

THE EAGLE



A Publication of Lubambe Copper Mine

Edition 3

SAFETY

- 5.5 million Fatality Free Shifts
- Safety Signs
- Occupational Noise





TABLE OF CONTENTS

CEO'S Message.....	2
5.5 Million Fatality-Free Shifts.....	3
Safety Signs.....	4 - 5
Occupational Noise and the Lubambe Copper Mine Hearing Conservation Journey.....	6 - 7
Lubambe Records Significant Improvement in Stope Blasting.....	8
Sag Mill Automation Project Improves Lubambe's Milling Performance.....	9
Lubambe Introduces Rise Mining as 12 Rise Miners are Trained.....	10
Operational Summary – Quarter Two.....	11
Lubambe Launches Clean Campaign.....	12
Lubambe Launches Menstrual Hygiene Management Project.....	13
Lubambe Introduces Colour-Coded Bins to Effectively Manage Waste.....	14
Shifting into The Right Gear.....	15-16
Jessie Kapotwe and 32 Others Receive Labour Day Awards.....	17-18
SHE Wins 2019 Inter-Departmental - First Aid Competition.....	19
President Lungu Urges LCM to Explore Ways of Utilizing Underground Water.....	20
Venus and James are EIZ Fellows.....	21-22
“Monitor Sugar Intake” – Dr Welsh.....	23
What is Blood Pressure?.....	24-25
Lubambe In Pictures.....	26 – 27



CEO's MESSAGE

Our fortunes in Quarter 2, the 3 months to June 30, have been mixed. On the safety front, we have continued our excellent performance of no lost time accidents. However, production has been poor with Copper produced in the quarter at 5,469 tonnes down 12% on the previous quarter.

On the safety front, we continue to perform well. Our firm belief that nothing is more important than safety is still as strong as it was when I became CEO in January 2018. As of June 30, we had worked a total of 4,601,287 million Lost Time Injury-Free man hours and 210 Lost Time Injury-Free days.

The mine has also earned an impressive record of 5,542,677 million Fatality Free shifts at the end of June 2019. The mine has not suffered a fatality since commencement in 2010 and let us strive to maintain this record.

In May, I attended the Labour Day celebrations in Chililabombwe. It was an outstanding turnout from Lubambe and we had both the largest and best-dressed team. I would like to congratulate the 33 employees who were recognised by management on the day

for their positive contribution to the company. For production, our second quarter performance in terms of tonnes mined was below the previous quarter by 5%. Stopping continues to improve, however, there is a limited number of development ore headings available which is affecting overall production.

Our biggest priority in the coming months is to push the ore and waste development headings, particularly in the East limb. The pump upgrades currently in progress are due to be completed by early September 2019. These upgrades will increase our dewatering capacity by over 65% from 24 megalitres a day to in excess of 40 megalitres a day and provide the mine with a more reliable and robust pumping system.

The limited number of working areas in the East limb has meant much of the production has been sourced from the South limb and in particular Ramp 1. Ramp 1 is the lowest grade section of the orebody which has had a detrimental effect on Copper production.

As the higher-grade areas of Ramp 3, 4 and 5 are accessed in the coming months,

the head grade is expected to increase to above 2%. It's critical that Copper production exceeds 2,500 tonnes per month or 7,500 tonnes per quarter to ensure we are generating sufficient income to match our operating costs. The last six months of this year are critical for us to achieve this.

I would like to share again with everyone our Vision for Lubambe which is to be **The Best Copper Mine in Zambia**.

To achieve this Vision, we set the following targets

- No Lost Time Accidents
- Production in excess of 40,000 tonnes of copper per year [3,300 tonnes per month]
- Cost below 50% of the average of the world's copper mines

Whilst we should be very proud that we have achieved our first target of no lost time accidents we have much work to do to increase our Copper production to around 3,300 tonnes per month. With all the new equipment and the pump upgrades expected to be completed in Quarter 3, the future of Lubambe is now solely in the hands of us, the employees.

We will only achieve our Vision by hard work, being prepared to change and stopping the incidents and issues which continue to impact production.

So, I ask you that we work together to make the required changes and improvements at Lubambe to achieve our Vision and secure our future.

Enjoy your reading.

Nick Bowen

5.5 Million Fatality-Free Shifts!

Lubambe has earned an impressive record of 5,542,677 million fatality-free shifts at the end of June 2019. The mine has never suffered a fatality since 2012 when operations commenced.

In addition, the mine has worked 4,601,287 million Lost Time Injury-Free Man Hours and 210 Lost Time Injury-Free Days progressive as at end of June 2019.

Lubambe Chief Executive Officer, Nick Bowen is happy with the Safety performance of the mine.

During a special Ukusungana Mass Meeting held on June 27, Bowen congratulated the workforce for this remarkable achievement and appealed to everyone to always work safely.

Citing Lubambe's safety value, "nothing is more important than safety", Bowen advised all Lubambe employees to maintain the good safety record and ensure to always go back home safe.

"If you think something is unsafe, Please Stop, Don't Do It. Don't take unnecessary risks, you will

never get criticized by management for being safe. If someone is pressuring you to do something that is unsafe, come and see me," Bowen said.

Bowen expressed satisfaction that the mine was making good progress towards increasing production to 40,000 tonnes of Copper per year.

Speaking at the same meeting, General Manager Operations, Tony Davis, emphasized the need to always drive safely within and outside the mine. He encouraged miners to be cautious when driving as safety could not be guaranteed if people were careless.



CEO Nick Bowen addressing employees during the June Ukusungana Mass Meeting



Employees during the June Ukusungana Mass Meeting

SAFETY SIGNS

Safety signs are used for expressing specific safety information which consists of graphic symbols, safety colours, geometric shapes or geometric border or texts. Safety signs are the international common method to convey information which can easily be understood and used by people of different nationalities, different nations and different degree of education. The role of safety signs is to tell and warn people of dangerous situations at workplaces and to guide people to take proper measures to avoid accidents.

