## Achievements

- Measured in terms of fatalities, best safety performance recorded in 14 years
- Participation in an industry working group to address issues relating to compensation and medical care for occupational lung disease in the gold mining industry in South Africa
- Moved away from the historic mine hospital-centric, health service delivery model which is curative in nature, to a more pro-active, preventative model of health service delivery. We have seen significant benefits, such as decreased absenteeism, hospitalisation and medical mortality. Tuberculosis rates have also decreased dramatically, while awareness of the human immunodeficiency virus exceeds the national average. See page 67 for more information
- Collaboration with peers in the industry on various government structures to ensure that there is a robust effective mechanism in place to address silicosis-related challenges

## Challenges

- Behavioural aspects in breach of compliance with standards
- Operational stoppages such as section 54/55 instructions continue to hamper production
- Unhealthy behaviour and lifestyles which predispose employees to chronic diseases
- Although tuberculosis rates have declined, it remains one of our top five health risks

### WHY SAFETY AND HEALTH ARE MATERIAL TO Harmony

#### Relevant material issues:

- Keeping our people safe and healthy
- Protecting our licence to operate

At Harmony, the safety and health of our employees and contractors is not only a moral imperative but essential for creating a sustainable, responsible business. Safety, one of our five values, is a key priority. Without a safe and healthy workforce, we cannot be productive and profitable. We aim to eliminate and prevent all fatalities and work-related injuries and illnesses by promoting a culture that gives priority to health and safety.

### LINKS TO RISK

- Loss of life
- Reputation
- Litigation
- Production losses
- Stakeholder relations

### OUR APPROACH

Both our occupational health and safety policy and our health and safety management framework are aligned with the Mine Health and Safety Act in South Africa and mine health and safety legislation in Papua New Guinea. Representatives from all levels of management, union and government are encouraged to participate actively in our health and safety framework. The relevant strategy is guided by our health and safety policy.

Health and safety committees are in place at all our operations to ensure the active participation of all employees in safety management. Safety and health are also agenda items at all union and management engagements. There are currently 34 full-time
health and safety stewards at our South African operations (FY14: 42). The decrease in number can be attributed to the closure of Target 3 and the downscaling of the workforce at several operations following the revision of production plans aimed at restoring these operations to profitability. Our operations have a sufficient number of full-time stewards to deal appropriately with health and safety concerns. The technical committee, on behalf of the board, is responsible for approving and monitoring compliance with our safety and health policy. The social and ethics committee oversees public safety on behalf of the board. Quarterly reports on health and safety are provided to these board committees.

Safety performance, a key performance indicator for management, is monitored to determine remuneration in terms of the safety-related bonuses to be paid.

SAFETY

SAFETY STRATEGY – SOUTH AFRICA AND PAPUA NEW GUINEA

We aspire to zero harm. To achieve this goal, continuous improvement in our safety performance is required. At Harmony, we have a co-operative approach to safety to ensure that the necessary infrastructure and systems are in place; from planning to communication and training. While management holds legal responsibility for safety, in reality it is up to management and employees to take joint responsibility for their actions, to stop work when they believe that a workplace is unsafe and/or to prevent others from acting in an unsafe manner. Continual reinforcement of safe behaviour in the workplace is overseen by line managers and supervisors. Operations have introduced site-specific safe behaviour initiatives as well as behaviour re-enforcement programmes.

The safety strategy can be divided into three categories – short term, medium term and long term.

The short-term strategy comprises visible felt leadership, communication and report reviews:

- Visible felt leadership

Leadership is expected to conduct at least two underground/workplace visits per week, including irregular (shifts outside normal working hours) shifts. Visits to high-risk workplaces are prioritised, while training and coaching are guiding principles during the visits.

- Communication

Safety is a standard agenda item at all meetings throughout the company. Improved safety awareness through pro-active communication at weekly team leader workgroups meetings with the general manager at each mine; the on-going broadcast of safety messages on mine televisions that are placed throughout our operations (surface and underground); and weekly
SAFETY AND HEALTH CONTINUED

communication meetings between the general manager and safety representatives. Each general manager also attends monthly safety mass meetings at their operation.

- **Report reviews**

Weekly reports on the top five safety risks are made to the general manager of each operation. These reports are reviewed with the relevant supervisors and actions are shared with the mining teams. General managers also review repetitive A-hazards reported during the week. An A-hazard is anything that has the potential to cause harm. If an A-hazard is noticed, it requires immediate remedial action – stop, fix or barricade. Exception reports from the various services departments on A-hazards are submitted daily to all general managers for action.

The senior management team conducts monthly, formal safety reviews to assess all major safety risks at the South African operations. Each operation provides information on the relevant controls introduced and action plans to address risks identified to ensure lessons learned are implemented throughout the company.

Part of the short-term safety strategy was the implementation of phase two of the electronic safety management system (Pivot). This system makes safety analyses and trends more readily available to the organisation, enabling more informed decision making and quicker, more pro-active responses to exposures and risks.

The **medium-term strategy** involves the implementation of the fatal risk management system. Eight fatal risks have been identified and for which fatal risk standards with measurable critical controls have been drawn up. These fatal risk standards cover areas of fall of ground, underground tramming, electricity, working at heights, winches, mud-rush and inundation, fire prevention and explosives. The standards have been finalised and signed off by the operational committee at the end of July 2015. The process to roll these standards out across the company commenced in August 2015.

The **long-term strategy** focuses on industry leading practices, namely:

- Separating the employee from the risk or hazard through more extensive barrier controls
- Focusing on embedding a safety-conscious culture
- Ensuring that people are committed to our values
- Sharing of information and the adoption of best proven pro-active safety measures

Safety performance at our Papua New Guinea operations is monitored by Harmony’s south east Asia team. Safety managers at the Papua New Guinea operations report to Harmony’s south east Asia executive committee through regular notifications and formal monthly reports. This committee in turn reports to the technical committee and the board.

SAFETY PERFORMANCE

Relevant Global Reporting Initiative indicators: G4-LA5, G4-LA6 and G4-LA8

Regrettably there were eight fatalities during the year at our South African operations (FY14: 22) and one fatality at our Papua New Guinea operations (FY14: 0).

