andalusite Resources
- 11.Ultimate Goal Investments
- 12.Rexton Holdings
- 13.Siyanda Bakgatla Platinum Mine
- 14.Shiva Coal
- 15.Barplats Mine
- 16.Ringside Iron Ore
- 17.Proxor
- 18.Impala Platinum Mine (Rustenburg Operations)
- 19.Boeta Botha Mine
- 20.Amavava Mining Investments
- 21.South 32 SA Manganese
- 22.Eagle Granite
- 23.Tshipi e’ ntle Manganese
- 24.Misty Fall 111
- 25.Manganese Minerals
- 26.PGM Mining
- 27.Kumba Iron Ore

- 28. Bushveld Manganese
- 29. Assmang Limited
- 30. Petra Diamonds South Africa
- 31. Bushmansland Minerals
- 32. United Manganese of Kalahari
- 33. Kalagadi Manganese
- 34. Kudumane Manganese Resources
- 35. Sedibeng Iron Ore
- 36. Emang Manganese
- 37. Exxaro Limited
- 38. Impala Platinum Mines
- 39. Glencore Coal South Africa
- 40. Pan African Resources
- 41. Tharisa Mining
- 42. Long Thuan Investments
- 43. Pfuko Resources
- 44. Randyorska
- 45. Bayete Collieries
- 46. Afrimat
- 47. Siyanda Coal
- 48. Anglo Limited
- 49. Kangra Coal
- 50. Mashala Mining Group
- 51. Samancor
- 52. Anglo American Platinum
- 53. Thari Mining
- 54. Vaalbult Collieries
- 55. Zulu Anthracite Colliery
- 56. Gold Fields South Africa South Deep

- 57.Mafube Coal
- 58.Menar
- 59.Eland Platinum Mine
- 60.Royal Bafokeng Platinum
- 61.M3P Mining & Engineering
- 62.Nkomati Anthracite
- 63.Imerys Refractory Minerals
- 64.Kitso Manganese
- 65.FOSKOR
- 66.PPC Aggregate Quarries
- 67.WMA Africa
- 68.Future Coal
- 69.KBH Industrial
- 70.Sibanye Stillwater
- 71.Lidino Trading 514
- 72.DRD Gold
- 73.HCI Coal
- 74.Tronox Mineral Sands
- 75.Palabora Mining Company
- 76.Alexkor RMC Joint Venture
- 77.Masemanzi Mining Holdings
- 78.Xakwa Coal
- 79.Black Mountain Mining
- 80.Bauba Moeijelijk
- 81.Risenga Colliery
- 82.Black Wattle Colliery
- 83.Sepflour
- 84.Africoal SA
- 85.Jindal Mining

- 86.Marlin Holdings
- 87.Sasol Mining
- 88.Izimbiwa Coal
- 89.Ilima Coal
- 90.Universal Coal New Clydesdale
- 91.Sebilo Resources
- 92.Umsimbithi Mining
- 93.Cape Lime
- 94.Lurco Group
- 95.Tumelo Coal
- 96.Msobo Coal
- 97.Overlooked Colliery
- 98.Mbuyelo Coal-Westland Colliery
- 99.Sbuant
- 100.Element Six
- 101.De Beers Consolidated Mines
- 102.Nokeng Flouspar Mine
- 103.Marico Chrome Corporation
- 104.Ikwezi Mining
- 105.Siyanda Resources
- 106.Puckree
- 107.Mineral Sands Resources
- 108.Bosveld Mines
- 109.The East Side Coal Company
- 110.Silver Unicorn and Minerals
- 111.Village Main Reef
- 112.Black Rock Quarries
- 113.Richards Bay Mining
- 114.Northam Zondereinde

- 115. Bushveld Vametco
- 116. Black Wattle Colliery
- 117. Tendele Coal Mining
- 118. Gold One Limited
- 119. Harmony Gold Mining -Kalgold Operations
- 120. Manganese Metals Company
- 121. Idwala Industrial Holdings
- 122. Petmin Holdings
- 123. Marula Operations
- 124. Northam Booyseendal Platinum
- 125. Anglo Gold Ashanti
- 126. Buffalo Coal
- 127. UWR Management
- 128. Windsor SA
- 129. Jubilee Metals Group
- 130. Afarak South Africa
- 131. Tronox KZN
- 132. Semane Engineering Solutions

“JM14”

MARULA PLATINUM MEDICAL SERVICES

COVID 19 RESPONSE PLAN

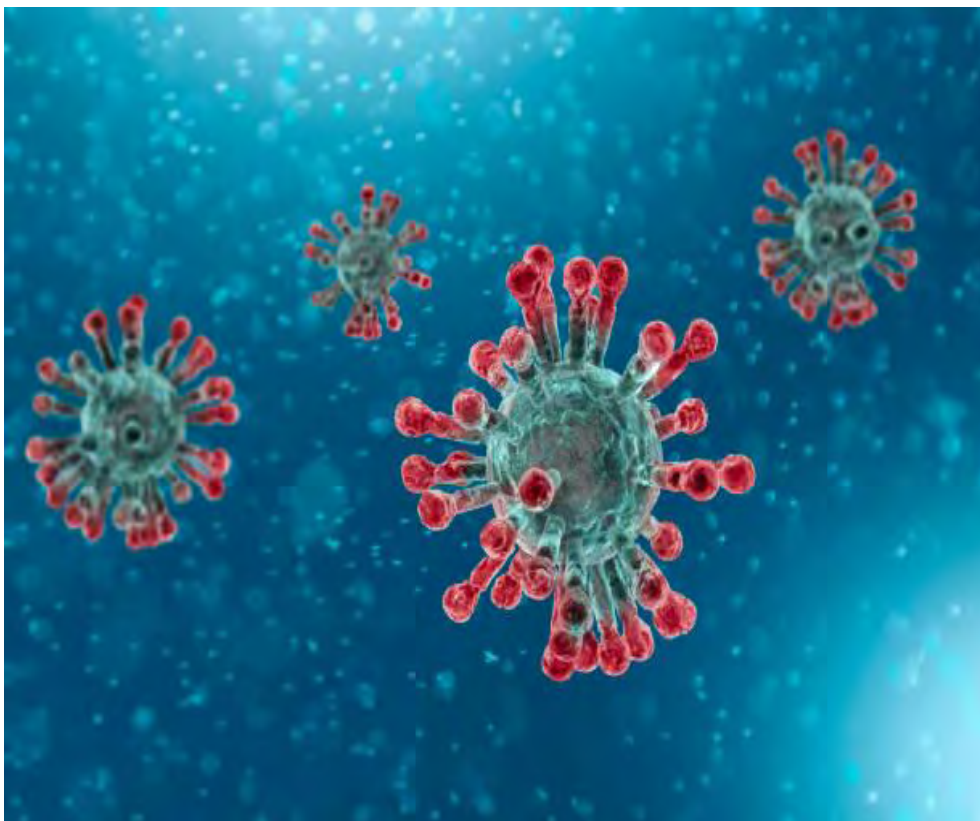


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1. PURPOSE OF THE DOCUMENT

This document outlines response plan to case/s of suspected novel coronavirus disease (2019-nCoV) in Marula Platinum mine. The document is prepared in line with Standard operating procedure for preparedness, detection and response to Coronavirus (2019-NCOV) dated 30 January 2020 of the National Department of Health Directorate: Communicable Disease.

2. THE BACKGROUND

On 31 December 2019, the World Health Organization (WHO) China Country Office was informed of cases of pneumonia of unknown cause detected in Wuhan City, Hubei Province of China. On 7 January 2020, the causative pathogen was identified as a novel coronavirus (2019-nCoV). The majority of these cases were linked to a seafood, poultry and live wildlife market in Wuhan City, suggesting that the novel coronavirus has a possible animal origin.

By 10 March 2020, 126 293 new cases were confirmed and 4633 deaths reported globally. The first case was confirmed in South Africa on the 05 March 2020 with 13 confirmed cases to date. The coronavirus COVID 19 is affecting 124 countries around the world and 1 international conveyance (Diamond Princess Cruise ship harboured in Yokohama, Japan).

Coronaviruses belong to a large family of viruses causing a wide spectrum of illness, ranging from very mild to severe. Some cause illness in people; numerous other coronaviruses circulate among animals, including camels and some bat species. Rarely, some animal coronaviruses can evolve to cause illness in people. Sometimes coronaviruses may develop the ability to spread from person to person, for example the Middle East respiratory syndrome coronavirus (MERS-CoV), first reported from Saudi Arabia in 2012, and the severe acute respiratory syndrome coronavirus (SARS-CoV), first recognized in China in 2002. However, the specific source of the virus is not yet known.

3. HOW DOES COVID-19 SPREAD?

The virus is spread via respiratory droplets that are produced when an infected person coughs or sneezes, similar to how flu and other respiratory diseases are spread. Persons with underlying illness and elderly people appear to be at greater risk of severe illness and complication.

Current estimates of the virus' incubation period range from two to 10 days.

4. CLINICAL PRESENTATION AND MANAGEMENT OF SUSPECTED CASES

The main clinical signs and symptoms are fever and cough with a few patients presenting with difficulty in breathing and bilateral infiltrates on chest X-rays. Lymphopaenia may be present. Treatment is supportive. The differential diagnosis for this syndrome is broad. Consider the possibility of influenza (Southern Hemisphere influenza season will begin in May or June) or bacterial pneumonia and manage accordingly.

5. CRITERIA FOR PERSON UNDER INVESTIGATION (PUI)

Persons with acute respiratory illness with sudden onset of at least one of the following: cough, sore throat, shortness of breath or fever [$\geq 38^{\circ}\text{C}$ (measured) or history of fever (subjective)] irrespective of admission status AND.

In the 14 days prior to onset of symptoms, met at least one of the following epidemiological criteria:

Were in close contact¹ with a confirmed² or probable³ case of SARS-CoV-2 infection

Had a history of travel to areas with local transmission of SARS-CoV-2; (NB Affected countries will change with time, consult the NICD website for current updates);

Worked in, or attended a health care facility where patients with SARS-CoV-2 infections were being treated

Admitted with severe pneumonia of unknown aetiology

6. MARULA PLATINUM MINE APPROACH

For the purposes of comprehensive approach and response planning to the disease, Implats (Medical) have internally categorised the possible spread into 6 stages to formulate appropriate responses for each stage. Operations are defined as shaft or work area.

Stages

Stage 0: International Spread
 No cases in Country of Operation (South Africa, Zimbabwe, Canada).

Stage I: Confirmed cases in Country of Operation
 I(a) Less than <100 confirmed cases
 I(b) greater than >100 confirmed cases

Stage II	Confirmed cases in Region (Province) of Operation
II(a)	Less than <100
II(b)	greater than >100
Stage III	Confirmed cases in Municipality of the Operation
III(a)	Less than <100
III(b)	greater than >100
Stage IV	Confirmed cases at an Implats Operation
IV(a)	Less than <10 (Note 10 cases)
IV(b)	greater than >10 -100 (Note 10 cases)
Stage V	Multiple confirmed cases at an Implats Operation
V(a)	>100 -1000
V(b)	>1000

Information gathering

Impala medical services senior team of managers as well as doctors are constantly gathering information from media, medical meetings and through liaison with the NICD (National institute of Communicable Diseases). It should be noted that as of 17 March 2020, 82 cases of 2019-nCoV have been reported in South Africa. The National Institute for Communicable Diseases (NICD) is closely monitoring the situation and will test patients that satisfy the criteria for suspected Covid-19 infection. Various stakeholders including medical personnel, Implats HSE, IMS infection control team and other local mine medical experts to share a common approach to the outbreak.

7. PREVENTATIVE MEASURES

Simple measures can be used to reduce the spread of the disease. These measures should be applied even now before the disease has been reported in Marula Platinum mine or surrounding areas. These measures will assist to reduce working days lost due to illness and stop or slow the spread of COVID-19 if it is presents at Marula Platinum mine

- Ensure workplaces are clean and hygienic: Surfaces (e.g. desks and tables) and objects (e.g. telephones, keyboards) need to be wiped with disinfectant regularly. Because contamination on surfaces touched by employees and customers is one of the main ways that COVID-19 spreads
- Promote regular and thorough hand-washing by employees, contractors and customers. Put sanitizing hand rub dispensers in prominent places around the workplace. Make sure these dispensers are regularly refilled
- Discourage contacts such as shaking hands, hugging or kissing. Posters promoting hand-washing should be displayed where appropriate. Make sure that staff,

contractors; underground employees have access to places where they can wash their hands with soap and water.

- Promote good respiratory hygiene in the workplace. Posters promoting respiratory hygiene, as well as communication measures such as offering guidance from IMS, Occupational health and HSE briefing at meetings use of electronic media. Ensure that face masks (ordinary face masks, not N95 face masks which will be reserved for Healthcare workers and HSE) and / or paper tissues are available at workplaces, for those who develop a runny nose or cough at work, along with closed bins for hygienically disposing them
- Influenza vaccination with Tetravalent vaccine and Vitamin C tablets will be offered to all at risk employees when the flu vaccine becomes available (approximately mid-March). All employees with mild flu symptoms will be issued with a prepared flu pack from the pharmacy containing an analgesic, decongestant, vitamin C and a cough mixture. Brief employees, contractors and customers that if COVID-19 starts spreading at Marula Platinum, anyone with even a mild cough or low-grade fever (37.3 C or more) detected at Medical Services, will be sent home on sick-leave with a pack of supportive medicine as well as advisory instructions should complications arise.
- Reduce number of patients/ employees who may be at higher risk of serious illness (e.g. older employees and those with medical conditions such as HIV/AIDS, diabetes, heart and lung disease) to areas where COVID-19 is spreading such as not visiting the hospital.
- Employees who are on chronic medication for such conditions will be issued with 6 months medication to avoid them coming to hospital for medication

Personal Protective Equipment (PPE) usage:

Various types of PPE are required dependent on the level of exposure the individual is subjected to. Different types of masks will be used e.g. healthcare workers will be supplied with N95 masks as opposed to surgical masks that will be used for employees at the shafts. Medical personnel will require facial visors, surgical gloves, gowns when they must take medical swabs from the people under investigation. Symptomatic individuals who present at the health facility will be issued with surgical masks to prevent spread of germs.

Travel risk:

Contracting the COVID-19 infection during air travel or at travel destination. Quarantine at a transit airport or on return flight in the event of developing a temperature or cough from any cause while travelling. Quarantine periods can vary from 14 days to 21 days.

Unknowingly spreading the virus either through asymptomatic infection (as described) or through delayed symptoms.

Important Note: Restricting travel or quarantine of suspected cases is deemed by the WHO and health authorities to be an important defence in curbing the epidemic. Before travelling Implats business travellers must acquire the latest information on areas where COVID-19 is spreading, if travelling to such area should be briefed by healthcare professional on precautions. During travel usual preventative measure as discussed should be adopted.

Employees who have returned from an area where COVID-19 is spreading should monitor themselves for symptoms for 14 days and take their temperature twice a day. If they develop even a mild cough or low-grade fever (i.e. a temperature of 37.3 C or more) they should stay at home and self-isolate. This means avoiding close contact (one meter or nearer) with other people, including family members.

8. ISOLATION PROCEDURE FOR COVID -19 AT MARULA PLATINUM MINE

MEDICAL SERVICES

- Designated mobile unit to be secured
- Professional nurse and two Auxillary nurses will be assigned for COVID-19 suspects
- PHC and OHC will have a nurse for screening purposes, before any process can continue
- Daily health education will be conducted in both PHC and OHC

Screening of patients

- Questionnaire: A questionnaire will be administered at Marula Platinum Mine Medical Services entry points by a nurse to ascertain symptoms and travel history. (see annexure 1)
- Temperature screening: Thermal scanners will be used initially at Marula Platinum Mine Medical Services entry points and if there are more than 10 cases at Marula Platinum Mine thermal scanning at shafts may be commenced.
- Examination and swabs: Trained Healthcare workers (doctors and nurses) will be allocated isolation areas where examination and specimens will be taken in a manner prescribed by NICD and submitted to private laboratories. All patients will have Ampath requisition form and NICD form (Person Under investigation form) (Annexure 2) and contact tracing form (Annexure 3)
- Treatment: Symptomatic treatment will be issued. Standard pre-packed flu medication will be given to all mild cases and severe cases admitted.
- Isolation and quarantine: mild cases, who are discharged on sick leave, will be advised to self-isolate at home, treatment given as well as surgical masks.
- Standard precautions to be followed. Initially the severe cases requiring hospital treatment will be referred to Dilokong hospital or Mecklenburg hospital for admission, and further investigations.

9. BUSINESS TRAVEL RESTRICTIONS (04 MARCH 2020)

For Travel purposes, the area of operation extends to and includes place of residence.
Guidance:

Stage O/I: No travel to or through China

No travel to or through Countries with >1000 cases (WHO Data) *

Currently: Korea, Iran and Italy *

Stage II: No travel to or through any neighbouring country *

Limited business travel between provinces

Stage III: No travel to or through any neighbouring country *

Limited business travel between provinces and municipalities

Stage IV: No travel to other Implants Operations *

10. **PRECAUTIONS**

Travel precautions:

- Employees should always seek advice from medical/health professionals.
- Employees with underlying respiratory conditions (asthma, COPD) or employees who may be immune compromised (HIV, Chemotherapy, Immune suppressive treatment) are at higher risk and require extra special precautions.