THE IMPORTANCE OF SAFETY SIGNS IN THE MINE

Safety Signs are crucial in any work environment. The primary importance of displaying Safety Signs is to prevent injury and ensure staff and visitors are aware of the possible dangers and hazards ahead in certain situations and/or environments.

Without signs, many employees would lack the necessary direction in times of crisis, and the Mine could find itself in significant legal difficulties if any accidents were to arise as a result.

By ensuring the workplace is sufficiently well signed, the Mine can help protect employees and visitors to the site, particularly members of the public, against the possible dangers that may be unnoticed - leading to fewer Mine accidents and reduced risk to employees.

The following signs are designed to regulate and control safety-related behaviour, to warn of hazards and to provide emergency information including fire protection information.



Mandatory Signs

These signs specify an instruction that must be carried out. Symbols (or pictograms) are depicted in white on a blue circular background. Sign wording, if necessary, is in black lettering on a white background.



Prohibition Signs

These are signs that specify behaviour or actions which are not permitted. The annulus and slash are depicted in red over the action symbol in black. Sign wording, if necessary, is in black lettering on a white background.



Danger Signs

These signs provide a warning when a hazard or a hazardous condition is likely to be life-threatening. The word "Danger" is featured inside a red oval inside a black rectangle.



Warning Signs

These signs warn of hazards or a hazardous condition that is not likely to be life-threatening. The hazard symbol is black on a yellow background and a triangle is depicted around the hazard symbol. Sign wording is black on a yellow background.



Emergency Information Signs

These signs indicate the location of, or directions to emergency related facilities (exits, first aid, safety equipment, etc). These include white symbols or text on a green background.



Fire Signs

Advise the location of fire alarms and fire-fighting equipment. They contain a white symbol and/or text on a red background.



Ladder



Fire Extinguisher



Fire Hose

Occupational Noise and the Lubambe Copper Mine Hearing Conservation Journey

By Eric Ngandu

Mining minerals has always been an arduous forceful task, more so in an underground mine. Noise by a simple definition is undesirable sound which is a by-product of industrial operations. Lubambe Copper Mine seriously addresses the prevalence of hazardous noise

exposure through a rigorous Occupational Noise control plan. Prolonged exposure to noise over a period of years generally causes permanent damage to the auditory nerve and/or its sensory components. This irreversible damage, known as noise-induced hearing loss (NIHL), is one of

the most common occupational diseases in the Zambian mining sector today. Workers suffering from noise-induced hearing loss (NIHL) have difficulty understanding human speech and hearing other workplace cues.

Sources of Noise

Some sources of noise in mining include, heavy vehicle equipment such as moving excavators, loaders, Drill rigs, blasting, others include compressors, ball mills, sample grinding and pulverising mills and fans.

Effects of Noise Exposure

Although there are no visual signs, there are a few simple indicators of Noise Induced Hearing Loss (NIHL). Identification in its early stages can help prevent further damage. NIHL rarely happens overnight. Rather, it accumulates over time with every unprotected exposure to hazardous noise, usually in both ears. This progression can be detected through healthy hearing practices, including the performance of annual audiograms on all employees. Audiograms can identify whether employees are experiencing a degradation in hearing, which indicates permanent damage and requires further preventative action.

When hearing impairment be-

gins, the high frequencies are often lost first, which is why people with NIHL often have difficulty hearing high pitched sounds such as human voices, alarms and signals. Compared to other sounds, they will seem muffled or distorted. Those suffering from noise-induced hearing loss will experience tinnitus (ringing in the ears) or muffled hearing. Non-auditory effects of NIHL may include increased stress, high blood pressure, sleep problems and/or headaches.

Measurement and control of Noise

The unit of measurement of occupational noise exposure is the Decibel (dB). This is done in two weightings, the A weighting, and the C weighting. The detection and measurement of noise can be done with the use of a Sound Level Meter or personal dosimetry having an A-weighting filter to simulate the subjective response of the human ear. At Lubambe the noise monitoring plan involves the monitoring of personal noise exposure by using the dosi-

metry method where employees are equipped with noise dose badges, and the use sound level meter or area monitoring. The area monitoring is cardinal in that it highlights the areas across the site with noise levels above the threshold 85dB (A).

Conservation of Hearing

Lubambe believes in securing the wellbeing of every employee. And one way in which this is achieved is by creating a successful Hearing Conservation Programme through best practices. While noise-induced hearing loss is permanent and irreversible, it is completely preventable. Lubambe, aims to prevent employee exposure to harmful noise, while promoting a healthier and more productive workforce. This is outlined in the following provisions, including best practices in implementing a successful hearing conservation programme.

i. Determination and assessment of risk

- **Assessment** – A noise exposure assessment to be obtained for all employees exposed to 85 dBA LEq (Time-Weighted Average for the whole shift exposure). This is done through the Homogeneous Exposure Group which helps to ensure not every employee is monitored but the representative samples taken, which shows that noise exposures are equivalent to other employees in the same area or performing the same task.
- **Noise Map** – A noise map in common areas with exposure above 85 dB(A) is an effective way to notify employees of area noise.
- **Document Exposure** – Each Homogeneous Exposure Group Time Weighted Average for noise exposure is recorded.

ii. Determination and assessment of risk

- **Engineering Controls** – the application of engineering controls at the noise source or along the noise path to reduce exposures. These controls may include vibration dampeners, absorptive panels, barriers, muffler, or variations in force or drive speed of motors.
- **Maintenance** – by performing regular maintenance on machinery to prevent additional noise.
- **Administrative** – Implement administrative controls to limit the exposure time for employees. These controls may include rotating employees in noisy areas, providing quiet breaks for noise-exposed employees.
- **Buy Quiet** – By purchasing new products or machinery with enhanced noise control.
- **Maintain** – Noise is often a machine's cry for maintenance. Repairs can reduce noise levels.
- **Block or Isolate the Source** – by erecting barriers, or relocating noisy equipment (or their operators) behind heavy walls. Doubling the distance from a noisy piece of equipment effectively reduces the sound energy by half (about a 3 dB drop in noise level).