<table>
<thead>
<tr>
<th>Date</th>
<th>Operation</th>
<th>Name</th>
<th>Occupation</th>
<th>Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>29 Jul 2014</td>
<td>Doornkop</td>
<td>Mhanjelwa Cebani</td>
<td>Driller</td>
<td>Gravity related fall of ground</td>
</tr>
<tr>
<td>25 Aug 2014</td>
<td>Tshepong</td>
<td>Mmaneo Florsa Muso</td>
<td>Tramming crew supervisor</td>
<td>Trucks, tramming and transport</td>
</tr>
<tr>
<td>6 Dec 2014</td>
<td>Hidden Valley</td>
<td>Maxwell Wani</td>
<td>Fitter and turner</td>
<td>Trucks, tramming and transport</td>
</tr>
<tr>
<td>13 Jan 2015</td>
<td>Kusasalethu</td>
<td>Mosoeu Ntsutheleng</td>
<td>Team leader</td>
<td>Gravity related fall of ground</td>
</tr>
<tr>
<td>18 Jan 2015</td>
<td>Masimong</td>
<td>Michael Chobeng</td>
<td>Team leader</td>
<td>Trucks, tramming and transport</td>
</tr>
<tr>
<td>4 Apr 2015</td>
<td>Unisel</td>
<td>Bernardo Ernesto Cuambe</td>
<td>Engineering Assistant</td>
<td>Caught in headgear sheave wheel</td>
</tr>
<tr>
<td>30 May 2015</td>
<td>Bambanani</td>
<td>Mariselunes Thibello</td>
<td>Driller</td>
<td>Gravity related fall of ground</td>
</tr>
<tr>
<td>14 Jun 2015</td>
<td>Brand 1A Ventilation Shaft</td>
<td>1. Sello Jacob Bobejaan</td>
<td>Security officers</td>
<td>Overcome by carbon monoxide</td>
</tr>
<tr>
<td></td>
<td>(closed shaft)</td>
<td>2. Thapelo Andries Mofokeng</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SAFETY IN ACTION
Harmony prioritises safety and has a number of measures in place to ensure that safety remains a priority at all levels of the company:

- Management spends a great deal of time in the workplace coaching employees on ways to work safely. These conversations are shaped by messages agreed by management in consultation with the unions
- External safety initiatives or leading practices are reviewed and implemented. ‘Champions’ have been nominated for each aspect of leading practice for mining industry occupational safety and health leading practice. Each champion must attend all industry meetings and ensure that all relevant information is disseminated to the operations
- Comprehensive safety reporting allows us to track incidents, measure safety performance and report back to mines on performance. An electronic safety management system (Pivot) is used for this purpose as mentioned under the short-term safety strategy
- Safety roles and accountabilities are clearly defined in job descriptions and used to measure the performance of teams. This ensures that every person at Harmony understands how they can work safely
- Risk assessments are performed before any work is done and a change management procedure is being aggressively implemented
- Mining and engineering committees have been established to ensure that company standards on various mining and engineering work are being drawn up, approved and distributed to operations.

Fatalities

<table>
<thead>
<tr>
<th></th>
<th>FY15</th>
<th>FY14</th>
<th>FY13</th>
<th>FY12</th>
<th>FY11</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Africa</td>
<td>8</td>
<td>22</td>
<td>9</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>Papua New Guinea</td>
<td>1</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>1</td>
</tr>
<tr>
<td>Group total</td>
<td>9</td>
<td>22</td>
<td>9</td>
<td>10</td>
<td>16</td>
</tr>
</tbody>
</table>

In line with our values and policies, Harmony provides the family of the deceased with counselling and financial assistance. A fund was established in FY14 to support the educational needs of the school-going dependents of all Harmony employees and contractors who lose their lives in the workplace.

The fatal injury frequency rate for our South African operations decreased by 61% to 0.11 per million hours worked (FY14: 0.28). The fatal injury frequency rate for the Papua New Guinea operations for the year was 0.22 (FY14: 0.00) per million hours worked. The lost-time injury frequency rate for the South African operations was 9.57 per million hours worked (FY14: 8.09), a deterioration of 18%, mainly as a result of the Kusasalethu fire incident where 152 people were classified as lost time injuries, while that for the Papua New Guinea operations was 3.79 (FY14: 0.00). In all, 24 514 shifts were lost due to occupational injury in South Africa (FY14: 25 338) and 24 in Papua New Guinea (FY14: 0).

Fatal injury frequency rate (per million hours worked)

<table>
<thead>
<tr>
<th></th>
<th>FY15</th>
<th>FY14</th>
<th>FY13</th>
<th>FY12</th>
<th>FY11</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Africa</td>
<td>0.11</td>
<td>0.28</td>
<td>0.11</td>
<td>0.12</td>
<td>0.18</td>
</tr>
<tr>
<td>Papua New Guinea</td>
<td>0.22</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.22</td>
</tr>
<tr>
<td>Group total</td>
<td>0.11</td>
<td>0.26</td>
<td>0.10</td>
<td>0.11</td>
<td>0.18</td>
</tr>
</tbody>
</table>

Lost-time injury frequency rate (per million hours worked)

<table>
<thead>
<tr>
<th></th>
<th>FY15</th>
<th>FY14</th>
<th>FY13</th>
<th>FY12</th>
<th>FY11</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Africa</td>
<td>9.57</td>
<td>8.09</td>
<td>6.03</td>
<td>7.54</td>
<td>8.67</td>
</tr>
<tr>
<td>Papua New Guinea</td>
<td>3.79</td>
<td>0.00</td>
<td>0.12</td>
<td>0.45</td>
<td>0.45</td>
</tr>
<tr>
<td>Group total</td>
<td>9.24</td>
<td>7.54</td>
<td>5.46</td>
<td>6.86</td>
<td>8.25</td>
</tr>
</tbody>
</table>

Shaft management meets weekly to discuss and document operational and business risks. Remedial action plans are then drafted to mitigate the risks identified.
Pivot safety management system

The training, roll-out and implementation of the Pivot safety management system (Safety phase 2 – group 1) has been completed. Harmony trained 1 050 users for this phase and the system is actively being used. A super-user workgroup, which consists of a specialised user per operation, has been established to assist all operations with support.

The next phase of the project (group 2) commenced on 19 January 2015. Group 2 consists of the remainder of the occupational health and safety management system modules that were not implemented in group 1. Below is a summary of the modules to be implemented:

- Management and administration (module 1)
- Procedures, code of practice, managerial instructions (module 3)
- Occupational health and safety training (module 4)
- Personal protective equipment (module 5)
- Purchasing and contractor management (module 6)
- Communication (module 7)
- Emergency preparedness (module 8)

The project team is currently busy with the Group 2 requirement analysis. The project is expected to be completed by the end of October 2015.

The Pivot safety management system is a tool which enables all operations to identify risks on a daily basis through various disciplines. Once these deviations have been captured, the system identifies and highlights hotspot working places through a risk ranking system which enables management to focus immediately on the correct areas. This entails that certain reports will be escalated to a higher level, depending on the risk ranking. The actions manager module ensures that all deviations are assigned to a responsible person for corrective action and follow up.

The system will also ensure effective data analysis and remedial action implementation. The currently implemented Pivot safety management system provides functionality to capture the following at each Harmony operation:

- Baseline risk assessments
- Issue based risk assessments
- Critical task assessments
- Continuous risk assessments:
  - Inspections
  - Audits
  - Task observations
  - Shift boss and engineering foreman logbooks (we are awaiting approval from the Department of Mineral Resources in the Free State for the use of the electronic format logbooks)
- Accident and incident reporting and investigation

Expertra, an external company, has been contracted to review, revise and re-implement the existing occupational health and safety management system.