Basic Precautions:

- Washing hands
- Coughing / sneezing into flexed elbow
- Close contact – avoid
- Contaminated surface or food – avoid

Basic Health:

- Immune Support eg Vitamin C early Influenza Vaccine early (will not prevent COVID-19, but will boost individual's immune system response)
- Face Masks:
- Although not recommended for general use by WHO and authorities, face masks In flight especially when sleeping or in areas of high congestion are recommended.

Early Medical assistance:

- If symptoms develop during or after travel seek immediate medical assistance.
- Importantly: disclose all travel and all close contacts to medical personnel

Travel Insurance:

- Verification must be provided prior to business travel and is highly recommended for private travel.

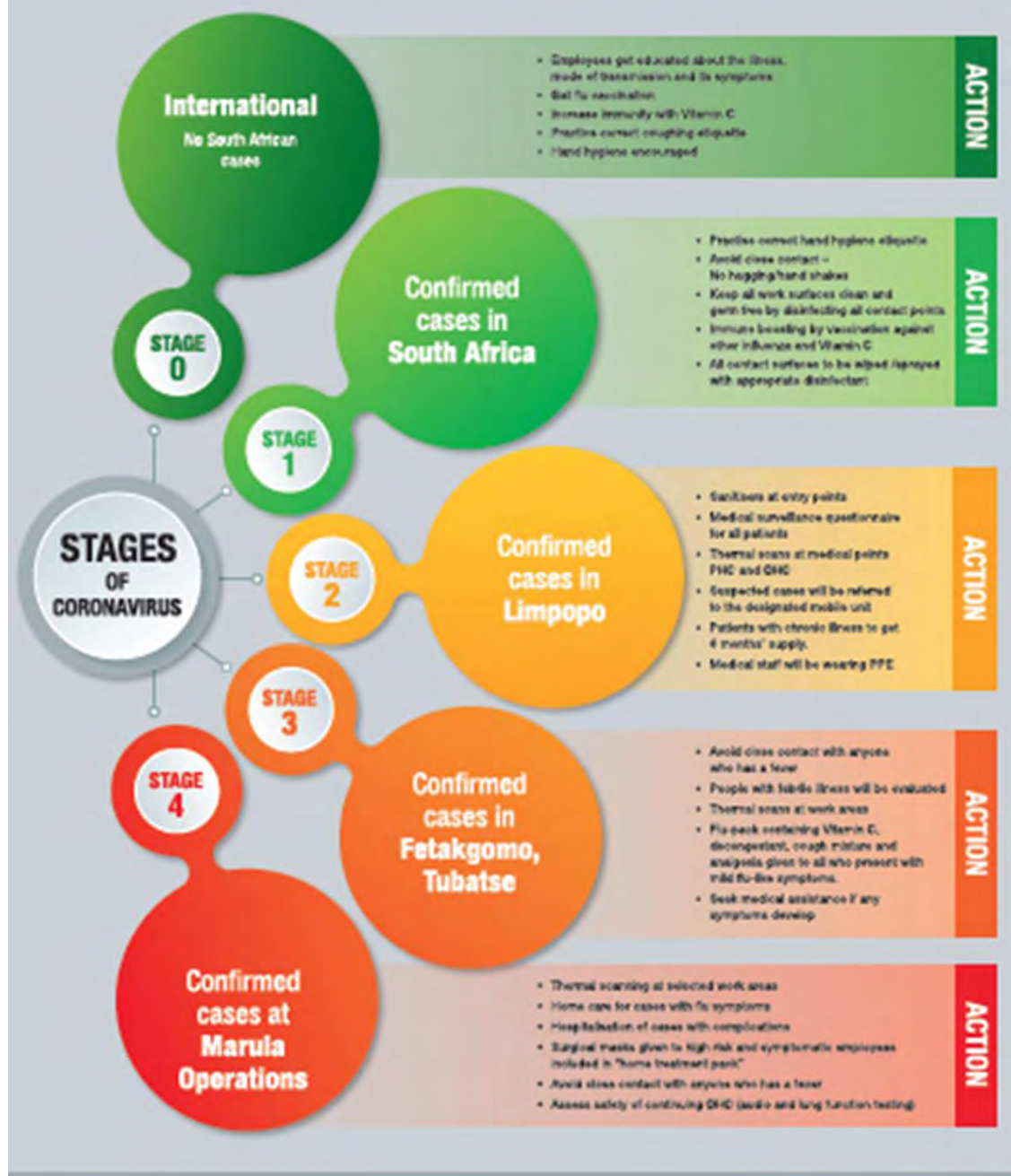
11. EMPLOYEE HEALTH PROMOTION PROGRAM

- Clean and hygienic workplaces Surfaces (e.g. desks and tables) and object (e.g. telephones, keyboards) need to be wiped with disinfectant regularly
- Promotion of regular and thorough hand-washing by employees, contractors
- Availability of sanitizers at strategic places
- Posters and videos on hand washing and respiratory hygiene to be displayed around the mine
- Communication measures such as offering guidance from occupational health and safety officers, briefings at meetings and information on the intranet to promote hand-washing

12. ACTION PLAN - Marula Medical Service Action Plan for COVID-19 per stages

Stage	Action	
Stage 0 International No SA cases	• Employees get educated the illness, mode of transmission and its symptoms. • Get flu vaccination • Increase immunity with Vitamin C • Practice correct coughing etiquette • Hand hygiene encouraged across	
Stage 1 South Africa	• Practise correct hand hygiene etiquette • Avoid close contact – No hugging/hand shakes • Keep all work surfaces clean and germ free by disinfecting all contact points • Immune boosting by Vaccination against other influenza and Vitamin C • All contact surfaces to be wiped /sprayed with appropriate disinfectant.	
Stage 2 Limpopo	• Sanitisers at entry points • Medical surveillance questionnaire for all patients. • Thermal scans at medical points PHC and OHC • Suspected cases will be referred to the designated mobile unit • Patients with chronic illness to get 6 months' supply. • Medical staff will be wearing PPE	
Stage 3 Fetakgomo Tubatse	• Avoid close contact with anyone who has a fever • People with febrile illness will be evaluated • Thermal scans at work areas • Flu-pack containing vitamin c, decongestant, cough mixture and analgesia given to all who present with mild flu-like symptoms. • Seek medical assistance if any symptoms develop	
Stage 4 Marula Operations	• Thermal scanning at selected work areas/ • Home care for cases with flu symptoms • Hospitalization of cases with complication • Surgical masks given to high risk and symptomatic employees included in "home treatment pack". • Avoid close contact with anyone who has a fever. • Assess safety of continuing OHC (Audio and Lung function testing)	

STAGES OF CORONAVIRUS Response Plan



COVID-19 IMMUNE BOOSTING PLAN

Marula Platinum Mine Medical Services in preparation for prevention of COVID-19, the stages will be followed in high risk priority order:

VITAMIN C PROGRAM

1. Medical staff and human resource (medical block)
2. Executive management
3. Union branch office bearer
4. High risk medical conditions including:
 - HIV/AIDS (292)
 - Cardiovascular Diseases namely Diabetes Mellitus (54) and Hypertension (360)
 - Respiratory conditions namely Asthma (5), Active Tuberculosis (12)
 - Elderly and pregnant employees
 - **Please refer to the table below**
5. Marula is in need of a **total 5000 Vitamin C pack of 20 tablets each**, to be distributed as per the table below (employees and contractors inclusive):

HIGH RISK MEDICAL CONDITIONS		
MEDICAL CONDITION	NUMBER OF EMPLOYEES	VITAMIN C STRENGTH
HIV/AIDS	292	EVERYBODY WILL RECEIVE 250MG (20 TABLETS/PACKET) OF VITAMIN C
DIABETES	54	
HYPERTENSION	360	
ASTHMA	05	
TUBERCULOSIS	12	
ELDERLY AND PREGNANT EMPLOYEES		
TOTAL REQUIREMENT FOR MARULA (EMPLOYEES AND CONTRACTORS)	5000 (received and distributed to all employees)	

Currently on a normal day shift, Primary Health Clinic (PHC) is operating with four (4) primary health professional nurses. PHC is expected to continue with its normal consultations. Parading of high risk employees will start with 50 people per day as from Monday 23 March 2020.

As from the 17 March 2020 all PHC consultations were given Vitamin C 250mg (20 tablets/packet), the current stock is approximately sitting at 1200 packets (20 tablets/packet), more stock expected to be delivered 20 March 2020.

FLU VACCINE PROGRAM

Given the history of poor response of employees for flu vaccination, first 100 vaccines quantity will be ordered and the vaccine uptake will guide the quantity to be ordered. The flu vaccine will only be given to Impala medical plan employees excluding dependents. Private medical aid employees and contractors will be advised to consult their preferred health practitioners.

Mild flu like symptoms will be expected as side effects of the flu vaccine and should not be confused with COVID-19. The employees will be notified through multiple communication channels when the vaccine is available.

MARULA REQUIREMENT: 500 Flu Vaccines

NB: Implementation process will be adjusted as the need arise

13. REFERENCE

<http://www.who.int/emergencies/disease/novel-coronavirus-2019/situation-reports/>

National institute for communicable diseases: www.nicd.ac.za

National health standard operating procedure for preparedness, detection and response to a coronavirus (2019-NCOV) outbreak in South Africa

Impala Medical Services Covid -19 Response Plan Marula Platinum Rustenburg Operations
(Version 1.3 9 March 2020)

14 ANNEXURE

Annexure 1 - Questionnaire

Annexure 2 - Ampath form and NICD form

Annexure 3 - Contact tracing form

Annexure 1: Covid-19 questionnaire

Sticker

Covid -19 Questionnaire

	Yes	No
1. Do you have a fever?		
2. Have you been coughing recently?		
3. Do you have shortness of breath?		
4. Have you visited an area with known cases of Coronavirus infection?		
5. Have you have contact with anyone who tested positive for Coronavirus?		

Please note:

If you have answered yes to 4 or 5 of these questions, you need to consult your healthcare provider for further evaluation immediately.

Thank you

IMS

Annexure 2. Ampath and Patient under investigation form. (Example – use original form from National Institute for communicable diseases)

Ampath form.

CRDM episode no:

CRDM lab no:

Trak no:

Date received:

 NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES Division of Non-Communicable Diseases Communicable Diseases		Centre for Respiratory Diseases and Meningitis Specimen Submission form	
Patient Information		Submitter Information (contact person for results)	
Identifier or Hospital no		Surname	
Surname		First name	
First name		Laboratory	
Age/Date of birth		City, Country	
Gender		Contact number (country code) + ()	
Facility/Hospital		Email address	
Specimen Details			
Specimen collection date:			
Specimen type:	☐ Combined NP/OP swab ☐ Nasopharyngeal (NP) aspirate ☐ Nasal swab ☐ Nasopharyngeal (NP) swab ☐ Bronchoalveolar lavage (BAL) ☐ Sputum ☐ Oropharyngeal (OP) swab ☐ Pleural fluid ☐ CSF ☐ Tracheal aspirate (TA) ☐ Blood culture ☐ Serum ☐ Whole blood ☐ Other, specify:		
Laboratory Test Details (please consult with CRDM if testing other than influenza, RSV or <i>B. pertussis</i> is required)			
Tests requested:	☐ Avian influenza ☐ Influenza / RSV ☐ MERS-CoV ☐ Neonatal sepsis* ☐ <i>Bordetella pertussis</i> ☐ <i>Legionella</i> spp. ☐ Atypical pneumonia* ☐ Bacterial meningitis* ☐ <i>C. diphtheriae</i> ☐ Respiratory panel (bacterial & viral)* ☐ Viral meningitis* ☐ Group A streptococcus ☐ Community-acquired pneumonia (bacteria)* ☐ Other, specify: ☐ Group B streptococcus ☐ Hospital-acquired pneumonia (bacteria)*		

* Refer to page 2 for
test panel details

Clinical Presentation and Outcome		Date of symptom onset: dd-mm-yyyy	
Clinical diagnosis: ☐ Acute rheumatic fever ☐ Meningococcal disease ☐ Lower respiratory tract infection ☐ Diphtheria ☐ Influenza-like illness ☐ Upper respiratory tract infection ☐ Pertussis ☐ Meningitis ☐ Other, specify: _____			
Symptoms: ☐ Fever ($\geq 38^{\circ}\text{C}$) ☐ Sore Throat ☐ Cough ☐ Headache ☐ Stiff neck ☐ Shortness of breath ☐ Vomiting ☐ Diarrhoea ☐ Paroxysmal cough/inspiratory whoop ☐ Apnoea ☐ Other, specify: _____ ☐ Unknown ☐ None			
Underlying Risk Factors: ☐ Asthma ☐ Chronic Lung Disease ☐ Diabetes ☐ HIV ☐ Pregnancy ☐ TB ☐ Heart Disease ☐ Other, specify: _____ ☐ Unknown ☐ None			
Hospitalisation: ☐ Outpatient ☐ Inpatient— not admitted ICU ☐ Inpatient— admitted to ICU ☐ Unknown		Outcome: ☐ Still hospitalised ☐ Survived ☐ Died ☐ Unknown	
Exposure History			
Did the patient travel in the 14 days prior to symptom onset? ☐ Yes ☐ No ☐ Unknown			
Area/Country travelled to:	Date of travel <u>to</u> this area	Date of travel <u>from</u> this area	
1.	dd-mm-yyyy	dd-mm-yyyy	
2.			
Did the patient have animal contact in the 14 days prior to symptom onset? ☐ Yes ☐ No ☐ Unknown			
Animal type		Date of exposure	Exposure type
☐ Swine ☐ Wildbirds ☐ Poultry (eg. chickens, ostrich, ducks) ☐ Other, specify: _____		dd-mm-yyyy	
Tel: +27 (0)11 555 0315 0317 NICD Hotline: 082 883 9920 Email: lindad@nicd.ac.za/orienkah@nicd.ac.za Please attach any relevant information			

CRDM Specimen Submission Form V2 Aug 2019

Date entered:

Initials:

CRDM episode no:

CRDM lab no:

Trak no:

Date received:

CRDM PCR Diagnostic Test Panels:

Test name:	Pathogens:
Respiratory panel	Viruses: Influenza A, influenza B, influenza C, rhinovirus, human coronavirus, parainfluenza virus, human bocavirus, human metapneumovirus, enterovirus, adenovirus, parechovirus, respiratory syncytial virus (RSV) Bacteria: <i>Mycoplasma pneumoniae</i>, <i>Chlamydia pneumoniae</i>, <i>Haemophilus influenzae</i>, <i>Haemophilus influenzae</i> type B, <i>Staphylococcus aureus</i>, <i>Klebsiella pneumoniae</i>, <i>Legionella spp.</i>, <i>Salmonella</i>, <i>Bordetella pertussis</i>, <i>Moraxella catarrhalis</i> Fungi: <i>Pneumocystis jiroveci</i>
Community-acquired pneumonia	<i>Streptococcus pneumoniae</i> , <i>Staphylococcus aureus</i> , <i>Haemophilus influenzae</i> , <i>Moraxella catarrhalis</i>
Hospital-acquired pneumonia	<i>Klebsiella pneumoniae</i> , <i>Pseudomonas aeruginosa</i>
Atypical pneumonia	<i>Mycoplasma pneumoniae</i> , <i>Chlamydia pneumoniae</i> , <i>Legionella spp.</i>
Neonatal sepsis	Group B <i>streptococcus</i> , <i>Listeria monocytogenes</i> , <i>Staphylococcus aureus</i> , <i>Chlamydia trachomatis</i> , <i>Ureaplasma urealyticum/parvum</i> , cytomegalovirus
Bacterial meningitis	<i>Streptococcus pneumoniae</i> , <i>Neisseria meningitidis</i> , <i>Haemophilus influenzae</i>
Viral meningitis	Adenovirus, cytomegalovirus, epstein barr virus, herpes simplex virus 1, herpes simplex virus 2, varicella zoster virus, enterovirus, parechovirus, human herpesvirus 6, human herpesvirus 7, parvovirus B19, mumps virus

Patient under investigation form. (Example – use original form from National Institute for communicable diseases)



health

Department:
Health
REPUBLIC OF SOUTH AFRICA

Final version 2_ 31JANUARY 2020
CENTRE FOR RESPIRATORY DISEASES AND MENINGITIS
OUTBREAK RESPONSE, DIVISION OF PUBLIC HEALTH SURVEILLANCE
AND RESPONSE

Internal use

CRDM PUI form no: _____

CRDM unique no: _____

Patient under investigation (PUI) form: Request for 2019-nCoV Testing

Please note that the original case investigation forms should be sent together with the specimen collection form
Furthermore, the completed case investigation form must be scanned and emailed to ncov@nicd.ac.za as detailed below
Tel: (+27)3866392/ (+27) 3866410 | Fax: (+27)11 8829979 | Hotline: 082 883 9920 | Queries / submission: ncov@nicd.ac.za

Today's date: DD/MM/YYYY Form completed by (Name, Surname): _____ Contact number(s): _____

Is this a:
 New clinical query ☐
 Contact of a known case ☐
 If contact of a known case, provide case details:
 Known case first name: _____
 Known case surname: _____
 Known case DOB: DD/MM/YYYY

Detected at point of entry? Y ☐ N ☐ Unkn ☐ If yes, date: DD/MM/YYYY Please specify the point of entry: _____

PATIENT DETAILS		DOCTOR'S DETAILS	
Patient hospital number (if available): _____		First name: _____	
First name: _____	Surname: _____	Surname: _____	
DOB: <u>DD/MM/YYYY</u>	Sex: Male ☐ Female ☐	Facility name: _____	
Residency: SA resident ☐ Non-SA resident ☐ (specify) _____		Contact number/s: _____	
Current residential Address ¹ : _____		_____	
_____		_____	
Patient's contact number(s): _____		Email address: _____	
Please include alternative number _____		_____	
Student ☐ Unemployed ☐ Working with animals ☐ Healthcare worker ☐ Other ☐		Health laboratory worker ☐ Facility name: _____ Specify _____	

NEXT OF KIN CONTACT DETAILS (alternative contact details)

First name: _____ Surname: _____
 Relationship to the patient: _____ Contact number(s): _____

CLINICAL PRESENTATION AND HISTORY

Date of symptom onset: _____ DD/MM/YYYY Date of current consultation/admission: _____ DD/MM/YYYY

Symptoms (tick all that apply):	Fever ($\geq 38^{\circ}\text{C}$)	☐	Sore throat	☐	Myalgia/body pains	☐
	History of fever	☐	Shortness of breath	☐	General weakness	☐
	Cough	☐	Nausea/vomiting	☐	Irritability/confusion	☐
	Chills	☐	Diarrhoea	☐	Other	☐ (specify if other) _____

DIAGNOSIS

- Did the patient have clinical or radiological evidence of pneumonia Y ☐ N ☐
- Were chest X-rays (CXR) done: Y ☐ N ☐ If yes, CXR Findings: _____
- Did the patient have clinical or radiological evidence of acute respiratory distress syndrome (ARDS)? Y ☐ N ☐
- Does the patient have another diagnosis/etiology for their respiratory illness? Y ☐ (specify) _____ N ☐ Unknown ☐

This section is a prerequisite for testing, therefore, please fill out the below section to the best of your ability.