iii. Personal protection

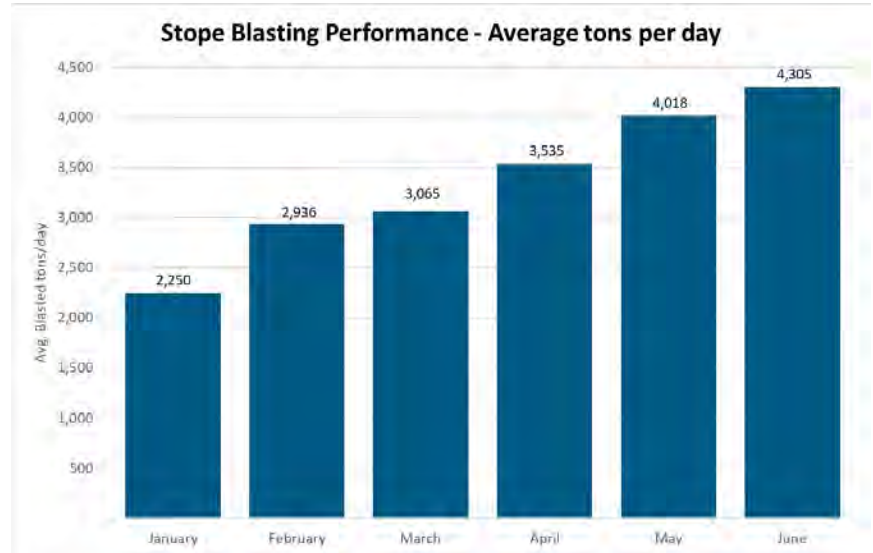
- **Mandatory Usage** – Employees must utilise hearing protectors when noise exposure meets or exceeds the 85 dBA Upper Action Level for a time-weighted average shift.
- **Usage** – Lubambe ensures the proper use of hearing protection amongst noise-exposed employees.
- **Noise Reduction Rating (NRR)** – by ensuring the earplug or Hearing Protective Devices (HPDs) issued on-site has an attenuation rate to reduce the noise exposure to below the threshold of 85dB(A).
- **Make Hearing Protective Devices (HPDs) Convenient** – Increase accessibility to hearing protection by installing earplug dispensers near areas mapped as high noise exposure areas.



LUBAMBE RECORDS SIGNIFICANT IMPROVEMENT IN STOPE BLASTING

Stoping is the process of extracting ore from an orebody by drilling holes strategically, filling them with explosive emulsion and blasting the emulsion to break the rock. Each stoping panel delivers approximately 12,000 tonnes of copper ore.

This process has been a challenge for the Lubambe mining team but in the last five months, fortunes have changed, exceptional improvement in stoping has been recorded. Output has consequently increased from 2,250 tonnes per day to 4,305 tonnes per day.



The 190% improvement is an indication that the Mine is heading in the right direction, says Business Improvement Specialist John Mwansa Wapabeti.



Stop Blasters preparing rings for blasting in Ramp five

Wapabeti added that the mine could only record profits and expand by meeting production targets and ensuring that blasting was efficient.

Deliberate measures and improvements, such as the introduction of the stoping cycle, for the planning of contingent stopes and the generation of the stope preparation procedure, were necessary.

Wapabeti also indicated that the training of Blasting Officers and Blasters on Stope preparation procedures was another important

aspect in improving production in addition to monitoring charging practices underground.

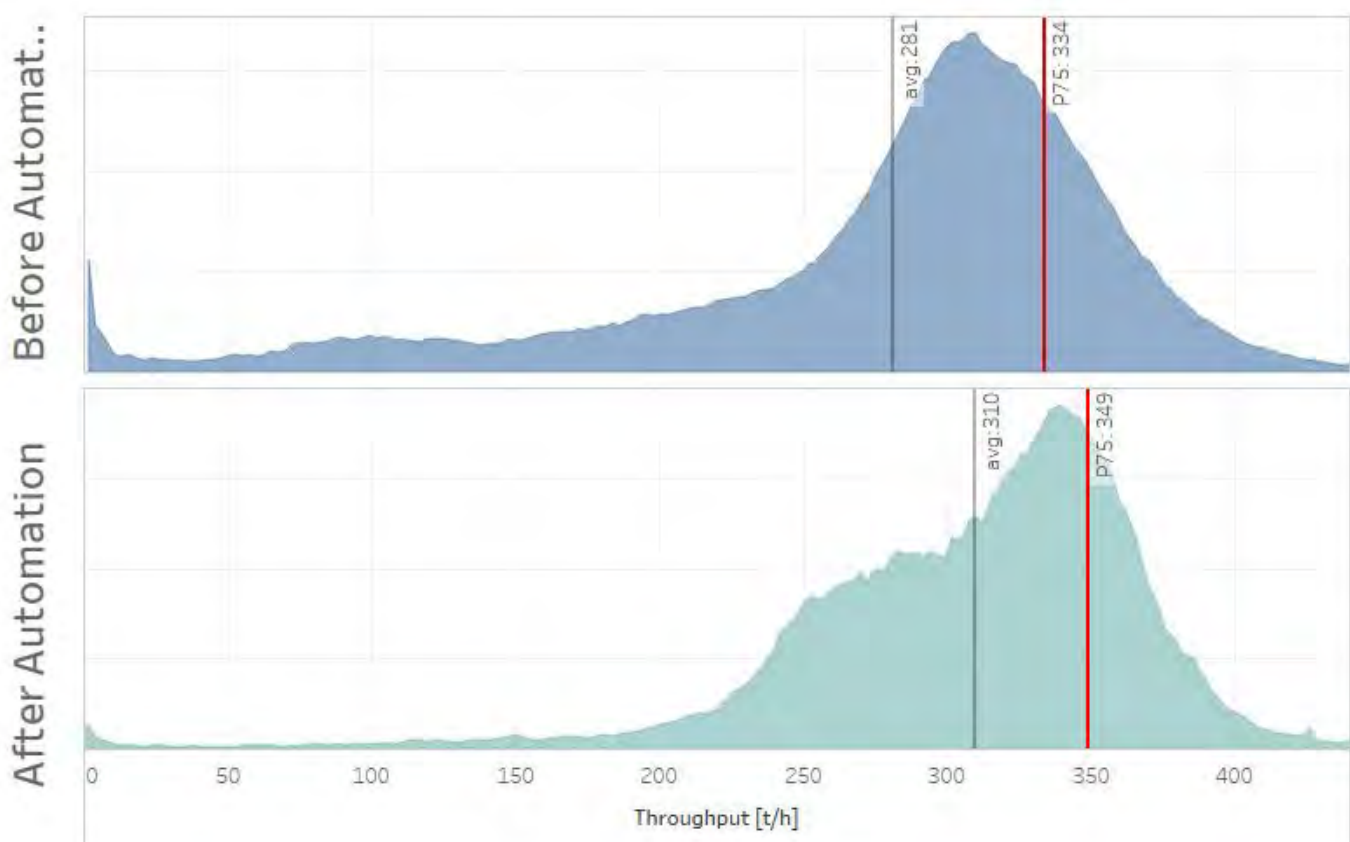
Other measures that have been put in place to ensure that the Stope blasting rate increased include: implementation of jackleg mined slots in stopes, elimination of time wasted in recovery drilling of slots, effective mine planning and management, introduction of marking of charging hose to observe uncharged collars, tamping of collared lengths using tamping material to confine energy and improve the quality of blasting.