**SOUTH AFRICA**

The number of Section 54/55 instructions increased to 229 (FY14: 204), mainly as a result of the continuous and increased focus on the South African mining industry by the Department of Mineral Resources. Except for the operations where fatalities and major incidents occurred, no operation was completely stopped as a result of these audits. All other instructions were issued to rectify deviations from mine standards and affected specific sections of the relevant operation.

The total amount of production lost during FY15 which directly relate to section 54/55 instructions is 588 kilograms (18 904 ounces).
Year on year, the fall-of-ground injury frequency rate improved by 18% to 1.26 (FY14: 1.53). There were three gravity related fall-of-ground fatalities in FY15.

**Fall-of-ground injury frequency rate**

<table>
<thead>
<tr>
<th>Per million hours worked</th>
<th>FY15</th>
<th>FY14</th>
<th>FY13</th>
<th>FY12</th>
<th>FY11</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Africa</td>
<td>1.26</td>
<td>1.53</td>
<td>1.29</td>
<td>2.22</td>
<td>1.90</td>
</tr>
</tbody>
</table>

Several safety achievements were recorded during the year. The most significant achievements were as follows:

<table>
<thead>
<tr>
<th>Operation</th>
<th>Achievement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bambanani</td>
<td>6 million rail-bound equipment fatality-free shifts</td>
</tr>
<tr>
<td>Phakisa</td>
<td>5 million rail-bound equipment fatality-free shifts</td>
</tr>
<tr>
<td>Joel</td>
<td>4 million rail-bound equipment fatality-free shifts</td>
</tr>
<tr>
<td>Kusasalethu</td>
<td>4 million fall-of-ground fatality-free shifts</td>
</tr>
<tr>
<td>Free State surface operations</td>
<td>3.25 million fatality-free shifts</td>
</tr>
<tr>
<td>Kusasalethu</td>
<td>3 million rail-bound equipment fatality-free shifts</td>
</tr>
<tr>
<td>South African operations</td>
<td>3 million fatality-free shifts</td>
</tr>
<tr>
<td>South Africa – metallurgy</td>
<td>2.5 million fatality-free shifts</td>
</tr>
<tr>
<td>Hidden Valley</td>
<td>2.5 million fatality-free shifts</td>
</tr>
<tr>
<td>Target 1</td>
<td>2 million fall-of-ground fatality-free shifts</td>
</tr>
<tr>
<td>Target 1</td>
<td>2 million fatality-free shifts</td>
</tr>
<tr>
<td>Harmony One Plant</td>
<td>1.5 million fatality-free shifts</td>
</tr>
<tr>
<td>Phakisa</td>
<td>1 million fall-of-ground fatality-free shifts</td>
</tr>
<tr>
<td>Tshepong</td>
<td>1 million fall-of-ground fatality-free shifts</td>
</tr>
<tr>
<td>Unisel</td>
<td>1 million fatality-free shifts</td>
</tr>
<tr>
<td>Kusasalethu</td>
<td>1 million fall-of-ground fatality-free shifts</td>
</tr>
<tr>
<td>Phakisa</td>
<td>1 million fatality-free shifts</td>
</tr>
<tr>
<td>Masimong</td>
<td>1 million rail-bound equipment fatality-free shifts</td>
</tr>
<tr>
<td>Doornkop</td>
<td>1 million rail-bound equipment fatality-free shifts</td>
</tr>
</tbody>
</table>

**PAPUA NEW GUINEA**

During the year the joint venture steering committee approved the implementation of the International Council on Mining and Metals guidelines to safety reporting. The International Council on Mining and Metals safety reporting standards are well aligned with Harmony’s reporting standards in South Africa and reporting in accordance with the International Council on Mining and Metals standard will commence in FY16.

The Papua New Guinea operations recorded one fatal accident and 17 lost-time injuries during FY15. The fatal accident occurred when a wheel-loader operator reversed into the access road at the Hidden Valley process plant.

During FY15, the sling load (helicopter) procedures and standards were reviewed and amended after construction material fell out of the sling net while in transit.

During the year there were several near-miss incidents that are of major concern. The mountainous terrain, high rainfall and quickly changing weather conditions in Papua New Guinea which contribute to landslides and/or slope failures make aviation and vehicle use much riskier activities.

Vehicle use in Papua New Guinea remains an extremely high-risk activity both on-site, which is within our control, and off-site, on public roads, where contractors and employees come into contact with the public and their vehicles and where we have less
control. While we may have limited or no control over the natural environmental factors that contribute to the risk involved in operating vehicles, we do have some measure of control over driver skills and competency, i.e., the ability of the driver to adapt behaviour to changing conditions, and the enforcement of standards and procedures, which can exacerbate or lessen the risk in operating a vehicle.

There were several near-miss vehicle incidents during the year and several resulted in minor injuries. Further work undertaken during the year to mitigate the risk of vehicle-related incidents included:

- revising the specifications of logistics trucks used on the Hidden Valley mine access road by limiting this to 6×6 trucks only
- ensuring qualified driving trainers are supplied by the contractor
- declaring mandatory stops for all trucks prior to the hazardous inclines on the Hidden Valley mine access road to check trailers, radio communication, escort vehicles, etc.

Natural landslides are a relatively common occurrence in Papua New Guinea and together with potential man-made landslides (slope failures associated with open-pit mining) pose a significant safety risk to our operations in Papua New Guinea. During the year a real-time slope stability radar monitoring system was implemented at Hidden Valley and the eastern wall failure and other smaller failures were well managed throughout the year.

The Chief Inspector of Mines’ office however did impose restrictions due to the risk of possible slope failures, to mining operations in one area which affected mining flexibility. Specific geotechnical risk assessments are undertaken for all work sites in Papua New Guinea and associated mitigation plans are updated at least once a year.

PUBLIC SAFETY

In South Africa, the board reviewed the social and ethic committee’s responsibility in terms of the Act with regard to the monitoring of safety and in future, the committee will receive quarterly reports from management on public safety. Refer to the social and ethics committee report on page 22.

Brand 1 methane explosion incident

A methane explosion occurred at the Brand 1A ventilation shaft in Welkom, which was being rehabilitated as part of Harmony’s extensive rehabilitation programme underway in the Free State.

The accident occurred as a result of the ignition of methane within the explosive range in the shaft barrel when reinforced concrete material was thrown down. Given the presence of flammable gas and methane in particular, Harmony is re-drafting its rehabilitation procedure regarding the filling up of redundant shafts with inert material. Extensive testing for the presence of flammable gas prior to backfilling will be undertaken at all shafts scheduled for rehabilitation.

A special operations centre was set up for the reporting of any damage sustained as a result of this incident; in all 1,122 reports of damage to properties were received. All damage to houses and property reported is being repaired at an estimated cost of R25 million.

A permanent plug was subsequently designed for the Brand 1A shaft to prevent any such explosions in future.

SAFETY OBJECTIVES FOR FY16

Our focus will remain on drastically reducing our fatal accident rate with the ultimate aim of having zero fatalities. We know that safety must be approached holistically. We are aiming for a 38% year on year improvement in the total accident and injury frequency rates at the South African operations. The implementation of the electronic safety management system (Pivot) will assist in the analysis of accident trends as well as workplace risk rankings. Management will maximise the use of the information available to ensure that the necessary attention and action are given to workplaces in need thereof.