Laboratory testing will be delayed if forms are incomplete or were filled in incorrectly.

In the 14 days before symptom onset did the patient (mark all that apply):

- Have close physical contact² with a known 2019-nCoV case? Y ☐ N ☐ Unkn ☐
- If the patient has been in a close physical contact with a known 2019-nCoV case, please indicate contact setting:
 Healthcare setting ☐ Family setting ☐ Work place ☐ Public transport setting ☐ Other ☐ Specify: _____
- Patient is a healthcare worker (HCW) who was exposed to patients with severe acute respiratory infections, unless another aetiology has been identified to explain the clinical presentation of the HCW? Y ☐ N ☐ Unkn ☐
- Is the patient part of a severe respiratory illness cluster of unknown aetiology that occurred within a 14-day period? Y ☐ N ☐ Unkn ☐
- Patient has visited a health care facility (as a patient or visitor) in a country where hospital-associated 2019-nCoV infections have been reported? Y ☐ N ☐ Unkn ☐ (If yes, complete travel section)
- Has the patient travelled to/from Wuhan City, (Hubei Province, China)³ or area/s with evidence of sustained 2019-nCoV human-to-human transmission, or a declared outbreak? Y ☐ N ☐ Unkn ☐ (If yes, complete travel section)

TRAVEL HISTORY

If patient traveled outside South Africa in the last 14-days, please complete section below for countries visited

Country and city or cities visited	Date of departure (travel to area)	Date of return (travel from area)
1.	DD/MM/YYYY	DD/MM/YYYY
2.	DD/MM/YYYY	DD/MM/YYYY

UNDERLYING FACTORS/CO-MORBID CONDITIONS

Asthma:	Y ☐ N ☐ Unkn ☐	Cardiac disease:	Y ☐ N ☐ Unkn ☐	Chronic kidney disease:	Y ☐ N ☐ Unkn ☐	Chronic liver disease:	Y ☐ N ☐ Unkn ☐
Chronic neurological/neuromuscular disease	Y ☐ N ☐ Unkn ☐	COPD/ Chronic pulmonary disease:	Y ☐ N ☐ Unkn ☐	Diabetes:	Y ☐ N ☐ Unkn ☐	Immuno-deficiency (excluding HIV)	Y ☐ N ☐ Unkn ☐
HIV:	Y ☐ N ☐ Unkn ☐	Is the patient virally suppressed?	Y ☐ N ☐ Unkn ☐	Recent viral load:	_____		
Obesity:	Y ☐ N ☐ Unkn ☐	Pregnancy:	Y ☐ N ☐ Unkn ☐	Trimester:	_____	Tuberculosis:	Y ☐ N ☐ Unkn ☐
Other:	Y ☐ N ☐ Unkn ☐	(specify):	_____				

TREATMENT/MANAGEMENT

Patient hospitalised: Y ☐ N ☐ Unkn ☐ Admitted to ICU: Y ☐ N ☐ Unkn ☐ Ventilation: Y ☐ N ☐ Unkn ☐ On ECMO: Y ☐ N ☐ Unkn ☐

Antibiotics: Y ☐ N ☐ Unkn ☐ if Yes, list: _____ Tamiflu/ other antiviral drugs: Y ☐ N ☐ Unkn ☐

White cell count total: _____ Differential neutrophils/lymphocytes%: _____

Has the patient been isolated at: Home ☐ Healthcare facility ☐ Not isolated ☐ Other ☐ Specify: _____

If patient has been isolated at home or at a healthcare facility, please provide date of isolation: DD/MM/YYYY

OUTCOME

Currently hospitalised: ☐

Discharged ☐ Discharge date: DD/MM/YYYY

Transferred ☐ Name of facility: _____

Died ☐ Date of death: DD/MM/YYYY

Other ☐ (specify) _____

¹If patient is a not a permanent resident, may you please provide their current residential address while residing in South Africa. ²*Close contact is defined as: healthcare-associated exposure, including providing direct care for nCoV patients, working with healthcare workers infected with nCoV, visiting patients or staying in the same close environment of a nCoV patient. This could also be defined as a healthcare worker working together in close proximity, sharing the same classroom environment with a nCoV patient, traveling together with nCoV patient in any kind of conveyance or living in the same household as a nCoV patient. ³ Check who website for areas/countries with reported 2019-nCoV cases <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports>. Please refer to <http://www.nicd.ac.za/> for most recent version of this document before use.

Once the PUI form has been completed, please complete the contact line list provided. Completed line list/s must be scanned and emailed to ncov@nicd.ac.za

Annexure 3: Contact list Questionnaire (Example – use original form from National Institute for communicable diseases)



COVID-19 CONTACT LINE LIST

Complete a contact line list for every person under investigation and every confirmed Coronavirus disease 2019 (COVID-19) case



Details of person under investigation/confirmed COVID-19 case

NICD Identifier: _____ Date Symptom Onset: _____

Surname: _____ Name: _____

Contact number: _____ Alternative number: _____

Travel (provide details of all: 7 days before onset) Travelled by: ☐ Bus ☐ Plane ☐

Air/bus line: _____ Flight/bus #: _____ Seat #: _____

Details of health official completing this form

Surname: _____ Name: _____

Role: _____ Facility name: _____

Email address: _____ Telephone number(s): _____

Today's date: _____

Details of contacts (With close contact¹ 7 days prior to symptom onset, or during symptomatic illness.)

	Surname	First name(s)	Sex (M/F)	Age (Y)	Relation to case ²	Date of last contact with case	Place of last contact with case (Provide name and address)	Residential address (for next month)	Phone number(s), separate by semicolon	HCW ³ (Y/N) if Yes, facility name
1										
2										
3										
4										
5										
6										
7										
8										

¹ Close contact: A person having had face-to-face contact (52 metres) or was in a closed environment with a COVID-19 case; this includes, amongst others, all persons living in the same household as a COVID-19 case and, people working closely in the same environment as a case. A healthcare worker or other person providing direct care for a COVID-19 case, while not wearing recommended personal protective equipment or PPE (e.g., gowns, gloves, NIOSH-certified disposable N95 respirator, eye protection). A contact in an aircraft sitting within two seats (in any direction) of the COVID-19 case, travel companions or persons providing care, and crew members serving in the section of the aircraft where the index case was seated. ² Close from: Spouse, Aunt, Child, Class mate, Colleague, Cousin, Father, Friend, Grandfather, Grandmother, Healthcare worker taking care of, Mother, Nephew, Niece, Other relative, Uncle. ³ Healthcare worker.

Page 1 of 2

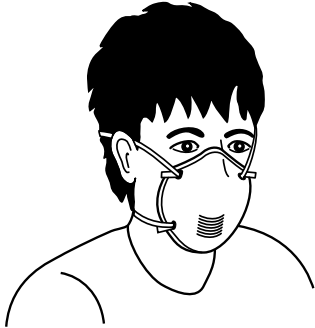
Continues on reverse

Please refer to www.nicd.ac.za for most recent version of this document before use.

Version 3, 14 February 2020

When to use a surgical face mask or FFP3 respirator

When caring for patients with **suspected or confirmed infectious respiratory virus**, all healthcare workers need to – prior to any patient interaction – assess the infectious risk posed to themselves and wear the appropriate personal protective equipment (PPE) to minimise that risk.

When to use a surgical face mask		When to use an FFP3 respirator	
			
In cohorted area (but no patient contact)	Close patient contact (within one metre)	• Carrying out potentially infectious aerosol generating procedures	
For example: Cleaning the room, equipment cleaning, discharge patient room cleaning, etc	For example: Providing patient care, direct home care visit, diagnostic imaging, phlebotomy services, physiotherapy, etc	For example: bronchoscopy, endotracheal intubation, tracheostomy procedures, cardiopulmonary resuscitation, diagnostic sputum induction:	
PPE to be worn	PPE to be worn	• Where a patient is known/suspected to have an infection spread via the aerosol route	
• Surgical face mask (along with other designated PPE for cleaning)	• Surgical face mask • Apron • Gloves • Eye protection (if risk of contamination of eyes by splashes or droplets)	• When caring for patients known/suspected to be infected with a newly identified infectious respiratory virus	
		PPE to be worn • FFP3 respirator • Gown • Gloves • Eye protection	
		• Fit testing should be carried out by a properly trained competent fit tester.	
		• Other guidance is available on bacterial infections and pulmonary tuberculosis	

These images are for illustrative purposes only. Always follow the manufacturer’s instructions.

Remember

- PPE should be put on and removed in an order that minimises the potential for cross-contamination.
- The order for PPE removal is gloves, apron or gown, eye protection, surgical face mask or FFP3 respirator.
- Hand hygiene must always be performed following removal of PPE.
- Healthcare workers who have had influenza vaccination, or confirmed influenza infection, are still advised to use the above infection control precautions.

“JM16”



**Standard Operating Procedure (SOP) for addressing
cases of COVID-19:
Prepared for members of the Minerals Council South
Africa**

23 March 2020

Prepared by Maseve Healthsource



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1 INTRODUCTION

In November 2019, the first cases of a new disease, later named COVID-19 by the World Health Organisation, were reported by health care workers from Wuhan, China. In December 2019, researchers from Wuhan reported a cluster of pneumonia cases caused by a novel coronavirus, which has since been named SARS-CoV-2. In January 2020 the World Health Organisation (WHO) declared the novel Corona Virus, COVID-19, as a Public Health Emergency of International Concern. On 15th March 2020 the State President declared COVID-19 a national state of disaster in terms of the Disaster Management Act and, among others, prohibiting gatherings of more than 100 people. Despite these measures, the numbers of COVID-19 have increased dramatically.

To reduce the impact of COVID-19 outbreak conditions on businesses, workers, customers, and the public, it is important for all employers to plan, prepare and be ready for COVID-19. For employers who have already planned for influenza pandemics, planning for COVID-19 may involve updating those plans to address the specific exposure risks, sources of exposure, routes of transmission, and other unique characteristics of COVID-19 which is comparable to pandemic influenza viruses.

Employers who have not prepared for such pandemic events should prepare themselves and their workers as far in advance as possible of potentially worsening outbreak conditions. Lack of continuity planning can result in a cascade of failures as employers attempt to address challenges of COVID-19 with insufficient resources and workers who might not be adequately trained for jobs they may have to perform under pandemic conditions.

This SOP aims to assist the Minerals Council members in identifying those at risk and manage them, minimise the risk, prepare for workplace COVID-19 positive workers and in a worst-case scenario, the closing of operations. **Companies should adapt the SOP according to their risk assessment.**

The material contained in this publication is in the public domain from Department of Health (DOH), National Institute for Communicable Diseases (NICD), World Health Organisation (WHO) and other sites. The COVID-19 information is extremely dynamic and continuously evolving necessitating real-time staying informed by checking the WHO, National Health Laboratory Services (NHLS), National Institute for Occupational Health (NIOH), NICD and Department of Health (DOH) websites.

This SOP is a living document and will be reviewed and revised by the Health Policy Committee.

2 RISKS AND IMPLICATIONS OF COVID-19 INFECTION AT THE MINES

Similar to the rest of South African population, mine workers are at risk of being infected from the communities they live in or vice versa.

SARS-CoV-2 is a single stranded RNA virus from the Coronavirus family and is named COVID-19. It can be transmitted directly by inhalation of droplets from an infected individual's direct coughing or sneezing within a 1-2-meter radius. The infectious droplets fall onto surfaces and a person can be infected by touching these surfaces, and then touching one's eyes, nose or mouth. The virus is known to survive for up to 9 days on some surfaces. There is evidence that the virus is also airborne.

COVID-19 has been associated with rapid progression to acute respiratory distress syndrome, multiple organ failure and sometimes death. The case fatality ratio is currently unknown but estimated to be within a range of 0.5-4%. People with co-morbid illnesses such as respiratory and, cardiac conditions, diabetes, immune deficiency and the elderly are at most risk of becoming sick and dying.

According to the DOH published document on clinical management of confirmed COVID-19 diseases version 19th March 2020 which can be obtained from www.nicd.ac.za; the vast majority of COVID-19 cases will make a full recovery, though this may take several weeks particularly in severe cases.

The Mine Health and Safety Act 29 of 1996 (MHSA), assures the safe and healthy working conditions through authorised enforcements of standards and codes of practice developed under the Act. Section 5 of the act stipulates that the employer must as reasonably as practicable, ensure health and safety at the mines. COVID-19 is a new infectious agent that can impact negatively on the health of workers. Current risk assessments by mines need to be reviewed and updated utilising the hierarchy of controls to minimise the impact of COVID-19 on the workplace.

WHO classifies the risk of COVID-19 infection into 4 risk groups which are illustrated by Figure 1.

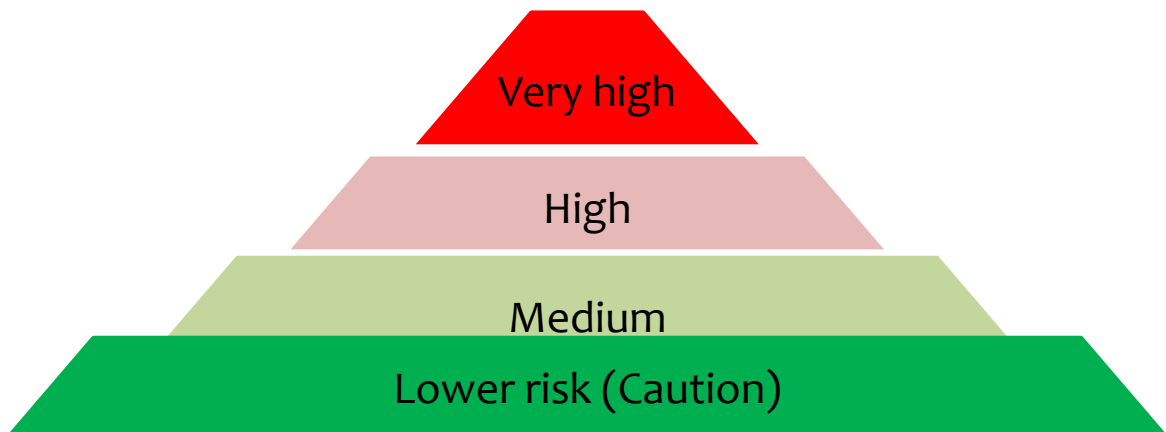


Figure 1: Occupational risk pyramid for COVID-19

a) Very high exposure risk

High potential for exposure to known or suspected sources of COVID-19 during specific medical, post-mortem, or laboratory procedures. Workers in this category include: Healthcare workers treating COVID-19 patients for an example doctors, nurses, paramedics, emergency medical technicians, laboratory personnel, morgue workers). The high-risk exposure activities include performing aerosol-generating procedures for an example intubation, cough induction procedures, bronchoscopies, or invasive specimen collection) on known or suspected COVID-19 patients.

b) High exposure risk

High exposure risk jobs are those with high potential for exposure to known or suspected sources of COVID-19. Workers in this category include healthcare delivery and support staff for an example, doctors, nurses, and other hospital staff who must enter patients' rooms. In the case of the mining industry, medical surveillance procedures such as spirometry and breathalysers fall into this category.