Wapabeti commended all teams that include Business Improvement, Planners, Blasting Officers, Operations Management and Stope charging crews for recording the significant improvement in stope blasting.

SAG MILL AUTOMATION PROJECT IMPROVES LUBAMBE'S MILLING PERFORMANCE

Lubambe has launched a Sag Mill automation project which has consequently resulted in the improvement of the milling throughput by an additional 10 per cent.

Business Improvement Specialist Waza Mumba says this development follows other earlier initiatives that have improved the milling throughput by an overall 22% from 254 tonnes per hour to 310 tonnes per hour.



Mumba noted that the manual control of the mill feed created high variability in the feed rate and removing this variability presented an opportunity to improve the average throughput rate. The projection was to gain a six per cent improvement in throughput. Following the commissioning of the automation project in May this year, the throughput

improved by 10 per cent, exceeding the projection.

Following the launch of the Sag Mill automation project, and other improvements which are yet to be implemented, Mumba is confident that the design throughput of 331 tonnes per hour will be achieved by the end of the year.

Lubambe introduces rise mining as 12 rise miners are trained

Lubambe Copper Mine has introduced rise mining in a bid to increase production. The mine has since trained the first 12 rise miners who are now expected to do their work efficiently.

Rise Mining involves the use of a handheld rock drill and an airleg to drill holes in the rock. Once the holes are drilled, they are blasted to advance the working face.

Trainer, Kevin Nunn who spent most of his working life in underground Gold and Nickel mines in Western Australia started the training programme with LCM last September with only three miners.



Rise miners at work in Ramp 5 at 316-meter level

At the beginning of the training programme, the miners only worked day shift but are now working both day and night shifts due to increased workload. Before rise mining was introduced at Lubambe, all rises were developed by either long-hole drilling and blasting or a box bore machine.

Nunn, who is impressed with the enthusiasm and skill displayed by his mentees, says safety is a key element in his training and ensures that the rise miners are aware of the hazards associated with mining in order to create an accident-free working environment.

A representative of the rise miners, Vincent Matanga has expressed happiness that he is receiving on-the-job-training which will equip him with the necessary experience to do standard work and produce great results.

On-the-job-training (OJT) is a hands-on method of teaching skills, knowledge, and competencies needed for employees to perform a specific job within the workplace. Employees learn in an environment where they will need to practice the knowledge and skills obtained during training.



Trainer Kevin Nunn with some of the rise miners after a night shift

The training usually takes place within the employee's normal work environment and the same workplace tools, machines, documents and equipment are used so that employees are taught how to effectively do their job.

Apart from launching the training programme at Lubambe, Nunn also delivered a Stope and Development training with North Kalgoorlie Mines of Australia in 1983.

The training covered all aspects of mining including trucking, bogging, drilling and timberman.

OPERATIONAL SUMMARY - QUARTER TWO

APRIL TO JUNE 2019

Total production for the quarter in terms of tonnes mined was slightly below the previous quarter. Stopping continues to improve however there is a limited number of development ore headings available which is affecting overall production.

The biggest priority in the coming months is to push the ore and waste development headings, particularly in the East limb. Redpath has been affected by late arrivals of some of their equipment and intermittent flooding issues which have affected available work areas. The pump upgrades currently in progress are due to be completed by September 2019. These upgrades will increase dewatering capacity by 60%

and provide the mine with a more reliable and robust pumping system.

The limited number of working areas in the East limb has meant much of the production has been sourced from the south limb and in particular Ramp 1. Ramp 1 is the lowest grade section of the orebody which has had a detrimental effect on Copper production. As the higher grade areas of Ramp 3, 4 and 5 are accessed in the coming months the head grade is expected to increase to above 2%. It's critical that copper production exceeds 7,500 tonnes per quarter to ensure the operation remains profitable.