Behavioural change remain a challenge and we will continue with our strategy to improve both leadership behaviour and our safety messaging to give effect to a long-term shift in thinking and behaviour in terms of safety.
HEALTH

Health strategy

Relevant Global Reporting Initiative indicators: G4-LA7 and G4-LA2

South Africa

Harmony’s proactive health strategy focuses on employee well-being, and improving work attendance and individual capabilities. This strategy aims to prevent illness and/or identify disease early through medical surveillance, active case finding, early detection and treatment as part of an integrated management healthcare system.

Harmony hosted the World Tuberculosis Day on 25 March 2015 at our Doornkop mine in collaboration with the Mine Health and Safety Council. The Department of Mineral Resources and the provincial health department were also represented at the event. Harmony also commemorated World Acquired Immune Deficiency Syndrome Day on 5 December 2014 at Phakisa with the support of the Free State departments of Mineral Resources and of Health.

In the Free State region, Harmony participated in the World Tuberculosis Day celebrations by hosting the Member of the Executive Council for Health at Joel as part of the dialogue with the employees and government representatives. On 6 May 2015, Harmony was invited by South African Business Coalition on Health and Acquired Immune Deficiency Syndrome in the Free State to share best practice in tuberculosis management. We also presented our human immunodeficiency virus in the workplace programme at the International Acquired Immune Deficiency Syndrome Conference 2014 in Melbourne. Our proactive approach to healthcare over the past five years has started delivering the expected benefits. The Harmony healthcare programme provides primary, secondary and tertiary healthcare services to all employees, through company-managed healthcare facilities and medical aid membership, as well as by means of external healthcare providers.

Medical surveillance is on-going at dedicated centres where 42 570 medical examinations were conducted during the year (FY14: 49 214).

Harmony invested more than R100 million in rolling out and establishing seven health hubs, medical surveillance systems (Pivot), clinical systems as an electronic health record system in line with company electronic data solution strategy, data warehousing, predictive analytics, research and service transformation initiatives. Further focus on people-skills development, transformation and service delivery is expected to have a positive impact on team effectiveness and alignment with the strategy.

Harmony has successfully moved away from the historic mine hospital-centric, health service delivery model which is curative in nature, to a more pro-active, preventative health service delivery model. This decentralised service continues to bring primary care-based services as close as possible to the operations, and is being delivered through seven health hubs and two primary health centres. As a result, Harmony closed the Ernest Oppenheimer Hospital and associated pharmacy in Welkom on 22 December 2014 and no longer operates a hospital. This is in line with National Health Insurance strategy and these health hubs provide integrated, proactive healthcare to employees and contractors, in close proximity to the mine, improving the quality of healthcare available and decreasing the costs of centralised healthcare services.

The benefits of these health hubs include:

• Alignment with proposed national health insurance processes and requirements
• Compliance with the requirements of the Department of Mineral Resources
• Facilitation of individual risk profiling, proactively managed by a significantly enlarged, multi-disciplinary team
• Active disease case-finding
• On-site case management
• Continued surveillance and close monitoring of diseases
• A holistic approach to providing healthcare
• Providing a proactive employee assistance programme
• Improved health insurance cover for most employees, including contractors
• Improved quality assurance through health teams at operations
• A decrease in the fixed costs of healthcare delivery through expensive and under-utilised old mine hospitals
• A decrease in the number of shifts lost per medical visit or time spent at the central medical facilities
• A reduction in the sick absenteeism rate and a 14% reduction in health-related absence since January 2014
A marked decrease in the hospitalisation rate
A more focused approach to medical disability
A decrease of 10% in the rate of medical mortality
An increase in human immunodeficiency virus counselling and testing offering from 49% to 70%
Increase – from 39% to 60% – in the number of employees knowing their status

The lag in the certification process of occupational lung diseases by the Medical Bureau of Occupational Diseases remains a major challenge in the mining industry and for the Department of Health. However, the mining industry is collaborating with the department to find a sustainable solution. The tuberculosis incidence rate in South Africa and Harmony remains alarmingly high compared with the World Health Organisation benchmark, though the trend at Harmony is moving in the right direction. Motivating employees to confirm their status, despite perceived stigma and confidentiality issues, remains one of the biggest challenges and is one that we are tackling head on.

In FY15, we set a new target for health-related absence to include sick absenteeism. A new healthcare focus area was introduced – an initiative to ensure 28% more people are fit for work at the operations. This initiative revisited the reasons for absence from work and a new definition of sick absenteeism has now been established; it has been broadened and re-defined to include all health-related absence from work. This revised definition now includes mine-accident sick leave, mine-accident hospitalisation, permanent disability, occupational health assessments, and screening to determine heat tolerance. The initiative to profile individual health risks will incorporate all of these risk factors as critical elements for future productivity initiatives.

A very successful “At-work” management programme was introduced at the health hubs in collaboration with other service departments, such as human resources. For the past year more than 8 500 individual medical cases were reviewed by a team of healthcare professionals. The aim of this programme is to early-identify potentially chronically ill employees, to review and monitor their medical condition closely to ensure their early return to work as healthy, productive employees.

The health-related absence from work (14% reduction from January 2015 and 9.5% reduction year on year), indicates overall success at operations, if the full health-related absence set of reasons is analysed and managed at individual operations.

PAPUA NEW GUINEA

In Papua New Guinea, the provision of full-time primary healthcare and occupational health surveillance to employees, dependants and the local community is provided by medical centres at Hidden Valley, Wafi and Wau. The Wau centre is only available to dependants and community members for emergencies, while four community health facilities provide services at Babuaf (near Wafi) and Nauti, Kwembu and Winima (near Hidden Valley).

Upper respiratory tract infections remain one of Harmony’s main medical issues in Papua New Guinea with nearly 2 719 presentations to the medical centres. An integrated business information system provides administrative functions for health, safety, risk management and human resources. Medical registers are used to track and review each patient’s progress from the first visit through to the final treatment.

A total of 13 715 health examinations took place at the Morobe Mining Joint Ventures’ medical centres during FY15 (FY14: 15 726), of which 3 467 (FY14: 3 584) were random drug and alcohol tests.

HEALTH PERFORMANCE

Healthcare delivery

In South Africa, membership of a medical scheme is compulsory for all Category 9(+) employees and is voluntary for Category 4 – 8 employees. Approximately 6 770 employees participated in medical schemes in FY15 (FY14: 6 400), with Harmony subsidising these costs by an amount of R11 million per month (FY14: R10 million per month).

In all, 21 780 Category 4 – 8 employees have so far elected not to join a medical scheme. Instead they receive comprehensive health services from mine medical facilities and associated preferred providers at no cost to this category of employee.