Medical transport workers for an example ambulance vehicle operator moving known or suspected COVID-19 patients in enclosed vehicles. Mortuary workers involved in preparing for burial or cremation, the bodies of people who are known to have, or suspected of having, COVID-19 at the time of their death.

c) Medium exposure risk

Medium exposure risk jobs include those that require frequent and/or close contact with i.e., within 2 meters of people who may be infected with COVID-19, but it is unknown. In areas without ongoing community transmission, workers in this risk group may have frequent contact with travellers who may return from international locations with widespread COVID-19 transmission. In areas where there *is* ongoing community transmission, workers in this category may have contact with the general public for an example in schools and high-population-density work environments.

d) Low exposure risk

Low exposure risk jobs are those that do not require contact with people known to be or suspected of being infected with COVID -19 nor frequent contact (within 2 metres) with the general public. These workers have minimum contact with the general public and co-workers.

Taking the risks described above, an attempt is made in Table 1 to classify as examples, jobs in the industry according to the level of risk. ***This exercise can only be refined and concluded by companies depending on their individual circumstances.***

Table 1: COVID-19 Risk classification

Classification	Mine workers at risk
Very high risk	1. Intensive Care Unit 2. Occupational health practitioners conducting cough inducing procedures, e.g. spirometry. 3. HCWs collecting specimens for diagnosis of COVID-19, e.g. throat swabs. 4. Ambulance personnel that do intubation into trachea. 5. Health Care Workers (HCWs) that do removal of cardio-thoracic organs for compensation purposes.
High risk	1. HCWs that examine workers (at Occupational health centres, medical stations and other places with potential to be in contact with a COVID-19 patient (known and unknown), ambulance drivers transporting the sick

	2. Underground workers who are in crowded environments during waiting to be transported, during transportation to underground and to various working stations 3. Security staff at access points 4. Health and Safety reps during investigation of underground working sites 5. Hospital waste cleaners 6. Change room attendants
Medium risk	Security staff at entrances to facilities and mines Change room cleaners Laundry staff Occupational hygienists -personal sampling procedures Clerks working at occupational health centres Human resource practitioners that interact very closely with people
Low risk	Office workers Control room operators Office cleaners

The risk classification listed in Table 1 is done for purposes of providing relevant personal protective equipment.

Section 3, outlines steps to be taken to prevent infections.

3 PROCEDURES TO BE FOLLOWED TO PREVENT COVID-19 WORKPLACE INFECTIONS

This section describes steps that employers must undertake to prevent COVID-19 infection and stop its transmission to all occupational risk categories.

3.1 Develop a COVID-19 infection policy and procedures

The first step to prevent COVID-19 workplace infection is to develop a policy and procedures on COVID-19 management of suspected and positive cases, while at the same time developing infection controls.

The policy and procedures for immediately isolating people who have signs and/or symptoms of COVID-19 should:

- o Include a 24-hour dedicated number which workers will use to reach the mine's dedicated health workers assigned to COVID-19
- o Include procedures to report when sick or experiencing symptoms of COVID-19, what to do: for an example, self- monitoring, self-isolation and the duration. Currently, it takes up to 14 days for COVID-19 suspected cases to be either confirmed or cleared.
- o Include how and where the 14 days isolation will take place for workers suspected of being infected with COVID-19.
- o Include the sites where workers with suspected COVID-19 infection will be screened, diagnosed, treated. This should include what will lead to admission to a health facility.
- o Include case information questionnaire for self-administration in cases of suspected cases who are self-isolating after being screen by the designated health care worker.

The criteria for a person under investigation (PU) are dynamic and change from time to time. For the latest criteria visit the NICD website: <http://www.nicd.ac.za/diseases-a-z-index/covid-19/>.

The following should be considered in the development of the COVID-19 policy:

1. The mine's leave policies
2. Provide adequate, usable, and appropriate training, education, and information material about business-essential job functions and worker health and safety, including proper hygiene practices and the use of any workplace controls (including PPE). Informed workers who feel safe at work are less likely to be unnecessarily absent. More education and communication material can be accessed from the Minerals Council:

<https://www.dropbox.com/sh/bjvxhyqdydbuuwz/AADStI9FhM1j7Dyr4HatbyWBa?dl=0>

3. Reduction of COVID-19 stigma amongst the suspected, the infected and their families. Regular and proactive communication with the public and at-risk populations can help to reduce stigma, build trust and increase social support and access to basic needs for affected workers and their families. Stigma can undermine social cohesion and prompt social isolation of groups, which might contribute to a situation where the virus is more, not less, likely to spread. Accurate information can help alleviate confusion and avoid misunderstandings. The language used in describing the outbreak, its origins, and prevention steps can reduce stigma. See WHO's Guide to preventing and addressing social stigma for more tips see webpage: <https://www.who.int/docs/default-source/coronaviruse/covid19-stigma-guide.pdf>.
4. Psychosocial support for the worker is important as COVID-19 has caused anxiety and panic across the world. Company Employee Assistance Programmes must provide support.

3.2 Prevent infection to workers and those visiting your operation

Steps all employers can take to reduce workers' risk of exposure to COVID-19.

i. Develop an infectious disease and response plan

- If one does not already exist, develop an infectious disease preparedness and response plan that can help guide protective actions against COVID-19.
- Stay abreast of COVID-19 news from Department of Health/NICD/WHO and consider how to constantly incorporate new recommendations and resources into workplace-specific plans.
- Establish links with NICD to ensure that you receive timeous information on the spread of COVID-19, and be part of the response team if possible.
- Workplace plans should consider and address the level(s) of risk associated with various worksites and job tasks workers perform at those sites. Such considerations may include:
 - o Where, how, and to what sources of COVID-19 might workers be exposed, including the general public, customers, and
 - o Co-workers; and sick individuals or those at particularly high risk of infection (e.g., local and international travellers who have visited locations with widespread

sustained (ongoing) COVID-19 transmission, healthcare workers who have had unprotected exposure to people known to have, or suspected of having, COVID-19.

- The plan should include non-occupational risk factors at home and in community settings for example, the need for social distancing.

ii. **Prepare to implement basic infection prevention measures**

For most employers, protecting workers will depend on emphasizing basic infection prevention measures. As appropriate, all employers should implement good hygiene and infection control practices, including:

- Promote frequent and thorough hand washing, including by providing workers, customers, and worksite visitors with a place to wash their hands. If soap and running water are not immediately available, provide alcohol-based hand rubs containing at least 60% alcohol.
- Encourage respiratory etiquette such as covering coughs and sneezes and if tissues are used, disposing them safely.
- Provide customers and the public with tissues and trash receptacles.
- Discourage workers from using other workers' phones, desks, offices, or other work tools and equipment, when possible.
- Maintain regular housekeeping practices including routine cleaning and disinfecting of surfaces, equipment, and other elements of the work environment. When selecting the cleaning agent, the following should be considered:
 - Its effectiveness which is dependent on the concentration, the ingredients; the storage conditions and the contact time:
 - The area where the cleaning and/or disinfecting agent will be used;
 - The availability of the Material Safety Data Sheet (MSDS)
 - Instructions to be followed for use, for an example, concentration, application method, contact time and the PPE required.

3.3 Procedure for medium to very high-risk exposure jobs

The previous section described what should occur at each working place for COVID-19. For medium to very high exposure jobs additional measures are required in the form of engineering and administrative controls and PPE.

i. **Engineering controls**

The generic engineering controls require the employer to take further steps to mitigate occupational exposure hazards. Engineering controls involve isolating workers from work-related hazards. In workplaces where they are appropriate, these types of controls reduce exposure to hazards without relying on worker behaviour and can be the most cost-effective solution to implement. The engineering controls for COVID-19 should be guided by risk assessment.

ii. **Administrative Controls**

Administrative controls require action by both the worker or employer. Examples of administrative controls for COVID-19 include:

- a) Companies making their leave policies clear to their workers.
- b) Brief workers, contractors and customers that if COVID-19 starts spreading to their community, anyone with even a mild cough or low-grade temperature (37.3 degrees Celsius) should get in touch with the 24-hour designated health care worker (s). This can be on-mine site or off-mine as defined in the policy.
- c) Minimizing contact among workers, clients, and customers by replacing face-to-face meetings with virtual communications and implementing telework if feasible.
- d) Where applicable and based on risk analysis, establishing alternating days or extra shifts that reduce the total number of workers in a facility at a given time, allowing them to maintain distance from one another while maintaining a full onsite work week.
- e) Discontinuing nonessential travel to locations with ongoing COVID-19 outbreaks. Regularly check WHO travel warning levels.
- f) Provide COVID-19 screening, including temperature checks
- g) Provide Personal Protective Equipment (PPE) for medium to very high-risk exposure groups. Examples of PPE include: gloves, goggles, face shields, face masks and respirators. The COVID-19 may change depending on geographic location, updated risk assessments for workers, and information on PPE effectiveness in preventing the spread of COVID-19. Employers should check the DOH, NIOH and NICD websites regularly for updates about recommended PPE. Annexure 2 for recommendations

4 PROCEDURES TO BE FOLLOWED BY A MINE, IN CASE OF A SUSPECTED COVID-19 CASE

A person suspected of COVID-19 becomes a 'person under investigation' (PU) when they have sudden onset of at least one of the following: a cough, sore throat, shortness of breath or fever and have in the past 14 days prior to onset of these symptoms were in close contact with a confirmed COVID-19, or have travelled to areas with COVID-19. See definition of PU at <http://www.nicd.ac.za/diseases-a-z-index/covid-19/>

The mine should proceed as follows:

- a. The worker must contact the 24-hr designated health care worker.
- b. Prompt identification and isolation of potentially infectious individual(s).
- c. Depending on the mine procedure, the individual will at home or requested to go to the designated site (on mine or other) as defined in mine's the policy for screening.
- b) If the person fulfils the latest case definition for suspected COVID-19 case, a 'person under investigation' (PU), proceed to test them
- c) The health care worker should clinically check if the individual is well enough to be sent home to self-isolate. If so, discuss the patient information sheet, see annexure 2 as an example.
- d) If the individual is not, refer to the designated health facility identified in the policy for the 14-day isolation.

5 RISK MITIGATION MEASURES TO BE UNDERTAKEN FOR CASE(S) OF COVID 19 INFECTION.

The WHO has declared COVID-19 an occupational respiratory disease. In cases of a definite case(s) of COVID-19 infection whether the diagnosis is made by a private laboratory or by the NICD, the steps to be followed include managing the infected patient and tracing the contacts.

The steps to be followed are:

- i) Move infectious people to a location away from workers, customers, and other visitors. Although most worksites do not have specific isolation rooms, designated areas with closable doors may serve as isolation rooms until potentially sick people can be removed from the worksite. **(This room should have been designated or identified earlier if not mentioned in preparatory section).**
- ii) To prevent further transmission, restrict the number of personnel entering isolation areas.

- iii) To limit spread of the respiratory secretions of a person who may have COVID-19, provide a face mask and ask the person to wear it. Note: A face mask (also called a surgical mask, procedure mask, or other similar terms) on a patient or other sick person should not be confused with PPE for a worker; the mask acts to contain potentially infectious respiratory secretions at the source (i.e., the person's nose and mouth).
- iv) Report the case to the DOH using its reporting forms. The same report should be submitted to the to the Department of Minerals of Resources and Energy and the Minerals Council.
- v) Report the case to the COIDA Commissioner or Rand Mutual Assurance, where applicable.
- vi) Commence contact tracing immediately and plan the 14-day self-quarantine, the accordance with the stipulated DOH. (The tracing is for workers and their family who were in contact with them).
 - 1. Keep a record list of these contacts
 - 2. Have patience with regard to obtaining a healthcare provider's note for workers who are sick with acute respiratory illness to validate their illness or to return to work, as healthcare provider offices and medical facilities may be extremely busy and not able to provide such documentation in a timely manner.
 - 3. Be aware of workers' concerns about safety, health, and other issues that may arise during infectious disease outbreaks. Provide adequate, usable, and appropriate training, education, and informational material.
 - 4. Work with insurance companies (e.g., those providing employee health benefits) and state and local health agencies to provide information to workers about medical care in the event of a COVID-19 outbreak.
- vii) Use special precautions associated with Biosafety Level 3 when handling specimens from known or suspected COVID-19 patients.

6 ADVICE ON THE STAGES AT WHICH CONSIDERATION SHOULD BE GIVEN TO SHUTDOWNS

The consideration of a shutdown is multifactorial and will be depended on the location of the operation, the surrounding communities' COVID-19 situational analysis which changes daily, where the workers reside (hostels or community) and whether the mines commenced with strategies to prevent infection and transmission since the first case was announced. The shutdown will also be dependent on government policies which are dictated by the spread of transmission, whether the

proposed treatment is effective to prevent morbidity and mortality; and whether a vaccine is available.

Based on the daily changing scenario at the operation, the following are considerations for closing a mine section or operation proactively:

- a. A mine section/working area should shut down if it has an increasing number of confirmed cases of COVID-19.
- b. A mine operation should shut down if there are multiple clusters and/or increasing numbers of confirmed COVID-19 cases.
- c. A case of COVID-19 death at a section

RESOURCES

Telephone hotline

NIOH OHP HOTLINE: 0800 11 11 32

NICD Public hotline: 0800 02 99 99

NICD HCWs hotline: 082 883 9920

DOH WHATSAPP: 060 012 3456

COVID-19 Workplace queries: info@nioh.ac.za

How to stay informed:

Find the latest local information

DOH: www.health.gov.za

NICD: www.nicd.ac.za

<http://www.nicd.ac.za/wp-content/uploads/2020/02/Guidelines-for-case-finding-diagnosis-management-and-public-health-response-in-South-Africa.pdf>

Minerals Council South Africa: <https://www.dropbox.com/sh/bjvxhyqdydbuuwz/AADStI9FhM1j7Dyr4HatbyWBa?dl=0>

National Health Laboratory Services: www.nhls.gov.za

Department of Employment and Labour guidelines to deal with Covid-19 at workplaces:

www.labour.gov.za

Find the latest information from WHO on where COVID is spreading:

<https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports/>

Advice on guidance from WHO on COVID-19

<https://www.who.int/emergencies/diseases/novel-coronavirus-2019>

<https://www.epi-win.com/>

Other resources

www.osha.gov

www.cdc.gov/niosh

Annexure 1: Recommendations for PPE COVID-19 selection

All types of PPE must be:

1. Selected based upon the hazard to the worker.
2. Properly fitted and periodically refitted, as applicable (e.g., respirators)
 - Consistently and properly worn when required.
 - Regularly inspected, maintained, and replaced, as necessary.
 - Properly removed, cleaned, and stored or disposed of, as applicable, to avoid contamination of self, others, or the environment.
3. Workers, including those who work within 2 meters of patients known to be, or suspected of being, infected with COVID-19 and those performing aerosol-generating procedures, need to use respirators:
 - o National Institute for Occupational Safety and Health (NIOSH)-approved, N95 filtering facepiece respirators or better must be used in the context of a comprehensive, written respiratory protection program that includes fit-testing, training, and medical exams. See OSHA's Respiratory Protection standard, 29 CFR 1910.134 at www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.134
 - o When disposable N95 filtering facepiece respirators are not available, consider using other respirators that provide greater protection and improve worker comfort. Other types of acceptable respirators include: a R/P95, N/R/P99, or N/R/P100 filtering facepiece respirator; an air-purifying elastomeric (e.g., half-face or full-face) respirator with appropriate filters or cartridges; powered air purifying respirator (PAPR) with high-efficiency particulate arrestance (HEPA) filter; or supplied air respirator (SAR).
 - o Consider using PAPRs or SARs, which are more protective than filtering facepiece respirators, for any work operations or procedures likely to generate aerosols (e.g., cough induction procedures, some dental procedures, invasive specimen collection, blowing out pipettes, shaking or vortexing tubes, filling a syringe, centrifugation).
 - o Use a surgical N95 respirator when both respiratory protection and resistance to blood and body fluids is needed.
 - o Face shields may also be worn on top of a respirator to prevent bulk contamination of the respirator. Certain respirator designs with forward protrusions (duckbill style) may be difficult to properly wear under a face shield. Ensure that the face shield does not prevent airflow through the respirator.

Annexure 2: An example of a suspected COVID-19 patient who is being sent home to wait for result.

Example of a patient information sheet for use with suspected cases who are being sent home to await test results for SARS-CoV-2 (COVID-19).

While awaiting test results for COVID-19 (the novel coronavirus), you have been assessed as being medically well enough to be managed at home.