Operational Summary						
		Q2 2019	Q1 2019	Change %	Q2 2018	Change %
Safety	LTIFR	0.00	0.00	0%	0.13	-100%
	TIFR	0.40	0.37	8%	2.12	-81%
Tonnes milled	Tonnes	406,913	401,669	1%	357,788	14%
Mill head grade	%	1.68%	1.86%	-10%	1.84%	-9%
Concentrator recovery	%	80.03%	82.99%	-4%	84.4%	-5%
Copper produced (contained)	Tonnes	5,469	6,182	-12%	6,601	-17%
Ore metres developed	Metres	1,283	2,061	-38%	2,321	-45%
Waste Metres Developed	Metres	1,492	1,086	37%	1,497	0%
Total Metres Developed	Metres	2,775	3,147	-12%	3,818	-27%
Stopping Tonnes Mined	Tonnes	319,654	285,857	12%	210,206	52%
Development Ore Tonnes Mined	Tonnes	78,581	131,976	-40%	147,532	-47%
Total ore tonnes mined	Tonnes	398,234	417,833	-5%	357,738	11%



Konkola pupils cleaning the dumpsite at Chimfushi bus stop in Konkola township.



CEO Nick Bowen addressing the Community on waste management.



Chililabombwe Mayor Christine Mulala (L) in white during the cleaning exercise.



(L) Lubambe CEO Nick Bowen, (R) Chililabombwe DEBS Godfridah P. Mangaila handing over books to School Administrator Joseph Chaila (M)

LUBAMBE LAUNCHES CLEAN CAMPAIGN

Lubambe Copper Mine (LCM) has launched a clean campaign dubbed “Ubusaka Ebumi” under the ‘Keep Zambia Clean, Green and Healthy National campaign.

Launched on May 4 2019, by LCM CEO Nick Bowen and Chililabombwe Mayor Christable Mulala, the campaign is aimed at promoting cleanliness in communities around the mine.

Lubambe Chief Executive Officer (CEO) Nick Bowen commended the step taken by the Lubambe Management team in mobilising the community to take part in the cleaning exercise.

He said LCM valued the partnership with the community and thanked all who had turned up for the cleaning exercise.

“There was a lot of litter around here and we have picked up about 50 tonnes of rubbish, most of it plastic. Unfortunately, most people do not know this, but it takes about 450 years for plastic to decompose and this is a major problem not only in Zambia but all around the world. Plastics are produced all the time and disposed of anywhere, it is disheartening that citizens are ignorant about waste management,” Mr Bowen added.

The CEO commended the community and pupils who took part in the launch and urged them to take a keen interest in keeping the township clean and ensuring that garbage was disposed of in designated areas.

And Chililabombwe Mayor Christabel Mulala said the cleaning exercise was a multi-stakeholder program that should be taken seriously by everyone. She congratulated LCM for launching the Ubusaka Ebumi Clean Campaign. She said the launch of the clean campaign in Konkola township should be a turning point for everyone to ensure that waste was managed properly.

“As government, we are delighted with this gesture. CEO we are calling on you to ensure that this campaign continues in order to achieve cleanliness in the community,” The Mayor added.

At the same event, Lubambe CEO donated books, cleaning materials, paint and plants to Konkola Primary School, a donation that was well received by school administrator Joseph Chaila.

School Head Girl, Esther Chulu said Lubambe was a great partner that had contributed to the development of the school. She added that the donation would help to boost pupils’ performance.



A member of the women's group expressing happiness after receiving her training certificate



Pupils and members of Tilitonse group after the launch

Lubambe launches Menstrual Hygiene Management Project

Menstrual hygiene management (MHM) is an essential aspect of hygiene for women and adolescent girls between menarche and menopause.

School going girls require an environment that is supportive of Menstrual hygiene management in order to ensure regular school attendance.

In Zambia, studies have revealed that Girls' school attendance and participation in physical activities was compromised when menstruating due to fear of teasing and embarrassment from menstrual leakage.

Challenges for school going girls include use of non-absorbent and uncomfortable menstrual cloth and inadequate provision of sanitary materials, water, hygiene and sanitation facilities in schools. In some cases, toilets do not have soap and water or doors and locks for privacy.

In order to help schoolgirls, overcome the challenges associated with menstrual hygiene, Lubambe in Partnership with a youth and women led organization called Copper Rose has launched a Menstrual Hygiene Management Project

((MHMP) in Konkola Community.

Copper Rose, who focus on Adolescent Sexual Reproductive Health has so far trained 20 women from Konkola Community in making of reusable sanitary wear. The women have also been trained in financial literacy skill to better manage their businesses.

During the launch, 150 pupils at Konkola Primary School received a pack each of reusable sanitary wear.

Speaking at the launch of the Program, Lubambe's Community and Stakeholder Relations Manager Lomthunzi Mbewe said that the main aim of the project was to break down menstruation myths and misconceptions in the community and make a business case out it.

"We are ready to talk about menstruation and break the boundaries around it," Ms Mbewe said. She expressed happiness that the reusable pads were accepted in the community and that it was the aim of the mine to move away from corporate philanthropy and focus more on sustainable social investments in a bid to empower communities around Lubambe mine.

Copper Rose Deputy Programmes Manager Daisy Lutanga commended Lubambe for taking up the project. She said if well implemented, many girls would attend school regularly as the pads could last for 1 year six months if well kept.

She said there was the need for Zambia to ensure that pads were highly distributed than condoms because menstruation was not a choice but something that was natural and part of the biological makeup of women.

Ms Lutanga advised recipients of the pads to always keep them clean and ensure that they were entirely dry to keep infections away.



Left: Lubambe Community and Stakeholder Relations Manager Lomthunzi Mbewe handing out a pack of sanitary wear to a pupil (middle). Right: Copper Rose Deputy Programmes Manager Daisy Lutanga

LUBAMBE INTRODUCES COLOUR CODED BINS TO EFFECTIVELY MANAGE WASTE

Mining activities generate large amounts of waste. Waste may include rocks, tailings, water and chemicals.