Harmony undertakes active case-finding and screening for employees as well as active disease management in respect of chronic conditions who are not members of a medical scheme. Approximately 8 600 (FY14: 10 202) employees are on chronic medication, with one third of these employees being treated for two or more chronic conditions. Chronic conditions include hypertension, human immunodeficiency virus or acquired immunodeficiency syndrome, diabetes, asthma and tuberculosis.
Tuberculosis

Tuberculosis is recognised as one of the most pressing health concerns in South Africa and the gold mining industry. Harmony’s tuberculosis control programme is in line with the relevant guidelines and prescriptions of the World Health Organisation. It is also in line with the national tuberculosis strategic plan in South Africa, which is focused on an integrated approach to addressing human immunodeficiency virus or acquired immunodeficiency syndrome, tuberculosis and sexually transmitted diseases, and with the Mining Charter which covers silicosis as part of the human immunodeficiency virus or acquired immunodeficiency syndrome and tuberculosis programme in its management approach.

Harmony’s tuberculosis programme focuses on early case findings, directly observed therapy short-course, chemotherapy, radiological tuberculosis screening and hospitalisation until sputum conversion. In addition, various measures are implemented over and above the national tuberculosis strategic plan, such as identifying early tuberculosis resistance through specialised generic and biochemical tests and analysis, and investigative diagnostic tests for early detection.

A total of 1 140 (FY14: 1 022) ultraviolet lights for infection control have been installed in areas of high risk for tuberculosis infection, including the newly-established health hubs. Ultraviolet lights sterilise the air and reduce the risks of inhaling micro-organisms, including the tuberculosis germ called mycobacterium tuberculosis that is spread from person to person through the air. Employees exposed to dusty work environments are screened annually by means of a chest X-ray in order to detect tuberculosis infection.

Continuous monitoring and education are conducted at the health hubs which oversee major campaigns as per the national health calendar. The completion of an annual individual tuberculosis questionnaire has become standard practice in recent years.

Among employees, a total of 288 cases of tuberculosis were certified (FY14: 353) in South Africa. This figure includes contractors, who have also been included in the full tuberculosis programme since 1 August 2013 so as to proactively contain and prevent any further spread of tuberculosis, and to achieve a higher cure rate and lower tuberculosis incidence rate.

There has been a significant decrease in the number of new tuberculosis cases since the inception of the proactive healthcare strategy in FY10. This downward trend is depicted below:

Cases of tuberculosis

<table>
<thead>
<tr>
<th></th>
<th>FY15</th>
<th>FY14</th>
<th>FY13*</th>
<th>FY12*</th>
<th>FY11*</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Africa</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Certified</td>
<td>288</td>
<td>353</td>
<td>629</td>
<td>568</td>
<td>973</td>
</tr>
<tr>
<td>New cases</td>
<td>621</td>
<td>568</td>
<td>678</td>
<td>906</td>
<td>1 201</td>
</tr>
</tbody>
</table>

* Evander has been excluded from the FY11 – FY13 figures for comparison

Tuberculosis incidence

<table>
<thead>
<tr>
<th></th>
<th>FY15</th>
<th>FY14</th>
<th>FY13</th>
<th>FY12</th>
<th>FY11</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY10</td>
<td>3 024</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY11</td>
<td>2 776</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY12</td>
<td>2 019</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY13</td>
<td>1 834</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY14</td>
<td>1 620</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY15</td>
<td>1 887</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Three (FY14: one) new tuberculosis cases were reported during the year in Papua New Guinea. During the year, Hard Hat Health (on behalf of the joint ventures) had consultations with other companies operating in Papua New Guinea to ensure their learnings with regards to tuberculosis management in Papua New Guinea can be incorporated into the tuberculosis management plan. (Refer to page 74 for more detail).
Multidrug-resistant tuberculosis remains of increasing concern to the gold industry and South African population; treatments are expensive and protracted as employees affected are unlikely to return to work. Multidrug-resistant tuberculosis can be identified by sophisticated technology at multidrug-resistant tuberculosis hospitals. Given multidrug-resistant tuberculosis’s close association with human immunodeficiency virus, Harmony has developed a human immunodeficiency virus and tuberculosis treatment which will be integrated into the company’s healthcare management programme.

A total of 23 new cases of multidrug-resistant tuberculosis were diagnosed in FY15 (FY14: 25) and 21 employees are currently on multidrug-resistant tuberculosis treatment (FY14: 29). Employees who are on multidrug-resistant tuberculosis treatment are removed from all risk-work (dusty environment) as a preventative measure.

HUMAN IMMUNODEFICIENCY VIRUS OR ACQUIRED IMMUNODEFICIENCY SYNDROME

The human immunodeficiency virus or acquired immunodeficiency syndrome pandemic in South Africa continues to have a significant impact on employees, their dependants, as well as local and labour-sending communities. This illness, caused by human immunodeficiency virus or acquired immunodeficiency syndrome, can result in higher levels of co-infections of other diseases, increased absenteeism and reduced performance levels, loss of skills, increased economic burden, and sometimes death.

At the South African operations, human immunodeficiency virus prevalence, as per our actuarial model, is estimated at 27% of the labour force (FY14: 22%). Harmony manages human immunodeficiency virus or acquired immunodeficiency syndrome through its clinics, human immunodeficiency virus or acquired immunodeficiency syndrome committees and healthcare specialists. Our human immunodeficiency virus or acquired immunodeficiency syndrome strategy is based on promoting health through education and awareness programmes, preventative strategies to reduce the number of new cases, evidence-based curative interventions to ensure treatment, and on-going monitoring of compliance.

During the year, 4 016 employees were registered on the antiretroviral therapy programme (FY14: 4 640) at an average monthly cost of R515 per person (FY14: R549). Harmony encourages all human immunodeficiency virus-positive employees to participate in the wellness programme, which includes counselling, treatment of infections and antiretroviral therapy, to which all employees have access.

In Papua New Guinea, the Hidden Valley joint venture, with the assistance of Hard Hat Health, acquired a digital x-ray machine and set up a medical laboratory with equipment to enable the accurate testing of malaria, tuberculosis, human immunodeficiency virus or acquired immunodeficiency syndrome, etc. Staff members were trained to operate the equipment and the clinic was also registered with Papua New Guinea medical council to enable two nurses to commence voluntary counselling and testing for human immunodeficiency virus or acquired immunodeficiency syndrome.
Voluntary counselling and testing for human immunodeficiency virus or acquired immunodeficiency syndrome

Pre-counselling and voluntary counselling and testing are offered to all employees through on-going interventions at all Harmony healthcare centres. A total of 19,234 (FY14: 33,531) employees received voluntary counselling and testing during the year and of these, 14,933 (FY14: 14,060) employees confirmed their status. Although fewer employees were counselled this year, more employees agreed to be tested – 79% in FY15 compared with 42% in FY14.