However, please consider yourself as potentially infectious until the final results are available. You will need to abide by the following:

- You should quarantine yourself at home. Don't go to work, avoid unnecessary travel, and as far as possible avoid close interactions with other people.
- You should clean your hands with soap and water frequently. Alcohol-based sanitizers may also be used, provided they contain at least 60% alcohol.
- Do not have visitors in your home. Only those who live in your home should be allowed to stay. If it is urgent to speak to someone who is not a member of your household, do this over the phone.
- You should wear a facemask when in the same room (or vehicle) as other people.
- At home, you should stay in a specific room and use your own bathroom (if possible). If you live in shared accommodation (university halls of residence or similar) with a communal kitchen, bathroom(s) and living area, you should stay in your room with the door closed, only coming out when necessary, wearing a facemask if one has been issued to you.
- You should practice good cough and sneeze hygiene by coughing or sneezing into a tissue, discarding the tissue immediately afterwards in a lined trash can, and then wash your hands immediately.
- If you need to wash the laundry at home before the results are available, then wash all laundry at the highest temperature compatible for the fabric using laundry detergent. This should be above 60° C. If possible, tumble dry and iron using the highest setting compatible with the fabric. Wear disposable gloves and a plastic apron when handling soiled materials if possible and clean all surfaces and the area around the washing machine. Do not take laundry to a laundrette. Wash your hands thoroughly with soap and water after handling dirty laundry (remove gloves first if used).
- You should avoid sharing household items like dishes, cups, eating utensils and towels. After using any of these, the items should be thoroughly washed with soap and water.
- All high-touch surfaces like table tops, counters, toilets, phones, computers, etc. that you may have touched should be appropriately and frequently cleaned.
- Monitor your symptoms - Seek prompt medical attention if your illness is worsening, for example, if you have difficulty breathing, or if the person you are caring for symptoms are worsening. If it's not an emergency, call your doctor or healthcare facility at the number below. If it is an emergency and you need to call an ambulance, inform the call handler or operator that you are being tested for SARS-CoV-2.

While awaiting the results, if your symptoms worsen:

- Call:

- Or come to:

For more information on COVID-19, see the NICD's FAQ page:

“JM17”



**STANDARD OPERATING PROCEDURE FOR MINERALS
COUNCIL SOUTH AFRICA MINES: FOLLOWING
COVID -19 LOCKDOWN**

9 April 2020

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1 INTRODUCTION

Given the recent spread of the COVID-19 virus to various parts of the world, including to South Africa and the 21-day lockdown declared on 26th March 2020, this Standard Operating Procedure (SOP) has been developed to assist in preventing the transmission of COVID-19 in South African mines.

2 SCOPE AND PURPOSE

This procedure provides guidelines for the management of the healthcare workers and employees returning to work following the COVID-19 South African lockdown. The guidelines address possible exposure to SARS-CoV-2 the virus responsible for COVID-19 and subsequent illness, isolation and quarantine, in addition to the usual return to work procedures of the industry. The aim is to ensure good health and safety of employees on return to work (RTW). This procedure should be read together with the SOP for Addressing Cases of COVID-19: prepared for members of the Minerals Council South Africa, approved by the Minerals Council Board on 25th March 2020. One should also be cognisant of the Guiding Principles on Prevention and Management of COVID-19 in SAMI published by the Department of Minerals and Energy (DMRE) on 26th March 2020.

3 BACKGROUND

In November 2019, the first cases of a new disease, later named COVID-19 by the World Health Organization (WHO), were reported by healthcare workers from Wuhan, China. In January 2020 the WHO declared COVID-19, as a public health emergency of international concern. On 15th March 2020 the State President of South Africa declared a national state of disaster on COVID -19, in terms of the Disaster Management Act which introduced several restrictions aimed to curb the disease. Despite these measures, the numbers of COVID-19 increased dramatically and on 25th March 2020, the Minerals Council Board adopted the SOP for Addressing Cases of COVID-19, in a bid to advise its members on how to manage the unfolding epidemic.

On 26th March 2020, a lockdown was declared in South Africa, lasting till 16th April 2020 when work is expected to resume on 17th April. During this period most mines were under care and maintenance while others were granted exemptions to work on a full-scale capacity or partial scale capacity.

The mining industry has a formal procedure for medical surveillance of any workers returning to work following a significant period of time away from work, based on the Department of Minerals Resources and Energy's (DMRE) standards of fitness to work. This SOP outlines the additional special steps and procedures to be followed in light of workers going back to work after the Lockdown.

4 PROCEDURE

4.1 Before arrival of employees

- (a) Develop a procedure for the management of the return to work after the lockdown, which should include a history of COVID contact from areas of residence during the lockdown.
- (b) Communicate your plan with the local DMRE office to ensure their concurrence on issues such as the extension of expired certificates of fitness and deferment of non-urgent medical surveillance procedures.
- (c) Communicate with Department of Health (DOH) District Communicable Diseases staff to be familiar with the district plan and how your operation will collaborate with the district, including diagnostic, isolation and quarantine and reporting procedures for COVID-19.
- (d) Ensure sufficient availability of resources:
 - o Facilities - pre-screening areas, isolation areas, quarantine areas,
 - o Staff - security personnel, medical staff, social worker, counselling psychologists, employee assistance programme specialists and administrative assistants,
 - o Equipment and medical supplies including soap and water, sanitisers, appropriate personal protective equipment (PPE) for healthcare workers and employees, and waste disposal receptacles for used PPE,
 - o Prophylaxis - Flu vaccination that prioritises those at high risk of disease and INH prophylaxis where required.
 - o Cleaning and disinfection consumables and services
- (e) Communicate new procedures for medical surveillance to employees before they leave areas of residence during lockdown.
- (f) Screen healthcare workers and staff assisting with the RTW before mass screening of employees, and on a daily basis (self-screening).
- (g) Consider screening of employees in labour sending areas before they embark on their journey and isolation and quarantine at source as required.
- (h) If providing transport for the return of employees consider screening mechanisms before boarding and isolation and quarantine at source where required.
- (i) Consider dedensification / physical distancing opportunities for mass transport.
- (j) Workplaces should consider a staggered approach on the number of employees screened per day for return to work to minimise crowding at the screening areas and at the medical centre as well as transporting employees to the medical centre.
- (k) Intensify employee awareness and education on signs and symptoms of COVID-19 on their return.
- (l) Inform employees of the need to report should they have tested positive for COVID-19 during the nationwide lockdown. Request results where available and a clearance letter from the relevant health facility stating the date of onset of symptoms, diagnosis, date of specimen collection of positive test if applicable, and expected date when isolation ends. Communicate this to employees before they embark on their journey to return home.

4.2 After arrival of employees

4.2.1 Infection Prevention and Control measures

- (a) Infection prevention and control measures must be applied to all modes of transport for employees, screening areas and departments.
- (b) Education of workers on:
 - i. Maintaining physical distancing. Ensure employees and staff keep a distance of up to 1.5 to 2 m when in contact with other people; where this is not possible, issue non-medical facemasks.
 - ii. Regular washing of hands with soap.
 - iii. Regular sanitising of hands with alcohol-based hand rub (ABHR) or other appropriate sanitisers.
 - iv. Avoid touching your face areas (mouth, eyes and nose).
 - v. Avoid physical hand contact such as handshakes.
 - vi. Avoid using other people's personal belongings such as stationery, cell phones and sharing food etc.
 - vii. When coughing or sneezing do not use your hands, rather use a tissue/toilet paper or the inside of your elbow.
 - viii. Use disposable tissues rather than a handkerchief; immediately dispose of these tissues in a closed bin and wash or sanitise your hands thereafter
 - ix. Avoid big crowds and travelling.
 - x. Avoid touching objects before sanitising or wiping it clean, like trollies, toilet seats, turnstiles, tables and chairs.
 - xi. Coach and teach family members.
- (c) Posters on Infection Prevention to be visible at all areas of the medical centre.
- (d) Sanitisers must be made available at the entrance of all screening facilities, security entrances and all entrances at the medical centre.
- (e) Sanitisers must be available in each consultation room and testing areas at the medical centre.
- (f) PPE is recommended for frontline staff (as per guideline).
- (g) Employees to use non-medical or homemade (bandanas/buffs/cloth masks) facemasks (now endorsed by WHO and Centre for Disease Control) in crowded environments where physical distancing cannot be practised.
- (h) Provide education on donning and doffing of PPE to reduce the spread of the infection.
- (i) Provide receptacles for used PPE and facemasks.
- (j) Re-enforce compliance with the taking of chronic medication.

4.2.2 Screening at the designated areas

- (a) Where there is company accommodation, initial pre-screening should be done at the residences, before getting to the work site. This is to isolate and quarantine any possible cases and suspects.

- (b) At work, pre-screening of workers must be done before entering the facility (at the gate) either by nursing or security staff as per agreed-on protocol. This will be a temperature check.
- (c) Employees with elevated temperatures will be referred directly to the isolation area for assessment by a Registered Nurse.
- (d) Employees who do not have elevated temperatures should be referred to the Medical Centre for COVID-19 Risk Assessment and return to work medical. (Annexure 1)
- (e) RTW medical will include questionnaire and vital signs – temperature, blood pressure, blood glucose (for known diabetics).
- (f) Identify workers with pre-existing conditions that will predispose them to COVID-19, for closer monitoring.
- (g) Utilise a risk-based method to prioritise high-risk individuals (pre-existing occupational lung diseases, HIV with low CD4, non-compliant HIV patients and smokers), for more active interventions such as prophylaxis and individualised counselling.
- (h) Schedule dates for flu vaccination for all employees, prioritising those with pre-existing conditions.
- (i) Provide a RTW Note to employees with normal vital signs and who are not presenting with any symptoms. These employees may proceed to their respective departments and resume work.

4.2.3 Referral

- (a) Refer employees with abnormal findings, e.g., an elevated blood pressure and glucose to the medical centre for further assessment and management. Provide the employee with the RTW Note to submit to the medical centre.
- (b) Refer employees with any psycho-social symptoms to medical centre to facilitate referral to EAP (Employee Assistance Programme).
- (c) Refer employees with a high temperature (37.5° C) and/or respiratory symptoms to the identified COVID-19 isolation area for further assessment.
- (d) Consider the differential diagnosis for elevated temperature and respiratory symptoms in mineworkers and exclude underlying conditions such as tuberculosis and bacterial pneumonia.

4.3 Isolation area Assessment

- (a) Employees are assessed for COVID-19 signs and symptoms in the isolation area.
- (b) Employees who meet the NICD criteria of a person under investigation (PUI) must be referred to the designated Isolation Centre for testing.
- (c) Employees whose test results are positive for COVID-19, are not very sick and have the capacity to self-isolate may do so at home for 14 days. Provide the necessary PPE and commence contact tracing.
- (d) The medical centre team must follow-up telephonically with the employee on a daily basis, record progress and refer to hospital if required.
- (e) Inform the medical centre if the employee is not fit to return to work.
- (f) Keep a register of employees presenting with symptoms, i.e. persons under investigation (PUI) and who are referred for isolation, as per DOH guidelines.

4.4 Follow-up

- (a) Employees must call the medical centre to arrange for an assessment and the issuing of a clearance letter after the isolation/admission period.
- (b) Following the fitness to work assessment, issue a RTW Note and advise the Line Manager.

4.5 Continuous Measures

- (a) Training of staff and employees
- (b) Continually re-enforcing of universal hygiene precautions
- (c) Enforce physical distancing in the workplace
- (d) Continue use of facemasks.
- (e) Promotion of good hygiene practices.

5 Reporting

- (a) Case reporting should be done through the NICD surveillance programme, Reports should also be submitted to the Minerals Council and DMRE.
- (b) COIDA reporting should be done if a healthcare worker becomes infected from a known source in the workplace. (importance of registers of PUIs).

6 Annexures

Annexure 1: COVID-19 Risk Assessment form

7 References

- <https://www.cdc.gov/coronavirus/2019-ncov/healthcare-facilities/hcp-return-work.html>
- <https://www.cdc.gov/coronavirus/2019-ncov/community/guidance-business-response.html>
- DOH COVID-19 Infection Prevention and Control Guidelines for South Africa - Draft V1

8 Document History

Revision	Date	Revision description	Compiled/Revised by	Approved by
0	9 April 2020	New document	T Balfour	Health Policy Committee

ANNEXURE 1

Return to Work Medical Screening

Surname:		First Name:		Company Number	
Date Of Birth:		Occupation:		Department:	
Date Employed:		Date Discharged:		Length Of Service:	

1.

2.	Vital Data		
	Blood Pressure	mmHg	
	Pulse	Bpm	
	Temperature	°C	
	HGT	mmol/L	
3.	Have you ever had a serious occupational accident or an occupational disease?	Yes	No
	Describe		
4.	Chronic Disease	Yes	No
	Hypertension		
	Diabetes		
	Epilepsy		
	Asthma		
	TB		
	Psycho-social problems **		
	If yes and symptomatic, or any vital signs out of normal limits, refer to the medical centre		
** If yes, refer to the medical centre for referral for EAP			
5.	Do you take <u>any</u> medication (List Below)	Yes	No

	Symptom Check	Yes	No
	Fever		
	Cough		
6.	Sore Throat		
	Shortness of breath		
	Any contact with person diagnosed with COVID—19		
	If any symptoms are present refer the employee to the isolation area		
	Status (Tick appropriate box)		
7.	Fit to work		
	Refer to medical centre		
	Refer to isolation area		

I hereby declare that all the information furnished above is, to the best of my knowledge, true and correct and that no information has been omitted or withheld.

Signature of employee: _____

Assessed by: _____



MINING INDUSTRY ACTION PLAN ON COVID-19

Minerals Council response



TIMELINE

January 2020	Early February 2020	Week of 9 March 2020	11 March 2020	11 March 2020	15 March 2020	17 March 2020
WHO declared COVID-19 a Public Health Emergency of International Concern	Minerals Council provided members with material on mitigation measures against the virus, targeted at employees (Materials based on information from NICD and WHO)	Minerals Council engages with DMRE (especially Chief Inspector of Mines)	WHO declared COVID-19 a pandemic after the virus reached more than 100 countries around the world	Minerals Council issued second set of guidance materials to members	President Cyril Ramaphosa declared a national state of disaster announcing measures taken by the country to combat the COVID-19 pandemic	Minerals Council meets with Minister of Mineral Resources and Energy on industry preparedness

The Minerals Council listened very closely to the message from the President, and is fully supportive of the measures he announced. The Minerals Council and its members are already doing many of the things he spoke of and will fully align with the requirements.

10-POINT ACTION PLAN



ENGAGEMENT WITH ORGANISED LABOUR AND GOVERNMENT

Organised labour

- The Minerals Council sees organised labour as a partner in its approach
- The Minerals Council and its members have initiated engagements with organised labour at a national level both directly and through the MHSC
- Companies and mines are engaging with organised labour at local and national level

Government

In its engagement with government, the Minerals Council:

- continues to engage with the DMRE
- continues to engage with the DoH to ensure alignment
- participated in the NEDLAC special Executive Council meeting to discuss a common programme to slow down the spread of COVID-19
- has been invited to participate in the interdisciplinary team leading the planning around COVID-19

1



Employee education and health promotion for employees, contractors and suppliers

- Workplace cleanliness and hygiene with disinfectants
- Regular, thorough handwashing, sanitising hand rubs
- Promote good respiratory hygiene, including ordinary masks for sneezing and coughing people
- Instructions for anyone with mild cough, fever to isolate

2



Health worker readiness

- Workplace hygiene
- Education on the management of COVID-19
- Triaging people with respiratory symptoms in healthcare facilities, including provision of ordinary masks
- Alternate arrangements for supply of chronic medication to reduce crowds
- Information on the NICD hotline

3



Ensuring access to consumables

- Ensuring access to:
- consumables (masks, gloves, cleaning materials, glasses, protective gowns, etc.) for medical professionals
 - PPE for employees, and hardware (infra-red temperature monitors)

4



Proactive influenza vaccination

- Mining industry undertakes and promotes this every year
- Particularly important for people with compromised immunity, the elderly or those with chronic conditions
- Companies will be identifying employees who would be most at risk
- Blanket flu vaccination is recommended where possible, with those at risk being a priority
- Minerals Council recognises that the flu vaccine does not prevent COVID-19, but it does help to ensure that employees' immune systems are not compromised if they should become infected with the virus

5



Understanding the potential impact on employees who may be immuno-compromised

- NICD advises that it is important for employees to understand their HIV status, and to take ARVs where this is required
- Companies will be identifying employees who would be considered to be most at risk
- Mining industry already has an HIV and TB screening campaign through Masoyise Health Programme, and this will be intensified

6



Case definition and management of suspected cases or contacts of cases

- This will be done in conjunction with the NICD

7



Isolation of employees should the need arise

- Engaging with the NICD on standards/protocols for quarantine, and the potential role of mine hospitals
- If required, the mining industry will also explore a regional approach for treatment of cases, which includes collaboration between the state and the companies (This will only be considered following guidance from the DoH and NICD)

8



Travel advice

- As advised by NICD, only essential travel to areas with COVID-19 should be undertaken
- WHO advises that people coming from COVID-19 affected countries should monitor their temperature twice a day and self-isolate once they have symptoms, as well as alert health authorities

9



Reporting and communication in the mining industry in the event of a case

- Any suspected or confirmed case will be reported to the Minerals Council (after consultation with NICD)
- The Minerals Council will maintain and report on industry data

10



Monitoring

- The Mineral Council will continue to monitor international statistics as presented by credible sources such as the WHO and NICD

“JM18”

“JM19”

26 March 2020

Our ref: GS Jeffrey Mphahlele/CPJvR/Implementation of Covid-19 Measures

Your ref: Hon Minister G Mantashe

Attention: Honourable Gwede Mantashe
Minister
Department of Mineral Resources and Energy

By electronic transmission

Dear Honourable Minister

RE: IMPLEMENTATION OF COVID-19 MEASURES IN MINING AND ENERGY

Our engagement of 24 March 2020 has reference.