Disposal of mining waste brings about a contamination threat to underground water, air and the general environment.

To effectively manage the disposal of waste, Lubambe has introduced standard colour coded bins at the mine.



Plastics being thrown in the white coded bin

“Effective segregation of waste means that less waste goes to land-fill which makes it cheaper and better for people and the environment,” Yabe added.

He disclosed that a total of 120 bins would be painted and placed in specific areas based on the kind of waste produced.

White would symbolise plastic, **Red** for Hazardous waste, **Green** Bio- Degradable waste, **Brown** scrap metals, **Blue** for paper and **Yellow** will be reserved for medical waste.

Bio-degradable waste such as food and vegetation would not be disposed of but would be processed into manure and used for grass maintenance. Plastics, on the other hand would be given to communities for recycling projects meant to empower them.

Yabe appealed to employees to dispose of waste in designated places.

Lubambe Environment Manager Lucky Yabe says the introduction of colour codes on waste bins was aimed at guiding workers to throw the different types of waste in specific coloured bins. Yabe added that the initiative would also empower the residents in Konkola Township

It is the first time that the mine is introducing colour-coded bins. Yabe revealed that employees had been sensitised on waste management and that he was looking forward to all workers abiding by the new rules and regulations governing waste management.

“The simplest, but most important aspect of waste disposal is to properly colour coding the bins. Each colour code means something different in terms of the disposal process, so following the codes is critical for not only compliance standards but also to keep safe waste disposal methods,” Yabe said.

SHIFTING INTO THE RIGHT GEAR

By Galatia Dyson

Lubambe Copper mine is an underground mechanised mine where most of the major mining activities are carried out using machines. The use of efficient and effective underground equipment to ensure safety of employees, improved productivity and reduced incidences of low-skilled work, is a priority for the new mine owners, EMR Capital of Australia.

Lubambe's vision is to become the Best Mine in Zambia, through safe operations, sustained production of above 40,000 tons of copper per year by 2021, best in class productivity and efficiency and production at (C1) cash costs below half of all the world's copper mines.

To ensure this vision is attained and sustained, the mine management identified all factors that were believed to be a risk or bottleneck to the operation of the mine and specific mitigation measures were employed.

Among the constraints passed on from the previous mine owners, underground mobile equipment was identified as one of the major challenges to achieving the desired productivity as most of the equipment was old (worked passed the replacement period) and characterised by frequent breakdowns.

To mitigate the problem of inadequacies in the major underground equipment reliability, the mine management has embarked on a program to replace the old equipment with new and in most cases of bigger capacity in order to augment productivity.

So far, the mine has acquired two (2) Production Drill Rigs from Sandvik, three (3) ST18 Loaders and five (5) MT42 Dump Trucks from Epiroc which are already in operation at the mine. This initiative has allowed for decommissioning of the most unreliable machines to ensure reduced unplanned downtime and increased safety of employees.



MT42 Dump Truck



Sandvik DL321 Drill Rig

Additionally, two Fermel explosive vehicles and two utility vehicles have been procured from South Africa and Australia respectively.



Fermel Charging Unit

The role of these utility vehicles is to support the overall ongoing operation of the mine, and the value proposition comes from the equipment's ability to improve operational safety and reduced overall mine operating costs through improvements in efficiency and productivity.

To further improve the safety of personnel and increase productivity, the mine management has commenced tele-remoting of underground equipment, currently, two (2) LH517 Loaders have already been retrofitted with this system. The system allows the operator to operate the machine in remote from a confined cabin away from the machine line of site.

Perceptions and Facts about Emerging Technologies

The automation (tele-remoting) of underground equipment at the mine promises several benefits, mainly, increased fleet utilisation, improved working conditions and safety, increased production, reduced maintenance costs, improved employees' skills as well as optimised tramming speeds and smoother equipment operation.

While the introduction of machines and remote-control systems at the mine may be viewed as a disruptive technology by society, the system has the potential to remove people from often very dangerous areas of the mine making the workplace safe. Further, the mine has instituted various forms of training in preparing the current equipment operators and the maintenance personnel to manage the remote-controlled machines, this move is already a sign of job security for these employees. On the other hand, this gesture pulls the Lubambe Copper mine equipment operators as well as the maintenance personnel to higher levels of technology with the prospect of being recognised globally.

It is a well-known dictum that technology is at the core of quality and improved productivity, yet, the pace of technological change/advancement is usually faster than the rate at which organizational changes are assimilated and institutionalized. However, to be the best mine in Zambia, Lubambe Copper mine is determined to embrace modern technology as a 'pattern' in its operations and this may stand true that people who make decisions about acquiring technology for mines do not choose technology per se; they choose the beneficial results of the technology which in most cases manifests in improved safety and pro-

ductivity. Therefore, the new technologies being initiated by Lubambe Copper mine have the advantage of enhancing the safety of employees and improving productivity.

The mine has embarked on replacing old equipment in order to improve the safety of personnel and improve productivity.



Simulated Training



The Tele Remote Guidance System

JESSIE KAPOTWE AND 32 OTHERS RECEIVE LABOUR DAY AWARDS

She is a quiet and unassuming woman who has served Lubambe for the last 13 years. Jessy Kapotwe's hard work, loyalty and long service have not gone unnoticed, she is one of the



Jessie Kapotwe (R) with CEO Nick Bowen (L) after receiving her award.

employees that received a labour day award for long service on May 1.

A general worker at Lubambe's Corporate office in Chingola, Jessy joined the then Teal Exploration and Mining in 2006.