Number of employees tested per mine

<table>
<thead>
<tr>
<th>Mines</th>
<th>FY15</th>
<th>FY14</th>
<th>FY13</th>
<th>FY12</th>
<th>FY11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target 1</td>
<td>1 025</td>
<td>1 475</td>
<td>1 842</td>
<td>3 575</td>
<td>1 841</td>
</tr>
<tr>
<td>Tshepong</td>
<td>3 164</td>
<td>4 609</td>
<td>2 103</td>
<td>964</td>
<td>1 310</td>
</tr>
<tr>
<td>Masimong</td>
<td>2 935</td>
<td>6 906</td>
<td>853</td>
<td>574</td>
<td>1 016</td>
</tr>
<tr>
<td>Bambanani</td>
<td>1 148</td>
<td>1 436</td>
<td>589</td>
<td>1 722</td>
<td>911</td>
</tr>
<tr>
<td>Unisel</td>
<td>776</td>
<td>920</td>
<td>317</td>
<td>662</td>
<td>1 015</td>
</tr>
<tr>
<td>Joel</td>
<td>2 022</td>
<td>4 656</td>
<td>806</td>
<td>601</td>
<td>443</td>
</tr>
<tr>
<td>Phakisa</td>
<td>1 337</td>
<td>1 319</td>
<td>2 893</td>
<td>2 063</td>
<td>1 302</td>
</tr>
<tr>
<td>Doornkop</td>
<td>3 356</td>
<td>3 318</td>
<td>2 531</td>
<td>1 101</td>
<td>808</td>
</tr>
<tr>
<td>Kusasalethu</td>
<td>3 053</td>
<td>1 605</td>
<td>2 916</td>
<td>2 265</td>
<td>546</td>
</tr>
<tr>
<td>Kalgold</td>
<td>573</td>
<td>427</td>
<td>231</td>
<td>111</td>
<td>97</td>
</tr>
<tr>
<td>Other*</td>
<td>1 183</td>
<td>6 860</td>
<td>2 768</td>
<td>4 445</td>
<td>3 759</td>
</tr>
</tbody>
</table>

* Other – includes contractors, service departments and shafts that closed or were sold

Preventative healthcare

Health promotions and education: Harmony carries out monthly awareness campaigns on various health-related topics such as reducing the human immunodeficiency virus infection rate to zero, voluntary counselling and testing, the human immune system, means of infection with a focus on unsafe sex, taking care of your body through a healthy diet and lifestyle, the risk factors associated with diabetes and the warning signs of chronic diseases.

Positive behaviour reward programme

In the second quarter of FY15, the health services team piloted an innovative positive behaviour programme to reward outstanding health behaviour and sustain testing for human immunodeficiency virus or acquired immunodeficiency syndrome as a new culture in Harmony. Employees were offered cell phone airtime to encourage testing for human immunodeficiency virus or acquired immunodeficiency syndrome. As a result, 87% of employees who were counselled agreed to be tested, compared to 56% in FY14 in the same quarter. This initiative led to a second phase of this programme which commenced at the end of May 2015, resulting in an additional 700 employees confirming their human immunodeficiency virus status for the first time in Harmony.

The positive behaviour programme has led to the identification of more than 400 new human immunodeficiency virus cases which have been enrolled as part of our wellness programme.

Influenza vaccines: A total of 5 286 (FY14: 5 563) employees consented to receive influenza vaccinations during the year. The year on year decline is attributable to the late arrival of 2015 vaccine in South Africa. This initiative is seen as a proactive measure to prevent employees from falling ill during the winter season. Employees who received the influenza vaccines will be monitored in terms of sick absenteeism to measure the effectiveness of this intervention.

OCCUPATIONAL DISEASES

Silicosis

Silicosis is caused by long-term exposure to high levels of quartz silica dust and can cause increased susceptibility to tuberculosis. Silicosis in South Africa, and at Harmony, remains a material concern. The integrated Harmony human immunodeficiency virus or acquired immunodeficiency syndrome, tuberculosis and silicosis policy and programme were developed to manage the debilitating disease responsibly so as to minimise the risk and to proactively prevent further deterioration. The trend for silicosis indicates a decline in incidence.
During FY15, 313 cases of silicosis were reported to the Medical Bureau of Occupational Diseases and, of these, 197 cases were certified (FY14: reported 437, certified 175).

Harmony is a member of the Chamber of Mines and is participating in processes to address issues relating to historical silicosis cases. The legal action against the gold mining companies is in an early stage and it is too soon to estimate the extent of any possible claims.

The silicosis working group (initiated by the South African gold mining companies who are members of the Chamber of Mines) continues to search for a sustainable, inclusive and comprehensive solution for current and legacy dilemmas. Meetings with stakeholders continued during the year.

Some of the activities included:
- The immediate operational focus on input and support of the Medical Bureau of Occupational Diseases where a lack of resources and management skills prevents the certification and compensation of current silicosis patients
- Participation in the 2015 Science conference organised by the National Department of Health with the aim of finding sustainable solutions to the current dysfunctional situation, and working towards an ultimate solution
- On-going support for the Medical Bureau of Occupational Diseases, in association with the Chamber of Mines, with data analysis and actuarial support. Assessment of the first 100,000 cases was concluded, and data for 700,000 pending files captured at the Medical Bureau of Occupational Diseases
- Provision of operational support to the Carletonville and Mthatha one-stop service centres of the Medical Bureau of Occupational Diseases where ex-miners can do their biannual benefit examinations and submission of claims
- Launch of a multi-stakeholder engagement initiative by the working group involving the departments of Health, Labour and Mineral Resources together with representatives from neighbouring countries. Other stakeholders include the unions, other mines, attorneys representing claimants in the class action, as well as ex-miners’ organisations

Project Ku-Riha (the Tsonga word for “compensation”) was launched on 29 May 2015 and is being rolled out by the Department of Health, with the goal of making substantial inroads into addressing the backlog of compensation claims from mineworkers who suffered occupational lung diseases while working in the mining sector, and ensuring that new valid claims are paid within a reasonable timeframe. Harmony and seven other South African mining companies are participating in the initiative.

The companies see this project as being fundamental to their broader initiative announced on 18 November 2014 to address issues relating to compensation and medical care for occupational lung disease in the South African gold mining industry. The companies are engaging a range of stakeholders in a quest to design and implement a comprehensive solution that is both fair to past, present and future gold mining employees, and that is also sustainable for the sector.

Project Ku-Riha marks a turnaround in the administration and operation of the compensation fund on which mine workers who have contracted occupational diseases depend. All parties recognise that the compensation system has not been operating as effectively as it should, with significant backlogs in claims processing having built up over the years.

For the companies, an efficiently operating compensation system is a critical part to the comprehensive solution being sought. This project builds on work already done between the Department of Health and the Chamber of Mines that led to the establishment of the first two one-stop service centres in Carletonville and Mthatha.

These centres offer medical examinations, rehabilitation assessments, health promotion and counselling to all patients, as well as referrals to other medical specialists if necessary. Patients can now be diagnosed, treated and receive the help they need to stay healthy, in one place. In addition, the centres help individuals prepare and submit compensation claims to the Medical Bureau for Occupational Diseases.