The Association of Mineworkers and Construction Union (AMCU) acknowledges receipt of your remarks on the implementation of the lockdown as announced by honourable President Cyril Ramaphosa on 23 March 2020.

We are disappointed with the contents of this document, as it does not seem to fully reflect the consultative engagement we had on 24 March 2020. It is also a marked departure from the total lockdown as announced by the honourable State President, who said that only essential services in mining and energy will continue to operate during the lockdown. This contrasts heavily with your remarks which merely indicate a scaling down of mining operations, as opposed to the total closure of operations as announced by the honourable State President. We are concerned that this vague and ambiguous directive will leave too much room for abuse by employers. We request that you reconsider this approach, and issue more directives with finer details in this regard.

Furthermore, we note that you include a blanket provision that all coal mines that supply coal to Eskom, will continue operating. We respectfully submit that this is not

what we agreed, Minister. Our agreement was that the Department of Mineral Resource and Energy (DMRE) would generate a list of these particular mines, which would then limit the risk of contagion to the bare minimum. The current blanket announcement also leaves too much room for abuse by employers, as we are experiencing currently. We request that you urgently furnish us with this list as per our agreement.

During our engagement, we as AMCU were very clear on our mandate that the national lockdown must not infringe on employees' terms and conditions of employment made its points very clear in this regard.

Moreover, we believe that the vast stockpiles of mining houses can be optimally utilised during the lockdown period, and we don't see any directive to this effect in your remarks.

We find it problematic that the DMRE did not consult trade unions when finalising the document which you have now issued. It is not proper to have an engagement and then unilaterally conclude and issue a document for public consumption. Such approach points to superficial consultation and bad faith engagement. We urge you to correct this error immediately.

We request to have an urgent engagement with your office in order to find alternatives to what you currently propose. Due to the national lockdown in place, we propose that this engagement be done by means of teleconference, Skype, Zoom and other technologies. Please request your office to confirm your availability for such an engagement with Ms Esther Mabena on mabenaem@amcu.co.za.

Your urgent attention to this critical matter will be highly appreciated.

Yours in Social Justice

A handwritten signature in black ink, appearing to read 'Jeffrey Mphahlele', is written over a horizontal line.

Jeffrey Mphahlele
General Secretary

“JM20”

5 April 2020

Our ref: GS Jeffrey Mphahlele/CPJvR/Implementation of Covid-19 Measures (2)

Your ref: Hon Minister G Mantashe

Attention: Honourable Gwede Mantashe
Minister
Department of Mineral Resources and Energy

By electronic transmission

Dear Honourable Minister

RE: IMPLEMENTATION OF COVID-19 MEASURES IN MINING AND ENERGY (2)

The SMS received Friday (3 April 2020) at 17:31 has direct reference. This SMS entitled “Invitation to COVID-19 meeting”, addressed to a list of trade unions and written on behalf of the Director-General of the Department of Mineral Resources and Energy (DMRE), Adv T Mokoena, invites AMCU and other stakeholders to an engagement at the DMRE on 7 April 2020.

Minister, firstly we respectfully submit that your office has not responded to our previous letter with similar title dated 26 March 2020. In this letter we raised a variety of concerns, including specifically the way in which the DMRE was departing from the national lockdown measures as announced by the State President, Honourable Cyril Ramaphosa.

The honourable State President was very clear when he said only essential services would continue during the 21 days, but DMRE took the opportunity to expand this exemption to a variety of other mines.

We also criticised your office for unilaterally drafting a document for public consumption, without prior consultation with the Association of Mineworkers and

Construction Union (AMCU) and other stakeholders. We further pointed out significant variations from the points discussed at our consultative meeting of 24 March 2020, indicating to us that it was superficial consultation.

We thus requested an urgent engagement with your office via teleconference or other technologies due to the lockdown measures of social distancing. As stated, your office did not even acknowledge receipt of this important correspondence, let alone respond to the requests we made.

It is a matter of record that AMCU has consistently and proactively called for national engagement on how the mining sector will deal with the Covid-19 pandemic, but this has fallen on deaf ears.

Apart from our correspondence to the DMRE, we have written to all employers, including those in mining and energy, requesting them to involve us in their decisions around this critical issue.

Already on 5 March 2020, AMCU sent a letter to all mining houses to call for a “National Coronavirus Summit”. This was well before the lockdown but, once again, it did not gain traction.

We respectfully submit that the DMRE waited too long to act in the face of this pandemic and, when it started acting, it did so in a highly reactive and haphazard fashion.

Now, we receive this SMS calling us for another physical meeting at the DMRE offices on Tuesday, 7 April 2020. We believe that physical meetings at this time is highly irresponsible, when even the State’s own press conferences are increasingly taking place via remote methods.

Moreover, as AMCU, we have no reason to believe that this will be a genuine consultative engagement. Rather, we believe, it will be another “rubber-stamp” and “tick-box” exercise by the DMRE to flout the rights of workers for the sake of the profits of the mining bosses.

One is left wondering why your office could not draft your proposals in writing and present it to AMCU and other stakeholders for written submissions. Surely this would

be a more responsible manner to engage with these critical issues in the face of the current situation.

It must be stated that it is becoming clear that the DMRE is under severe pressure from the Minerals Council to start with a premature ramp-up of operations under the guise of the essential services exemption. The talk of a return to 50% of production capacity is highly premature until such time as the national lockdown has ended.

Already we have seen several negative consequences of these concessions made by the DMRE, including the fatalities at coal and gold mines and the highly flammable situation at Kumba Iron Ore. We remain highly disappointed in the DMRE for its blatant flouting of the Covid-19 measures put in place by our State President.

We are equally concerned about the job security of workers and the state of the South African economy at large. However, these concerns must never be addressed at the expense of the health and safety of workers. We appeal to the DMRE not to succumb to the pressure of employers and thus flaunt the rights of the workers.

Minister, we hereby request that the DMRE furnishes AMCU and other stakeholders with a draft document outlining the following points:

1. The list of operations in the mining and energy sectors who are currently operational versus those who were granted exemption under the guise of essential services.
2. The interventions taken by the DMRE to address operations in mining and energy which act in contravention of the Covid-19 measures.
3. The proposed ramp-up plan for all operations in mining and energy following the national lockdown, with specific reference to how the mass medical examinations of workers returning to work will be dealt with in the light of current capacity problems.
4. The anticipated timeframes for ramp-up and general return-to-work steps to be followed.

In light of the seriousness of this matter, we request that this document reaches us by no later than close of business, Monday (**6 April 2020**).

Your urgent response to our correspondence will be highly appreciated.

Yours in Social Justice

A handwritten signature in black ink, appearing to read 'Jeffrey Mphahlele', is written over a horizontal line.

Jeffrey Mphahlele
General Secretary

“JM21”

6 April 2020

Our ref: GS Jeffrey Mphahlele/CPJvR/Implementation of Covid-19 Measures (3)

Your ref: Hon Minister G Mantashe

Attention: Honourable Gwede Mantashe
Minister
Department of Mineral Resources and Energy

By electronic transmission

Dear Honourable Minister

RE: IMPLEMENTATION OF COVID-19 MEASURES IN MINING AND ENERGY (3)

The SMS received on 3 April 2020 at 17:31 as well as our correspondences of 26 March 2020 and 4 April 2020 have combined reference.

As the Association of Mineworkers and Construction Union (AMCU), we hereby express our utter disappointment in the repeated non-response of your office to our correspondence.

In our letter dated 4 April 2020, we expressed our concern about the physical meeting called by the DMRE during the national lockdown. We requested that the meeting be held via teleconference or other remote methods of engagement, as is currently the norm in most businesses and government departments. We believe that this is a reasonable request.

Due to the fact that our leadership live in different provinces and the risk associated with undertaking travel and attending large meetings during the national lockdown, we are left with no choice than to hereby tender our apology for the meeting tomorrow.

We remain available for engagement via teleconference or other remote meeting technologies. Please feel free to contact me on 071-688-6707 for more information in this regard.

Yours in Social Justice

A handwritten signature in black ink, appearing to read 'Jeffrey Mphahlele', is written over a horizontal line.

Jeffrey Mphahlele
General Secretary

■ NATIONAL / LABOUR

“JM22”

Amcu wants standard health and kit rules before returning to work

Union proposes appointing a task team to set standards on protective gear and strategies

08 APRIL 2020 - 17:24 by ALLAN SECCOMBE



Amcu leader Joseph Mathunjwa. Picture: SUNDAY TIMES

As the mining industry debates the consequences of the 21-day lockdown and its possible extension, one of the safety regulations to apply across the sector to clear the way for restarting mines.

The Association of Mineworkers and Construction Union (Amcu), best known for two of the longest strikes in team from the department of minerals & energy, Minerals Council SA and unions, to agree on a set of safety st

The team would draw on advice from specialist bodies and the minister of health, Zweli Mkhize, who has won pandemic and the response from the health sector.

“As Amcu, we will not support any ramp-up of operations at mines before these regulations are agreed upon a president, Joseph Mathunjwa, said.

“We can simply not afford to let mineworkers die due to a lacking and uncoordinated approach to this pander

Union leadership met minerals & energy minister Gwede Mantashe earlier on Tuesday, with the council meeti Wednesday to discuss the consequences of the lockdown, which started on March 27 and resulted in the imm

Without masks

Pictures on Mantashe’s Twitter account show the minister with a face mask covering only his mouth as he tak general Thabo Mokoena, have opted not to wear one at all. Adviser and former department director-general S taken off or is putting on.

The meeting of about 24 people at a long table in the department’s offices in Pretoria shows many attendees v Council SA CEO Roger Baxter, but with people sitting in every second seat, prompting questions why it was n

and not on a digital platform, keeping captains of industry, union leadership and government officials safe.

It was noted in Mantashe's message that the meeting was with the council, which is the mining companies' representative Mineworkers (NUM), trade union Solidarity and UASA. Amcu, the biggest mining union next to the NUM, was

The two-day meeting was to "proactively manage issues directly affecting the industry in the interests of ensuring that companies are able to meet their obligations during this time", it reads.

Limited operations

Mantashe has repeatedly said there has been the realisation that furnaces and refineries could be damaged by could be kept operational, as well as coal mines supplying Eskom and export contracts, and mines where soci

This has resulted in limited operations in platinum group metals, gold, iron ore, chrome and manganese, especially mines. Mantashe has said these mines had to operate with up to half their normal workforces.

The council said in a note to its members on April 3 that it was vital for mines to return to operation on April 1 ended, or there could be permanent damage.

It noted that a fifth of April's mine production would be lost and this would translate to a 4.5% decline for the

It said mining companies were paying R7bn in wages during the lockdown and this did not include the cost of maintenance, which are programmes to keep mines pumped free of water, ventilated and safe, incurring expenses coming in.

Returning underground mines to production can take two to four weeks, with extensive medical screening of on safety.

Amcu wants a "specific and enhanced standard of personal protective equipment (PPE) [to] be made compulsory combination with strategies to mitigate risk and manage identified infections".

Mathunjwa said: "It has never been more important for the department to manage the conflicting interests of work together to ensure the long-term sustainability of the sector."

The council has adopted a 10-point plan across all companies that entails giving employees and medical staff : glasses as well as infrared monitors to check people's temperatures, fever being one of the symptoms of the d

seccombea@businesslive.co.za

“JM23”

13 April 2020

Our ref: GS Jeffrey Mphahlele/CPJvR/Implementation of Covid-19 Measures (5)

Your ref: DG Adv T Mokoena

Attention: Adv Thabo Mokoena
Director-General
Department of Mineral Resources and Energy

Copy: Mr Gwede Mantashe (Minister of Mineral Resources and Energy)
Mr David Msiza (Chief Inspector of Mines)

By electronic transmission

Dear Adv Mokoena,

RE: IMPLEMENTATION OF COVID-19 MEASURES IN MINING AND ENERGY (5)

1. Your letter dated 8 April 2020 refers.
2. We hereby acknowledge receipt of your letter as well as the list attached as Annexure A to your letter. We thank you for your response, even though your response was on the second letter we wrote to the honourable Minister, and not the latest which was the fourth.
3. In any event, we regret that the points in your letter do not address our and our members concerns regarding the hazard posed by the Covid-19 pandemic and the measures being taken by your department and employers to mitigate the risk it poses to our members.

4. Of particular concern is the refusal or failure on the part of the Department of Mineral Resources and Energy (DMRE) to engage with the Association of Mineworkers and Construction Union (AMCU) and other trade unions and employers to agree and to provide clear directions on the measures that must be taken to safeguard the health of employees. In this regard we note:
 - 4.1. In terms of Annexure B, Item B (22) to the Lockdown Regulations, as amended, *“Gold, gold refinery, coal and essential mining”* (sic) are defined as essential services that are free to continue operating during the lockdown.
 - 4.2. The lockdown regulations made by the Minister of COGTA provide no effective direction or guidance on measures that can and should be taken to safeguard employees working in mines against the hazard posed by the Covid-19 virus.
5. Despite the above, the Minister of the DMRE has also failed to take any measures whatsoever to stipulate or to make any binding directions or regulations to safeguard employees performing essential work in mines. The measures that the Minister could take or have taken include the following:
 - 5.1. In our letter to the Minister dated 8 April 2020, we proposed that a national task team be set up with the express purpose of formulating a Code of Practice that deals with Covid-19, to be made binding on employers in terms of section 9(3) of the Mine Health and Safety Act (MHSA).
 - 5.2. The Minister has wide powers in terms of section 76 of the MHSA to declare a health hazard and to stipulate measures to be taken to protect the health of mine employees.
 - 5.3. The Minister of Cooperative Governance and Traditional Affairs (COGTA) has wide powers afforded her in terms of section 27(2) of the Disaster Management Act (DMA) to make regulations, after consultation with the Minister of the DMRE to make appropriate measures to mitigate the scope and impact of the disaster.

6. Despite the availability of all these remedies, the Minister of the DMRE as chosen not to use them, but instead to leave it to the discretion of each and every mine owner to take such measures as they deem appropriate to safeguard their employees.
7. The Minister's *laissez faire* approach to the issues is not acceptable.
8. AMCU regards the Ministers refusal or failure to stipulate appropriate and effective measures to control the spread of the virus in the mining sector and to protect employees, as a gross dereliction of his duty.
9. At all times AMCU has been willing to work with the DMRE and other stakeholders to formulate and agree appropriate measures and to safeguard mineworkers and the public against the hazard posed by Covid-19. Our previous correspondence and more specifically our letter dated 8 April 2020 with our proposals to set national guidelines for the response to the pandemic, are testimony to this.
10. AMCU therefore reiterates its demand that the Minister sets up a national task team to determine the appropriate regulatory measures that can and should be put in place.
11. Most employers in the mining sector have indicated that they wish to ramp up to full production as soon as they can. Indeed, AMCU has been requested by some employers to facilitate the return of workers to work for this purpose.
12. AMCU cannot in good conscience send its members back to work in circumstances where there is a regulatory vacuum and lack of clarity of workers and employers' rights and duties in this current state of disaster. Our members require clear and enforceable standards against which the performance of their employers can be measured.
13. Failing an appropriate assurance from the Minister that appropriate and enforceable regulations/guidelines are being prepared and that AMCU will be consulted in regard to their content and implementation AMCU will be obliged to approach the High Court for urgent and appropriate relief to ensure that there is no return to normal production without suitable safeguards having been put in place.

We look forward to your prompt reply.

Yours in Social Justice

A handwritten signature in black ink, appearing to be 'Jeffrey Mphahlele', is written over a solid black horizontal line.

Jeffrey Mphahlele
General Secretary

“JM24A”

Your reference:
Our reference: AMCU/Spoor/Kahn

Date: 16 April 2020

Directed to: Mr Gwede Mantashe
Minister of Mineral Resources and Energy

And to: Mr David Msiza
Chief Inspector of Mines

And to: Adv Thabo Mokoena
Director-General: Department of Mineral Resources and Energy

CC: Ms Nkosazana Dlamini-Zuma
Minister of Cooperative Governance and Traditional Affairs

CC: Mr Dan Mashitisho
Director General: COGTA

PER EMAIL

Dear Minister,

Re: PROMULGATION OF COVID-19 REGULATIONS IN MINING AND ENERGY SECTOR

- 1 We act on behalf of the Association of Mineworkers and Construction Union (AMCU) and refer to their latest correspondence directed to you on 13 April 2020, annexed hereto marked “**A**”. To date AMCU has not received a response to same.
- 2 As set out in AMCU’s numerous letters to you, there has been great concern that the Department of Mineral Resources and Energy (the Department or DMRE) is departing from the national lockdown measures by classifying certain mining companies as essential services, resulting in these mining companies continuing with ‘scaled down’ mining operations during the Covid-19 lockdown period. In light of being granted this status, employers have started instructing workers to return to work. This instruction has been made in the absence of any regulatory framework which speaks to the safety of mine workers and the measures employers must put in place to ensure a healthy and safe work environment for mine workers. Compelling workers to return to work at this

stage will pose a grave risk to them as there is no minimum standard in place to guide mines on what measures to put in place to ensure safe work environments. Further, workers who work in mines are at a greater risk of contracting the Covid-19 virus as measures of social distancing and hygiene measures are almost impossible to implement.