Lubambe Copper Mine presented Labour Day awards to 33 deserving employees during the Labour Day celebrations held at Konkola Stadium in Chililabombwe. Chief Executive Officer (CEO) Nick Bowen and Chililabombwe District Commissioner Paul Mulenga and Mayor Christabel Mulala were on hand

to present certificates and cash to deserving employees.

The CEO commended the 33 employees for their hard work and service rendered to the company. He encouraged all employees to continue working hard and help to fulfil the company's vision of being the best Copper Mine in Zambia

Speaking after the awards ceremony, Jessie hailed management for recognising her work and that of her colleagues. An excited Jessie said that it was the first time that she was receiving a Labour Day award at Lubambe.

2019 LABOUR DAY AWARD RECIPIENTS

MINING DEPARTMENT

Godfrey Ngosa-	Long Serving Employee
Fumbani Mwandila-	Most Improved Employee
William Bwalya-	Most Hardworking Employee
Moses Bwalya-	Most Safety Conscious Employee
Jimmy Katebe-	Most Disciplined Employee

ENGINEERING DEPARTMENT

Kunda Chikuswe-	Long Serving Employee
Patrick Chibwe-	Most Improved Employee
Cleopatra Musonda-	Most Disciplined Employee
Joshua Phiri-	Most Hardworking Employee
Amon Manda-	Most Safety Conscious Employee

TECHNICAL SERVICES DEPARTMENT

Samuel Goma Kalusa-	Most Hardworking Employee
Sylvester Musonda-	Most Improved Employee
Charles Chola-	Most Safety Conscious Employee
Simon Nyirenda-	Long Serving Employee

FINANCE & ADMINISTRATION DEPARTMENT

Mwenya Kaoma-	Most Disciplined Employee
Sharon Nguni-	Most Hardworking Employee
Paul Kafunda-	Most Hardworking Employee

CIVIL WORKS DEPARTMENT

Isaac Mapulanga-	Long Serving Employee
Remmy Mulenga-	Most Hardworking Employee

METALLURGICAL DEPARTMENT

Gregory Michelo	Long Serving Employee
John Mwewa	Most Disciplined Employee
Jeff Chibesa	Most Improved Employee
Yankonde Bwaanga	Most Safety Conscious Employee
George Kasembe	Most Hardworking Employee

SHE DEPARTMENT

Edris G. Mwila	Most Disciplined Employee
Fisher Sichikalile	Most Hard Working Employee

SECURITY DEPARTMENT

Wilson Chama	Most Hardworking Employee
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HUMAN RESOURCES DEPARTMENT

Abel Lupiya	Most Hardworking Employee
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EXPLORATION DEPARTMENT

Diana Musonda	Most Improved Employee
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GM OPERATIONS DEPARTMENT

Rucia Chitendi	Long Serving Employee
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CORPORATE OFFICE

Jessy Kapotwe	Long Serving Employee
Kabanda Chewa	Most Improved Employee

CSR DEPARTMENT

Veronica Shingalili	Long Serving Employee
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Lubambe team during the Labour Day Display at Konkola Stadium



Lubambe CEO Nick Bowen (L), award recipient (M) and Chililabombwe DC Paul Mulenga (R).



Lubambe employees during the 2019 Labour-Day Celebrations

The workers received awards in the following categories: most improved, most hard-working, long-serving, most disciplined and most safety-conscious.

This year's Labour Day was observed under the theme: "Enhancing productivity and alleviating poverty through the decent work Agenda".

'SHE' WINS 2019 INTER-DEPARTMENTAL FIRST AID COMPETITION

In a mining set up some knowledge of basic First Aid could spell the difference between life and death.

First Aid refers to emergency or immediate care that should be provided when a person is injured or presented with a life-threatening situation. It is for this reason that the Chamber of Mines organises annual safety competitions to encourage mining firms to

enhance the practice of First Aid. On 15 June, Lubambe hosted the 2019 Inter-Department First Aid competition as a prelude to the annual safety competition to be held in North-Western Province in August.

The Safety Health and Environmental Department (SHE) emerged champions after beating seven other teams at the tightly contested competition. Following

their victory, the SHE team automatically qualified to represent Lubambe at the forthcoming Inter-Company First Aid Competition.

Eight teams took part in the competition and were subjected to three different types of tests, the scenario, individual and team tests to assess participants knowledge in First Aid.

Lubambe's Senior First Aid and Training Officer David Mupeta said the main aim of the competition was to enhance good First Aid practices in order to save lives. He said First Aid was important because it provided medical treatment before professional assistance could be rendered.

Mr Mupeta was confident that his trainees were equipped with the necessary skills in First Aid that would ensure lives were saved before professional help arrived.



Winners of the 2019 IDFAC with Lubambe management and Chililabombwe District Administrators after receiving their prizes

Speaking at the same function, Zambia Chamber of Mines Council for First Aid representative Dr. Mwangala Muyendekwa said Lubambe recognized the Zambia Chamber of Mines Council for First Aid as the only body with the mandate to train First Aiders in the country. He commended the mine for having a ratio of 1 first aider to 3 employees, stating that this was a positive move as accident victims would be attended to promptly.

Lubambe Copper Mine Chief Executive Officer Nick Bowen congratulated the teams for exhibiting great teamwork which he said was a critical component in rendering help to those needing emergency care.

And Chililabombwe District Commissioner Paul Mulenga said First Aid was not only important to those in the mining industry but to all.



The SHE team in action

He assured the mine of the government's continued support in all its activities. The DC expressed happiness that the mine had shown commitment to the improvement of its safety record through the provision of First Aid.

The General Managers team emerged in the second position, while the Mining Production and Concentrator teams took up third and fourth positions respectively. Other teams that participated included: Technical services, Engineering, the Community and the Special Team.

PRESIDENT LUNGU

Urges LCM To Explore Ways Of Utilising Underground Water

Republican President Edgar Lungu has urged Lubambe Copper Mine to partner with relevant stakeholders and explore ways of using underground water for commercial and domestic purposes.