The eight mining companies have jointly committed to a R5 million funding programme for Project Ku-Riha which has enabled the Medical Bureau for Occupational Diseases and the Compensation Commissioner for Occupational Diseases to employ a project manager and an additional 18 financial and government administration graduate professionals to carry out the necessary work.

Among other things, the work of Project Ku-Riha includes:
- Data capturing and verification: confirming the contents of the files and capturing the most important information in each on an electronic database. Accurate data is critical for the claim to be processed and compensated

SAFETY AND HEALTH CONTINUED
• Dealing with certification backlogs
• Project management
• Financial assistance to the Carletonville one-stop service centre

**Dust control**

In order to decrease our employees’ exposure to silica dust, Harmony uses a range of engineering controls to minimise dust. Mining Industry Occupational Safety and Health (MOSH) leading practices such as the fogger system at strategic underground areas and the implementation of foot- and side-wall treatment in identified intake airways to allay dust have been adopted.

In addition, multi-stage dust filtration systems have been installed. We are also in the process of installing winch covers for all of our winches. Progress on winch cover installation is 86.7% with a total of 946 units out of the 1,091 units having been fitted. Action plans with completion dates have been drawn up by each of the operations, indicating the number of winches on site, the number fitted with covers, the number outstanding still to be fitted with covers and by when. It is envisaged that all winches will have covers by the end of the second quarter of FY16. It is now standard practice that all new winches purchased must be fitted with dust covers.

The silica quartz content of dust is highly variable; this can pose a challenge when measuring the effectiveness of the engineering controls. Harmony therefore concentrates on controlling the total respirable dust load in order to reduce the amount of exposure to silica quartz. Training and awareness programmes address the concerns of dust control in stoping workplaces and all development ends are equipped with water blasts to settle dust directly after a blast.

Dust discharge occurs during activities where the rock is broken at source i.e. stoping, development and trackless mining. Engineering controls focused on dust allaying at source are be investigated through the Mining Industry Occupational Safety and Health dust task team. A prototype waterblast which can be used in both stoping and development is currently being tested on a few mines.

The following measures were implemented at our operations during the year to combat silicosis:

• Revision of the airborne pollutant baselines to identify hotspots and to assess the effectiveness of engineering controls is in progress at all operations of which 91% (FY14: 67%) of total samples have been completed. All Harmony operations are utilising the portable spot dose rate meter PDR 1500 measurement instruments to identify high dust load areas. Evaluation of suitable/improved respirators has been completed, of which five different units meet the South African National Standards homologation standard for men. Currently three units meet the standard for women
• All Harmony operations are members of the Community of Practice for Adoption forum to monitor the progress of Mining Industry Occupational Safety and Health initiatives

**Industry milestone: elimination of silicosis**

By December 2024, 95% of all exposure measurement results will be below the milestone level for respirable crystalline silica of 0.05 mg/m$^3$ (these results are individual readings and not average results).

Using present diagnostic techniques, no new cases of silicosis will occur amongst previously unexposed individuals (“previously unexposed individuals” are those unexposed to mining dust prior to December 2008 i.e. equivalent to a new person who entered the industry in 2009)

Workshops have been conducted by the occupational hygienists from all the operations to establish a strategy to achieve this milestone. The various options will be discussed early in the new financial year by senior management.

In Papua New Guinea, we experience around 3-4 metres of rain a year, which is a good dust suppression measure. Additional dust suppression methods are used in the open pits and at the crushers and conveyors. Papua New Guinea also has a low respirable silica risk. The combination of these factors means that dust is generally well-controlled at our Papua New Guinea operations.

**Noise-induced hearing loss**

Harmony embarked on an Oto-Acoustic-Emissions initiative as a measure for the detection of early hearing loss. The Council for Scientific and Industrial Research has collaborated and analysed the data and confirmed that Oto-Acoustic-Emissions detect damage two years earlier than an audiogram. We have received a proposal from the researchers at the University of Pretoria to continue with further technical developments that could help prevent noise-induced hearing loss and also to develop leading indicators for the industry.
All Harmony employees who are exposed to high noise levels are issued with personalised hearing protection devices, which reduce noise levels by 25 decibels.

During the year, 98.9% of occupationally exposed employees, including contractor employees (59.6%), were issued with personalised hearing protection devices (FY14: 93.8% and 62%), with a progressive total of 21 921 personalised devices issued in FY15 (FY14: 27 238). Sound attenuators were also fitted to all equipment, resulting in no noise level exceeding 110 dB(A)-weighted decibels from any machine, in compliance with our noise milestone.

The number of early noise-induced hearing loss cases (5 to 10% shift) decreased by 1 204 cases to 526 in FY15.

New industry milestones for the elimination of noise-induced hearing loss were introduced by the Mine Health and Safety Council which took effect 1 January 2015.

**New industry milestones:**
- By December 2016, no employee's standard threshold shift (STS) will exceed 25dB from the baseline when averaged at 2 000Hz, 3 000Hz and 4 000Hz in one or both ears
- 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).

Although Harmony has a ‘buy quiet’ policy in place, more engagement with original equipment manufacturers will be required to work towards the milestone.

Audiometric testing during annual medical examinations tests for hearing loss. The early detection of hearing loss is part of Harmony’s hearing conservation programme and this is done at least annually at occupational health hubs by an appointed audiometrist.

Harmony has placed increased emphasis on the monitoring of employee compliance regarding the use of personalised hearing protection devices in the workplace. An awareness drive was initiated at all operations by supervisors, assistant occupational hygienists and health and safety representatives to ensure employees are aware of the benefits of wearing personalised hearing protection. A monitoring programme was also implemented to measure actual compliance in the workplace of the use of personalised hearing protection.

Compliance monitoring is done during routine occupational hygiene inspections and an ad hoc audit was conducted by a high-level audit team during the year.

Workshops with employees exposed to noise have been initiated to promote a better understanding of the reasons why people are not wearing noise clippers underground. The benefits of using personalised hearing protection devices are described in the e-learning training material used in employee training courses.

As part of the initiative to prevent noise-induced hearing loss, 22 418 employees participated in the ‘hearing coach promotion’ initiative during the year. Evaluations were done and guidance provided where necessary regarding the use of customised hearing protection devices.

During the year under review, an audiometric screening/testing system was acquired in Papua New Guinea to ensure that hearing loss can be measured against a baseline.

**Heat stress**

Extensive refrigeration and ventilation measures are in place at all operations where temperatures exceed normal working ranges. Heat-tolerance testing and acclimatisation programmes support and protect employees exposed to excessive heat in the workplace. In FY15, 6 736 heat-tolerance tests were undertaken (FY14: 11 163).

Heat-related illness cases decreased from 64 to 23 cases in FY15.
Radiation protection

All our operations in South Africa comply with the dose limit of 50 millisievert in a year and 100 millisievert in five years. Operational controls have been established to ensure that elevated monitoring results are investigated and corrected where required.

Radiological clearances are conducted at decommissioned sites to ensure the future declassification of these areas.

The National Nuclear Regulator approved the land clearance application submitted for the reduced footprint around Eland Shaft.