- 3 Despite AMCU calling for engagement with yourself and other Department officials on numerous occasions, the only offer of engagement was an invitation to a physical meeting on 7 April 2020. We place on record that AMCU's request to attend via teleconference or any other technology was rebuffed.
- 4 AMCU in its letter directed to you on 6 April 2020 suggested that engagement be conducted by way of written submissions, to adhere to Covid-19 lock-down regulations as it pertains to social distancing. However, this suggestion was not responded to and AMCU was therefore forced to tender an apology for the meeting.
- 5 On 8 April 2020, annexed hereto marked "**B**", AMCU again addressed correspondence to yourself. This letter constituted their submissions on the implementation of Covid-19 measures in the mining and energy sector in order to safeguard workers' health. Amongst other things, AMCU proposed that a sectoral task team be established to oversee the implementation and compliance of the applicable legislative and regulatory framework. The main objective of the task team would be to develop appropriate guidelines for Codes of Practice (COP) for companies in the mining and energy sector. The guideline for COPs must then be gazetted as a regulation and a safety standard in the sector. Once the regulations are in place, all mines must implement them at their respective mines. Should a company need to deviate from these regulations, it must be done in consultation with their Chief Occupational Medical Officer. The Chief Occupational Medical Practitioner will have the authority to shut down any part of the mine on written notice to the mine manager and may, in consultation with other stakeholders, re-open a closed part of the mine. Only once these regulations have been promulgated and all mines have submitted their Covid-19 measures to the Chief Inspector for approval, and only if and when such approval is granted, may employers instruct mine workers to return to work.

- 6 A response to AMCU's letter dated 5 April 2020 from the department was received on 8 April 2020. This response did not address the submissions AMCU made, nor did it address their concerns regarding the potential risk posed by the Covid-19 pandemic to mine workers and how employers sought to mitigate these potential risks.
- 7 AMCU again directed correspondence to you on 13 April 2020 outlining their concerns and the need for binding regulations to be gazetted to ensure that employers are obligated to put in place measures that will ensure mineworkers return to a safe and healthy work environment. The correspondence made clear that in the absence of these regulations, AMCU will not advise their members to return to work.
- 8 Despite your authority in terms of section 76 of the Mine Health and Safety Act (MHSA) to declare an environmental condition as a health hazard and to provide measures that will ensure the safety and health of mine workers, this has not been done. Nor has the Chief Inspector of Mines exercised his authority in terms of section 49(6) read with 9(3) of the MHSA to issue appropriate guidelines for Covid-19 and direct all employers to prepare and implement COPs in line with the guidelines. Further, the Minister of Cooperative Governance and Traditional Affairs (COGTA) has the authority, in terms of section 27(2) of the Disaster Management Act, to make regulations in consultation with yourself. This has not been done.
- 9 To date AMCU has not received an effective response to their concerns raised in their correspondence to you. In the absence of any binding regulations on mining companies, the potential hazard to mine workers returning to work is exponential.
- 10 Considering the seriousness and urgency of this matter, kindly confirm in writing by no later than 17h00 on 17 April 2020 that:
 - 10.1 You are taking steps to either:
 - 10.1.1 Declare Covid-19 as a health hazard in terms section 76 of the MHSA and to issue measures that will ensure the safety and health of mine workers; or

10.1.2 That the Chief Inspector of Mines, in terms of section 49(6) read with 9(3) of the MHSA, will issue appropriate guidelines for Covid-19 and direct all employers to prepare and implement COPs in line with the guidelines; or

10.1.3 Direct the Minister of COGTA, who has the authority, in terms of section 27(2) of the Disaster Management Act, to make regulations in consultation with yourself, to ensure the safety and health of mine workers and mitigate the impact of the Covid-19 pandemic.

10.2 Workers may not be compelled to return to work until binding regulations are in place for the management of Covid-19.

11 Failure to do so will compel us to approach the relevant court for urgent relief.

12 We trust you find the above in order. Please do not hesitate to get in contact with us should you require any clarity.

Yours faithfully

(Signed electronically)

Richard Spoor

George Kahn

CC: Health: Inter-department Task Team on Covid-19 measures

Dr Barry Kistnasamy

“JM24B”

Your reference:
Our reference: AMCU/Spoor/Kahn

Date: 16 April 2020

Directed to: Mr Gwede Mantashe
Minister of Mineral Resources and Energy

And to: Mr David Msiza
Chief Inspector of Mines

And to: Adv Thabo Mokoena
Director-General: Department of Mineral Resources and Energy

CC: Ms Nkosazana Dlamini-Zuma
Minister of Cooperative Governance and Traditional Affairs

CC: Mr Dan Mashitisho
Director General: COGTA

PER EMAIL

Dear Minister,

Re: PROMULGATION OF COVID-19 REGULATIONS IN MINING AND ENERGY SECTOR

- 1 We refer to our letter sent to you earlier today and the amended Covid-19 lockdown regulations announced today at 12:30 by Minister Nkosazana Dlamini-Zuma.
- 2 We submit that the regulations relating to mining operations in terms of regulation 11K, does not address the risk posed to mine workers compelled to return to work and does not adequately address how mining companies are to effectively mitigate the risk of mine workers contracting the Covid-19 virus. Beyond requiring testing, the regulations provide no binding obligations upon mining companies to protect mineworkers from Covid-19 whatsoever.
- 3 We therefore reiterate the need the need for a national standard which binds all mining companies. It is essential for the regulations to provide clarity on what is expected by mining companies to ensure a safe and healthy work environment for workers.
- 4 We look forward to your response by no later than 17h00 on 17 April 2020 that:

4.1 You are taking steps to either:

4.1.1 Declare Covid-19 as a health hazard in terms section 76 of the MHSA and to issue measures that will ensure the safety and health of mine workers; or

4.1.2 That the Chief Inspector of Mines, in terms of section 49(6) read with 9(3) of the MHSA, will issue appropriate guidelines for Covid-19 and direct all employers to prepare and implement COPs in line with the guidelines; or

4.1.3 Direct the Minister of COGTA, who has the authority, in terms of section 27(2) of the Disaster Management Act, to make regulations in consultation with yourself, to ensure the safety and health of mine workers and mitigate the impact of the Covid-19 pandemic.

4.2 Workers may not be compelled to return to work until binding regulations are in place for the management of Covid-19.

5 Failure to do so will compel us to approach the relevant court for urgent relief.

6 We trust you find the above in order. Please do not hesitate to get in contact with us should you require any clarity.

Yours faithfully

(Signed electronically)

Richard Spoor

George Kahn

Elgene Roos

CC: Health: Inter-department Task Team on Covid-19 measures

Dr Barry Kistnasamy

“JM25”

16 April 2020

Our ref: JK Mphahlele/EM/SMS from DMRE

Your ref: DG Adv T Mokoena

Attention: Adv Thabo Mokoena
Director-General
Department of Mineral Resources and Energy

Copy: Chief Inspector of Mines
Mineral Council
NUM
NUMSA
Solidarity
UASA

By electronic transmission

Dear Adv Mokoena

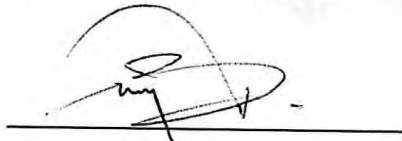
RE: SMS INVITATION TO PHYSICAL MEETING DURING LOCKDOWN

Your SMS invitation received on 16 April 2020, to attend a physical meeting on 17 April 2020 has reference.

As indicated in previous correspondences, AMCU is not in the position to attend physical meetings during the national lockdown as this will pose risks and cause panic to our families. As you also may be aware, our leadership are currently based in different provinces. Please note that this should not be construed as undermining the office of the Honourable Minister or the authority of the Department.

We will appreciate if arrangements can be made that we are connected via teleconference or other remote communication methods. We will avail the relevant leaders to participate remotely.

Yours in Social Justice

A handwritten signature in black ink, appearing to be 'Jeffrey Mphahlele', is written over a horizontal line.

Jeffrey Mphahlele
General Secretary

“JM26”



Human Resources
Lee-Ann Samuel
Group Executive: People

01 April 2020
Mr J Mphahlele
General Secretary
AMCU
By E-mail: mphahlelejk@amcu.co.za

Dear Mr Mphahlele

UPDATE IN TERMS OF COVID19 GOVERNMENT INSTITUTED LOCK DOWN

Background

Following the State President's declaration of the National State of Disaster on 15 March 2020 and the subsequent announcement of a national lockdown from 27 March to 16 April 2020, the Implats Group supports the decisive action taken by the South African government to help flatten the curve of the COVID-19 infection rate. Implats is committed to contributing where it can to South Africa's socio-economic stability. During the national lockdown, Implats' primary focus is on protecting the lives and livelihoods of employees, service providers and communities by doing all it can to sustain the financial viability of its business and the national economies of the countries in which it operates.

Implats successfully ramped down all South African mining operations (Impala Rustenburg and Marula) and placed them on care and maintenance from Thursday, 26 March 2020. Essential care and maintenance services are continuing to ensure the integrity of key infrastructure and facilitate a safe start-up once operations are cleared to resume.

Ministerial Directives

The Minister distributed a paper titled "unpacking mineral and energy industries' response in preparation for a nationwide lockdown" to the Minerals Council on 25 March, in which, it acknowledges that in some mining operations and processing plants a complete shutdown

Impala Platinum Limited Reg. No. 1952/071942/06

2 Fricker Road, Illovo, 2196 • Private Bag X18, Northlands, 2116, South Africa
Tel: +27 11 731 9000 • Fax: +27 11 731 9254 • www.implats.co.za

Directors: NJ Muller (Chairman) • D Chetty • PW Davey • M Kerber • L Lebuso • MC Munroe†
KR Rapoo • LN Samuel • ZB Swanepoel

Secretary: TT Liale

†MHS 2A.(1)

will not be feasible, as a restart from scratch may be too costly. This would negatively affect security of supply, and therefore the economy as a whole and Department has adopted a risk-based approach, with worst-case scenario planning, and all companies have been requested to ensure that their business continuity plans are fit for purpose and guidelines have been provided to mining companies for the submission of applications to continue limited scale mining operations in order to protect infrastructure and to secure metal supply.

In line with South African government regulations (letter from the Minister is attached herewith), the Group has received authorisation to conduct limited smelting operations at Impala Rustenburg together with limited operations at its Springs refinery. This would allow some in-process inventory to be treated during the lockdown period under controlled conditions. The Group have also received authorisation to conduct limited underground ore transport and milling at its South African mining operations under agreed precautionary measures. This will assist in securing underground infrastructure during the lockdown period and significantly enhance our ability to safely resume operations after the lockdown period.

To this end, the company is currently mobilising employees to return to work in order to conduct limited mining activities during the lockdown period in line with the authorisations received from the Regulator. Your assistance in returning employees to work will be highly appreciated and will demonstrate an act of solidarity. We assure you that the company has put in place the required precautionary measures in respect of both health and safety for employees working during this period. The lives and livelihoods of our workers are of critically important to us.

We therefore firmly believe that the ability to continue limited mining and processing activities during the lockdown period will assist in the financial sustainability of the Company and in so doing it will protect the livelihoods of our workers and mitigate future job losses.

Post 21 day lockdown scenario

As you aware, the government-imposed lockdown is placing Implats under severe financial strain. Notwithstanding this, the Company took a decision to pay employees for this period. The Company will not be in a position to continue paying salaries if the lockdown is extended beyond the 21-day period and in the event that it does, from 17 April 2020 the no work-no pay principle will apply. This decision has not been taken lightly and is premised on concerns pertaining to the Company's cash flow position. Employees will be assisted to claim compensation from the UIF. Applying for annual leave or the encashment of leave during this period will not be allowed as this will also have an impact on the Company's cash flow.

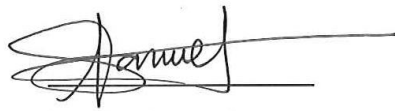
AMCU is a valued stakeholder and as mentioned at our meeting on 25 March 2020, the Company will make every effort to partner with you as it considers alternative measures to sustain the Company's cash flow. The Company is currently under significant pressure to ensure its solvency and liquidity is maintained and swift decision making during this time is essential. As such the Company may not always be in a position to consult before decisions pertaining to pay and work arrangements are taken, we endeavour to communicate all decisions in a timely manner and trust that these decisions will receive your support and understanding.

Conclusion

It is of vital importance that our start-up post the 21 day lockdown is done in a steadfast manner, bearing in mind, that additional screening will be required for COVID-19 and I urge you to please work with us to ensure all of our employees report for duty promptly on the morning of 17 April 2020.

The risks posed by COVID-19 to our lives and livelihoods will be an ever-present feature for some time to come. This crisis provides us with the opportunity to show the world again that we are **STRONGER TOGETHER**. The actions we take in the coming days, weeks and months will determine our future as a company, people and nation - let us work together in preserving our jobs and defeating the virus in the best way possible.

As always, we remain available for engagements that would further the interests of our employees and the sustainability of Implats.

A handwritten signature in black ink, appearing to read 'Lee-Ann Samuel', with a long horizontal line extending to the right.

Lee- Ann Samuel
Group Executive: People

IN THE LABOUR COURT OF SOUTH AFRICA
HELD IN JOHANNESBURG

Case No.: JL27 /2020

In the matter between:

**ASSOCIATION OF MINEWORKERS AND
CONSTRUCTION UNION**

Applicant

and

**MINISTER OF MINERAL RESOURCES
AND ENERGY**

First Respondent

CHIEF INSPECTOR OF MINING

Second Respondent

**MINISTER OF CO-OPERATIVE
GOVERNANCE AND
TRADITIONAL AFFAIRS**

Third Respondent

MINERALS COUNCIL SOUTH AFRICA

Fourth Respondent

AFFIDAVIT

I, the undersigned,

GEORGE IVOR BUTELA KAHN

do hereby make oath and say:

- 1 I am adult male admitted attorney practicing with Richard Spoor Inc. Attorneys, located White River, Mpumalanga and Parktown, Johannesburg. I am one of the attorneys of record for the Applicant.
- 2 I am duly authorised to depose to this affidavit on behalf of the Applicant.

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- 3 The facts contained herein, unless the contrary is indicated by the context, are within my personal knowledge. They are, to the best of my knowledge and belief, both true and correct.
- 4 The relief sought by the applicant in part B of its notice of motion is directed primarily against the State, as represented in this instance by the Minister of Mineral Resources and Energy, the Chief Inspector of Mines and the Minister of Co-operative Governance and Traditional Affairs.
- 5 Although the relief will also affect all mining companies in South Africa that return to operation, it is aimed at protecting the health and safety of their employees. It would therefore be most surprising if any of them would wish to oppose the relief sought.
- 6 In the light of this, we have advised the applicant that it should endeavour to bring the application to the attention of the mining industry to the best of its ability and in a manner consistent with the extremely urgent circumstances surrounding this application. Accordingly, the urgent relief sought in Part A of the notice of motion is directed at obtaining guidance from the court regarding substituted service.
- 7 I along with the firm that I am employed by have extensive experience of litigation on matters of health and safety in the mining industry. For example, our firm was appointed to represent the class in the class action in *Nkala and Others v Harmony Gold Mining Co Ltd and Others* 2016 (5) SA 240 (GJ) (Nkala). I was one of the attorneys involved in that litigation. The senior partner, Richard Spoor, has been involved in litigation involving the mining industry for more than 30

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years. We are therefore familiar with the mining industry and the impossibility of effecting personal service on the owner or operator of every mine in the country.

- 8 To the best of my knowledge there is no comprehensive list of owners and operators of mines in South Africa with their contact information.
- 9 The Compensation Commissioner for Occupational Diseases ("CCOD" – our firm has extensive and ongoing dealings with the CCOD, particularly arising out of the settlement of the silicosis litigation in Nkala) has to investigate mines to verify that they are still existing and operating, in order to recover levies from them in terms of the Occupational Diseases in Mines and Works Act ("ODMWA"). But even the CCOD does not know which mines are still operating.
- 10 The best list that is publicly accessible is the lengthy list of 'operating mines' in each province of South Africa, on the Department of Mineral Resources and Energy website. It does not include email addresses, and it is unclear whether these mines are still operating or that the list includes their latest details. I estimate from these lists that there are about 374 mines in North West, 316 in Northern Cape, 235 in Mpumalanga, 188 mines in Gauteng, 179 in Eastern Cape, 148 in Limpopo, 78 in Free State, 12 in Kwa-Zulu Natal and 12 in Western Cape, with a sum total of about 1542 mines in South Africa.
- 11 The Applicant has provided me with copies of the list of 132 mines 'exempted' under the regulations made in terms of the Disaster Management Act, that was given to the Applicant by the DMRE. I am aware from reading the answering affidavit of the Minerals Council in a different matter that this list only includes

129 mines (some are duplicates) and that 72 of these mines are not Minerals Council members. These are by no means all of the mines in South Africa.