Managing chronic diseases

As part of Harmony’s integrated approach to healthcare, specific initiatives have been implemented to manage chronic diseases, with our focus on the human immunodeficiency virus, tuberculosis, diabetes, hypertension and silicosis, as well as asthma and epilepsy. In FY15, 42% of our Category 4 – 8 employees in South Africa received treatment for chronic conditions (FY14: 42%).

Harmony’s health initiatives focus on the most common diseases and the e-learning module covers these diseases in the induction programme. Other initiatives that have been used are pamphlets, management healthcare memorandums that focus on mine-based health and safety topics, health-worker training to recognise the most prevalent diseases, screening at all medical centres, disease management interventions and quality assurance. In addition, branding on Harmony buses is used to help educate employees on human immunodeficiency virus matters and promote voluntary counselling and testing, as are podcasts and liquid-crystal display monitors.

Upper respiratory tract infections

In Papua New Guinea, Hidden Valley is located approximately three kilometres above sea level and most employees reside in the lower, warmer areas; the regular change in altitude contributes to various respiratory ailments, mostly viral infections. Other factors contributing to these infections include air-borne pollen during peak flowering times (thick rain forest and montane forest) which affects air quality. The heavy rainfall all year round maintains high levels of humidity (around 80-90%) which creates favourable conditions for fungus (spores), bacteria and viruses to proliferate.

In Papua New Guinea, a total of 2,719 employees were treated for respiratory ailments in FY15 (FY14: 2,921). There has been a decline in the number of cases of upper respiratory tract infections presented since FY12, with a decrease of 7% recorded for FY15. Harmony has successfully rolled out a programme to educate employees regarding respiratory ailments and gastro-intestinal hygiene.

<table>
<thead>
<tr>
<th>Upper respiratory tract infections</th>
<th>FY15</th>
<th>FY14</th>
<th>FY13</th>
<th>FY12</th>
<th>FY11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of employees treated</td>
<td>2,719</td>
<td>2,921</td>
<td>5,083</td>
<td>5,428</td>
<td>4,605</td>
</tr>
</tbody>
</table>

Malaria

Malaria is endemic to many parts of Papua New Guinea, which includes work sites such as Wafi-Golpu and Lae but excludes Hidden Valley. Importantly, many employees and contractors working at Hidden Valley reside in areas where malaria is endemic, and this is where our community health projects play a vital role in combating the disease.

Over the past two years, there has been a 70% decrease in the presentation of patients with malaria-like symptoms at the clinics in Papua New Guinea. This is primarily as a result of the following:

- Continued support for provincial programmes to eradicate the disease by the use of residual spraying and fogging
- Standardised testing that allows for more consistent testing for malaria. The turnaround time of blood tests has been increased, meaning that patients are tested twice before receiving treatment, allowing the treatment provided to be appropriate
- The distribution of treated mosquito nets and treatment regimes
- On-going malaria awareness education that is provided to employees, contractors and communities
- As part of the malaria awareness campaign, Morobe Mining Joint Ventures has been issuing treated mosquito nets as standard personal protective equipment to all employees and contractors on site. In addition, work clothes issued at sites like Wafi-Golpu are impregnated with insecticides, and insect repellents are issued to all employees and contractors
SAFETY AND HEALTH CONTINUED

The Morobe Mining Joint Ventures’ malaria programme is now being managed and overseen by the general manager: health and safety.

**Hard Hat Health**

During the year, in Papua New Guinea, Morobe Mining Joint Ventures’ contract with the International Organisation for Standardisation expired and a new contract with Hard Hat Health became effective. Hard Hat Health, an Australian-owned company based in Sydney, is owned and managed by three senior executives in the medical services industry. Hard Hat Health provides the following services to Morobe Mining Joint Ventures:

- Supply of qualified staff – paramedic at Hidden Valley (1 position)
- Co-ordination of both international and domestic medical evacuations
- Restructuring of the medical staff in the Morobe Explorations, Hidden Valley and Wafi-Golpu joint ventures which will include the updating of job descriptions and the integration of standards and procedures, among others
- Staff training
- Reviewing and updating the clinical governance framework for the joint ventures
- General corporate medical support

Once the emergency protocols and governance structures are updated and embedded within the organisation, the scope of work of the contractor and the joint venture medical staff will change to focus on the pro-active health care management of our employees.

**Hard Hat Health’s progress during FY15**

<table>
<thead>
<tr>
<th>Scope element</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply of qualified staff</td>
<td>Complete</td>
</tr>
<tr>
<td>Coordination of medical evacuations</td>
<td>Commenced and on-going</td>
</tr>
<tr>
<td>Restructuring of the medical staff which will include updating of job descriptions</td>
<td>Complete</td>
</tr>
<tr>
<td>Integration of standards and procedures</td>
<td>Commenced</td>
</tr>
<tr>
<td>Staff training</td>
<td>Commenced</td>
</tr>
<tr>
<td>24/7 medical support (phone) from a doctor for all serious injuries, repatriations and other issues as per agreed guidelines</td>
<td>Commenced and on-going</td>
</tr>
<tr>
<td>Standardisation of medical reporting</td>
<td>Commenced – changes to information management system required</td>
</tr>
<tr>
<td>Overseeing regular internal audits</td>
<td>Commenced</td>
</tr>
<tr>
<td>Review of emergency equipment on site and recommendation for potential changes</td>
<td>Complete – additional equipment delivered to site</td>
</tr>
<tr>
<td>Review of site formulary, inventory, supply line and storage of medications and consumables</td>
<td>Completed</td>
</tr>
<tr>
<td>Consultancy on local vector control programmes at sites including specialist entomologist advice and oversight where required</td>
<td>Commenced</td>
</tr>
<tr>
<td>Review current policies and procedures for pre-employment, pre-deployment, regular and post-deployment physical assessments</td>
<td>Updated procedures approved</td>
</tr>
<tr>
<td>Review malaria programme and provide recommendations or if required formalise an implementation plan</td>
<td>Review commenced</td>
</tr>
</tbody>
</table>
MANAGEMENT INFORMATION

In collaboration with the Harmony Business Intelligence Team, the healthcare team successfully managed to deposit medical data into the Harmony Data Warehouse. However some of the primary healthcare data remains a challenge. The Harmony Business Intelligence team has developed an internal individual medical risk profile model to assist clinicians in making timeous medical decisions. The model will form the basis for individual treatment plans, and for work management and health risk assessments to aid future decision making regarding health and safety.

HEALTH OBJECTIVES FOR FY16

Harmony’s healthcare strategy is aimed at improving the well-being of every employee. Targets for FY16 include:

- Continued improvements in health-related absenteeism rates, specifically a 28% decline in absenteeism
- Continued improvements in the availability of Pivot data. In the long term, data from sources such as Pivot and clinical data will be combined in an integrated approach that will assist doctors and healthcare workers in making holistic, informed decisions about a person’s health
- On-going regulatory and legislative compliance
- Continued standardisation of medical surveillance processes with written procedures
- Launch of a positive behaviour reward system to promote healthy lifestyles among employees