- 12 Together with colleagues I have attempted to trace these 72 mines in order to obtain their email addresses, contact numbers and physical addresses. Some are presumably not correctly labelled by the DMRE and others have been exceptionally difficult to locate online. A copy of the details we have managed to locate are attached and marked **GK1**.
- 13 I have attempted to access the DMRE's SAMRAD online system for the public to examine current mining rights and permits. It is not working correctly, and I cannot access it. It refers to an email error and will not let me log in. I have had the same problem with the SAMRAD system for many years working as an attorney. I do not think I have ever seen it work correctly.
- 14 From the information available on the DMRE website there are potentially hundreds (if not more) of operating mines in South Africa.
- 15 In the silicosis class action litigation it took months to collate contact and other information on operating gold mines with the assistance of a team of professional researchers. The requirement to trace every mine in South Africa dwarfs that task, particularly as many of the gold mine details we obtained in 2012-2015 are no longer up to date. Many mines have changed ownership, names or have closed.

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- 16 I am advised by the Applicant that the DMRE does not use an updated email mailing list, presumably for these reasons.
- 17 I have examined online resources and none of them list all the mines that are listed in the DMRE website. None contain all this contact information.
- 18 According to the Minerals Council, 90% of all mines in South Africa fall under its membership. I cannot locate a document on their website that details this information apart from top-level details of big companies. I submit that in the current urgent circumstances, service on the Minerals Council is sufficient to bring this application to the attention of its members.
- 19 I submit that it is impossible to serve copies of the urgent application papers personally on every mine potentially affected by the relief. It would be a mammoth task to do this even on a non-urgent basis, and would take many months. I submit that it is necessary to ask this Honourable Court for directions in terms of Rule 4(1)(c) to effect substituted service on all the affected parties.
- 20 It would be my submission that owing to the current Covid-19 lockdown that further limits movements of people around South Africa, the best mechanism of ensuring that the application is brought to the attention of all affected mines is publication of the application and supporting documents on a digital platform or platforms.
- 21 These should include –

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- 21.1 The Department of Cooperative Governance and Traditional Affairs website that includes a portal to the Covid-19 regulations, notices and directions;
- 21.2 The website of the Minerals Council; and
- 21.3 AMCU's website.
- 22 In addition it would be appropriate to publish a short notice in the Business Day and in the Business Report supplement that accompanies a number of the newspapers published by Independent Media around the country. The notice should refer readers to the websites mentioned above.
- 23 I further confirm that I personally witnessed the Secretary General of the applicant, using WhatsApp video conferencing, take the prescribed oath regarding his founding affidavit in front of Bhavna Ramji, an admitted attorney practicing at the Casual Workers Advice Office and a commissioner of oaths, swearing that its content is true and correct on 20 April 2020 just before 16h45. I possess a recording of this video conference and am willing to make a copy available to this Court should it be required.
- 24 Wherefore I pray for the relief sought in Part A of the notice of motion.



GEORGE IB KAHN

I certify that the Deponent has acknowledged that he knows and understands the contents of this Affidavit which was sworn to before me at White River on this 20 day of April 2020, and that the provisions of the Regulations contained in Government Notice R1258 of 21 July 1972 (as amended) were complied with.



[Handwritten signature]
 (DS) 7141836-8 591
 OB NKDS?

COMMISSIONER OF OATHS

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“GK1”

No.	Company	Telephone	Physical Address	Email Address
1	Zinoju Coal (Pty) Ltd	034 212 1455	Coal Fields, 3000 Dundee, KwaZulu-Natal - South Africa	No email. Fax: 034 212 1232
2	Fortitude Mining Holdings		2nd Floor Alice Lane 3, 11 Alice Lane, Sandton, Johannesburg, South Africa.	
3	Lengana Health Services	086 566 7272 / 016 428 2566 / 084 822 9441	Corporate Office: 1st Floor, Samancor Hse, 88 Marshall Street, Johannesburg, 2000, South Africa Mining Office: 211 Ring Road, Duncanville, Vereeniging, 1939, South Africa	admin@lengana.co.za / johan@lengana.co.za
4	William Patrick Bower Colliery (Proprietary) Limited			
5	Beryl Coal	010 591 0502	2 Maude Street, The Forum, 7th Floor Nelson Mandela Square Sandton, 2164, South Africa.	bontlem@brylholdings.com
6	Andalusite Resources Rexton Holdings	011 467 8601	Building A, Regent Hill Office ark. Corner Leslie and Turley Roads, Lonehill, 2192, Gauteng.	No email. Fax: 011 467 9115
7	Rexton Holdings	011 832 2543	3rd Floor, Nedbank Building, 81 Main Street, Marshalltown, Johannesburg	Lvanvuuren@siyandaresources.co.za Connie.monosi@siyandaplatinum.com gontsethalithah.sekudu@siyandaplatinum.co.za
8	Siyanda Bakgatla Platinum Mine	011 832 2543	3rd Floor, Nedbank Building, 81 Main Street,	

			Marshalltown, Johannesburg	
9	Shiva Coal		Block A, Empire Park 55 Empire Road Parktown, 2193 South Africa	
10	Ringside Iron Ore			
11	Proxor (Pty) Ltd.	076 913 8616	147 Sandappel str Pretoria North Gauteng South Africa	
12	Boeta Botha mine			
13	Amava Mining Investments	011 234 8153	Rivonia Close, 322, Rivonia Blvd, Sandton, 2128	info@amava.co.za
14	Eagle Granite	012 254 1181	Plot 665, Geluk, Britz, Hartebeespoort, 2128, Gauteng, RSA	
15	Misty Fall 111			
16	Manganese Minerals			
17	Bushmanland Minerals	054 495 0090	Plot 117, Pitsie, Kakamas	Christine@bmcc.co.za
18	Emang Manganese			
19	Long Thuan Investments	084 613 570799	Group 6, Hamlet 3, Phuoc Khanh Commune, Nhon Trach District, Dong Nai Province, Vietnam	Info@longtuan.com.vn
20	Pfuko Resources	011 000 000	Block A, Eco Fusion 4, 300 Whitch- Hazel Avenue, Techno Park, Centurion 0057	administrator@pfukogroup.co.za
21	Randyorksa	011 463 9000	63 Mount Street, Bryanston, Sandton.	Zelda@randyorksa.com
22	Bayete Collieries	082 778 6708		mohamedm@bayetegroup.com
23	Siyanda Coal	0132955287	Hendrina Road Witbank, 2250 South Africa	

24	Kangra Coal	011 783 7996	7th Floor, 13 Fredman Drive, Fredman Towers, Sandton, 2196, Johannesburg, South Africa	info@kangracoal.co.za	
25	Mashala Mining Group				Commented [DP1]: Can only find Mashala Resources (Pty) Ltd. 0178011300 / 011 881 1420
26	Thari Mining				262 Witbank Plot 2351 Ermelo Mpumalanga
27	Zulu Anthracite Colliery	035 874 7300 / 011 783 7996	7th Floor, Fredman Towers, 13 Fredman Drive, Sandown, Johannesburg, Gauteng, 2196, South Africa	info@zulac.co.za	Commented [DP2]: Could only find: Thari Maphatse Mining (Pty) Ltd Cell Number: +27 (079) 179 7899 E-Mail: selloditshwene@gmail.com Stand No 601B, Kanana, Rustenburg, North West Province.
28	Menarj	011 783 7996	7th Floor, Fredman Towers, 13 Fredman Drive, Sandown, Johannesburg, Gauteng, 2196, South Africa	Info@menar.co.za	Commented [DP3]: Same details as Zulu Anthracite
29	M3P Mining & Engineering				
30	Kitso Manganese Mine			bevbaker@mnmine.com	Commented [DP4]: Potential
31	Foskor	011 347 0600 / 015 789 2000	Head Office: Block G, Riverview Office Park, Janadel Road, Midrand Mining Division: 27 Selati Road, Phalaborwa, Limpopo Province, 139	Stanleyemo@foskor.co.za	
32	WMA Africa				
33	Future Coal	082 373 4619		mpryde@worldonline.co.za	
34	KBH Industrial	011 783 7530	Block C Bryanston Office Park, 13 Bruton Rd, Bryanston, Sandton, 2191	info@kbh.co.za	
35	Lidino Trading 514	053 723 9800	1 Frikkie Meyer Road, Kathu, 8446	annelize.strauss4@gmail.com	

36	HCI Coal	011 448 4900	19 Richards Dr, Halfway House, Midrand, 1685	
37	Alexkor RMC Joint Venture	027 831 8300	Orange Road, Alexander Bay, 8290, South Africa	percyk@alexkor.co.za tsum@alexkor.co.za lerat@alexkor.co.za joyc@alexkor.co.za
38	Masemanzi Mining Holdings	013 656 2976	13 & 15 Langa Crescent Corridor hill, Emalahleni 1035	info@masemanzimining.co.za
39	Xakwa Coal (Pty) Ltd	012 342 4721	1077 Arcadia Street, Pretoria, Gauteng, 0010, South Africa	
40	Risenga Colliery			
41	Black Wattle Colliery	013 246 9013	FONTEIN STREET BETHAL ROAD MIDDELBURG, Mpumalanga, 1055 South Africa	
42	Sepflour			
43	Africoal SA	033 267 7533	11 HIGHMOOR ROAD KAMBERG 3300 PO BOX 11201 KAMBERG 3300	pauline@africoal.co.za
44	Marlin Holdings	011 883 3600 / 011 775 5000	21 Impala Road Chislehurst Sandton, 2146 South Africa	
45	Izimbiwa Coal		SHANDUKA CENTRAL OFFICE KRUGERDAM RD MIDDELBURG, Mpumalanga, 1055 South Africa	
46	Ilima Coal Company (Pty) Ltd	017 843 1020	OFFICE 303 SMOKEY MT OFFICE VILLAGE ROUTE N4 WITBANK, Mpumalanga, 1034 South Africa	
47	Universal Coal New Clydesdale	012 460 0805	467 Fehrnsen Street	info@universalcoal.com

Commented [EL5]: No information

Commented [EL6]: Same company as number 53

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			Brooklyn 0181 Pretoria	
48	Cape Lime			
49	Lurco Group (Pty) Ltd	011 234 0664	23 Melrose Blvd 3rd Floor, Melrose Arch Johannesburg South Africa	
50	Msobo Coal	017 861 8000	50 Hay Street, Breyton, Mpumalanga	Admin@msobo.co.za
51	Overlooked Colliery (Pty) Ltd	013 246 8555 / 0861 325 242	22 SAMORA MACHEL STREET MIDDELBURG, Mpumalanga, 1050 South Africa	
52	Sbunt			
53	Nokeng Fluorspar Mine	012 622 9400	Riverside Office Park Hennops House First Floor 1303 Heuwel Avenue Centurion 0157	info@sepluor.co.za
54	Marico Chrome Corporation (Pty) Ltd	018 350 9906	ALLEWYNSPOORT 29 JP, DRIEKOP 14 JP, GOUDINI 30 JP 2 & 3, STRYDFONTEIN 125 JP A North West	
55	Ikwezi Mining	087 897 4846	Thornhill Office Park Building 5, 94 Bekker Road Vorna Valley, Midrand Johannesburg South Africa	info@ikwezimining.com
56	Siyanda Resources	011 832 2543	12th Floor, Nedbank Building, 81 Main Street, Marshalltown, Johannesburg, South Africa	info@siyandaresources.co.za
57	Puckree Group	011 615 9279	45 Arbroath Road, Bedfordview, 2007	info@puckree.co.za
58	Mineral Sands Resources	021 525 1900	1st Floor, Block A, The Forum North Bank Lane CENTURY CITY 7441	

Commented [EL7]: No info on Sbunt mining, except a contract manager employed by Sbunt mining – no details given though

Commented [EL8]: Info from DMRE wesbite

Commented [EL9]: ? Not sure if this is the correct one

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			Cape Town	
59	Bosveld Mines		KLIPWAL MINES KLIPWAL GOLD MINE FARM 49U PONGOLA DISTR PIET RETIEF, Mpumalanga, 2380 South Africa	Commented [EL10]: Hardly any information found
60	The East Side Coal Company	013 690 3131	JENSHA MININGSULTANTS CC 34 OR TAMBO RD WITBANK, Mpumalanga, 1034 South Africa	
61	Silver Unicorn and Minerals	011 463 0514	35 Ballyclare Drive, Golden Oaks Building, 2nd Floor Ballyoaks Office Park Bryanston, 2021 P O Box 1963, Cramerview, 2060	info@malahienicoal.co.za
62	Tendele Coal Mining	082 895 1378	1st Floor, Block C, Parc Nouveau, 225 Veale Street, Brooklyn, 0181, Gauteng, RSA	Commented [EL11]: Need to double check this
63	Gold One Africa Limited	011 730 7600	CNR CLOVER FIELD AND OUTENIQUA RD SPRINGS, Gauteng, 1559 South Africa	Commented [EL12]: Does not have website
64	Manganese Metal Company (Pty) Ltd	013 759 4600	15 Heyneke Street, Mbombela PO Box 323, Mbombela, 1200, South Africa	
65	Idwala Industrial Holdings Ltd	011 795 4900	Blueberry Office Park, Block A Apple Street Randpark Ridge, Randpark, 2157	
66	Petmin Holdings	011 706 1644	37 Peter Place, Bryanston, Johannesburg, 2191	ethics@petmin.co.za / bradley@petmin.co.za
67	Buffalo Coal	011 656 3210	16 Pieter Street, 1st Floor, Building 1, Manhattan Office Park	info@buffalocoal.co.za

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			Centurion Gauteng	
68	UWR Management			
69	Windsor SA	011 814 3636	3 Industria Drive, Vosterskroon, Nigel, 1490	windsor@icon.co.za
70	Jubilee Metals Group Plc	011 465 1913	Jigsaw Office Park, Ground Floor Support Services, 7 Einstein St, Highveld Techno Park, Centurion, 0157	info@jubileemetalsgroup.com
71	Afarak South Africa (Pty) Ltd	011 668 3800	267 West Street, Centurion, South Africa	
72	Semane Engineering Solutions (Pty) Ltd	011 891 1600	10 St Andrews Rd, Parktown, Johannesburg, 2193	corporate@semane.com

Commented [EL13]: Google changed this to water management – no details

Commented [EL14]: We need to find out which Windsor this is. There are 2.
Windsor SA PGM Project – this falls under Jubilee Metals Group Plc
Windsor Metals (Pty) Ltd – I have entered their details

IN THE LABOUR COURT OF SOUTH AFRICA
(HELD IN JOHANNESBURG)

CASE NO:

In the matter between:

**ASSOCIATION OF MINEWORKERS AND
CONSTRUCTION UNION**

Applicant

And:

MINISTER OF MINERAL RESOURCES AND ENERGY

First Respondent

CHIEF INSPECTOR OF MINES

Second Respondent

**MINISTER OF COOPERATIVE GOVERNANCE
AND TRADITIONAL AFFAIRS**

Third Respondent

MINERALS COUNCIL SOUTH AFRICA

Fourth Respondent

NOTICE OF INTENTION TO OPPOSE

BE PLEASE TO TAKE NOTICE that the Fourth Respondent hereby gives notice of its intention to oppose this application.

TAKE NOTICE FURTHER that the Fourth Respondent appoints **EDWARD NATHAN SONNENBERGS INC. (ENSafrica)** of the below stated address, as its attorneys of record for the matter. For the purpose of this matter, the Fourth Respondent shall accept service of all notices and processes herein by e-mail to Willem le Roux at wleroux@ensafrica.com and Warren Hendricks at whendricks@ensafrica.com.

DATED at **SANDTON** on this the **20th** day of **APRIL 2020**.

This notice has been electronically transmitted with no signature.

**EDWARD NATHAN SONNENBERGS INC.
(ENSafrica)**

Per: Willem le Roux / Warren Hendricks

Attorneys for the Fourth Respondent

The MARC

Tower 1

129 Rivionia Road

Sandton

Johannesburg

2196

Tel : 011 269 7600

Willem le Roux : 082 772 5267

Warren Hendricks : 082 788 0733

Email : wleroux@ensafrica.com /
whendricks@ensafrica.com

(Ref : WP le Roux / W Hendricks)

To:

THE REGISTRAR OF THE ABOVE HONOURABLE COURT

JOHANNESBURG

Urgent Roll section

Ms F Ntuli

Email - fntuli@judiciary.org.za

Cell - 082 778 6295

SERVICE BY EMAIL

And To:

RICHARD SPOOR INC. ATTORNEYS

Attorneys for the Applicant

Eton Building, Sherborne Sq

5 Sherborne Road

Parktown, Johannesburg11

Tel: 011 482 6081 / 013 751 1662

Cell: 082312 9406 / 082 851 6103

Email: Elgene@rsinc.co.za and George@rsinc.co.za

SERVICE BY EMAIL

(Please contact us on email or cellphone during lockdown)

Ref: Roos/Kahn/AMCU Covid-19

George Kahn

From: Pieter Alberts <Pieter.Alberts@dmre.gov.za>
Sent: Monday, 20 April 2020 18:15
To: Elgene Roos; George Kahn
Cc: tletageng@justice.gov.za
Subject: AMCU v Minister of Mineral Resources and Energy & Others

Sirs

Kindly note that the Minister of Mineral Resources and Energy and the Chief Inspector of Mines intend opposing the application.

The State Attorney has been instructed accordingly and you will receive further communication from his office soon.

Pieter Alberts
Chief Director: Legal Services
Department of Mineral Resources and Energy

Pieter Alberts

Legal Services

Tel : 012 444 3288

Email : Pieter.Alberts@dmre.gov.za

Website : www.dmr.gov.za