The Head of State noted that it was ironical that Mining companies like Lubambe were pumping out thousands of cubic litres of water from underground every day when Water Utility Companies were failing to provide adequate water to communities for commercial and domestic purposes.

President Lungu was speaking at the Lubambe Pavilion at the Copperbelt Agriculture Mining Industrial Networking and Enterprise Exposition (CAMINEX) on June 5.

“What are you doing with the water that you pump from underground? You should consider working with other stakeholders to see how best we can use that water for the benefit of our people,” President Lungu said.

And Lubambe Copper Mine Communications Manager Loyce Saili informed the President that the is-

sue of managing underground water was an on-going conversation by Management at the Mining firm. Lubambe currently pumps out around 21,000m³ of water daily

Meanwhile, President Lungu has described the performance of the mining sector as positive since 2018.

Speaking when he officially opened the 2019 CAMINEX in Kitwe on June 5, the President said Copper production had increased by 7.8 per cent in the year 2018.

He noted that Copper production increased from 799,329 tonnes in 2017 to 861,946 tonnes in 2018, reflecting improved production at almost all the mines in the country.

“However, for us to achieve the vision of a thriving mining sector, government is implementing measures to see both large and small-scale mining companies develop to their fullest potential”, he said.

He noted that small scale mining had the potential to grow and contribute significantly to economic development and diversification, stating that its potential had not been fully harnessed.



(H.E. President Edgar Lungu with LCM Communications Manager Loyce Saili at the Lubambe Pavilion)

The President added that the government was looking forward to a win-win situation where mining operations could be sustained and jobs of the people safeguarded. He expected that mining is to take place in a safe environment with zero fatalities, adding that monitoring of mining operations would be enhanced to ensure that the safety of employees was prioritised.

VENUS AND JAMES ARE EIZ FELLOWS

Concentrator Training Coordinator James Kasanda and Metallurgical Manager Venus Kasito have been conferred the title of “Fellow” at this year’s annual general conference for the Engineering Institute of Zambia (EIZ) held in Livingstone from 26 -28 April 2019.

“Fellow” is the highest professional class of membership of the EIZ and is conferred on a member by the institution in recognition of a distinguished record of accomplishment in Engineering.

To qualify as a Fellow, one should have been engaged for not less than 10 years in a position of superior responsibility in the administration, design, execution of such important work as in the opinion of the Engineering Council or in practice as a consultant in his or her own account

and acquired eminence in the profession. The candidate should also have engaged in lecturing or teaching at a university, institute or school for not less than 10 years and should have engaged in research of any approved nature for not less than 10 years.



Engineer Kasanda (FEIZ) at the EIZ conference in Livingstone

MEET JAMES AND VENUS

Engineer James Kasanda (FEIZ) is Concentrator Training Coordinator for Lubambe Copper Mine. He has 33 years of work experience as an engineer in the mining industry and the private sector of Zambia.

Major Accomplishments - James

- Conducted the separation of Underground and Open-Pit Ores at Nchanga Concentrator in 1995. Optimized the Nchanga Underground Acid Insoluble Copper (AICu) Recovery up to 80-90 per cent Tcu.
- Conducted the following process improvements at Nchanga Concentrator (1996 -2001);

Optimisation of West mill Grind (55-60% -75 microns) and installation of Krebs D20 cyclone-East and West Mill Concentrators to replace the D36 inch cyclones, he also commissioned a 1x4 Filter presses at Nchanga for handling Medium grade Copper and Cobalt Concentrates.

Produced Cobalt Concentrate during low Copper throughput from Nchanga Open-Pit (in 1996) (5000T), (in 1997(16,500T), and (in 1998(>1000, 000.T). The 1998 Nchanga cobalt production reduced the world Cobalt price and improved cash flow for ZCCM prior to privatisation.

- At Chibuluma Mine PLC, he improved throughput from 30,000tpm to 60,000tpm by implementing the Theory of Constraints (TOC).
- In Congo DRC, at Luisha DMS, under a Canadian company called African Metals Corporation, he commissioned and optimised the 250 tpd Plant (Copper Oxide) to operate efficiently.

- At Lubambe Copper Mine Ltd he set up since 2012, the Metallurgical Training systems, procedures, Manuals, registered and accredited the Training Centre in 2016 with TEVETA as class I institution including the Trainers.
- He also trained Crushing, Milling, Flotation, Filtration operators to operate the Plant competently resulting in improved recovery from 74-85 per cent Tcu after stopping the firefighting syndrome that existed after the commission of the Plant.

Apart from being a committed career person, James Kasanda is a proud husband and father of four children who enjoys spending some quality time with his family during his free time. He has described his elevation to a Fellow as a sound achievement.

Engineer Venus Kasito

Engineer Kasito (FEIZ) has 34 years of experience as an Engineer in Base Metals, Diamond Treatment and Cement Manufacturing Plant. He is currently working as a Concentrator Plant Manager for Lubambe Copper Mine.

He wanted to become an Army Officer but the thought of becoming an Engineer crossed his mind when he saw Engineering graduates from the University of Zambia (UNZA) being given Landcruisers after graduating.

He says being conferred with the title of Fellow is a big achievement, especially that it is the highest class of professionalism of the Engineering Institute of Zambia. He says the conferment means that integrity and wisdom pay off and that it has ultimately revealed his Engineering potential. He says it also means that he can now serve the nation when called upon.

Engineer Fellow Kasito is a family man with four children.



Engineer Kasito (FEIZ) at the EIZ conference in Livingstone

Major Accomplishments - Venus

- Involved in numerous projects that increased total Plant Overall Recovery from 80% to 85% and mill ball usage reduction from more than 1100gpt to less than 350gpt at Lubambe Copper Mine.
- Introduced the use of used tyres, rice husks, cow dung, etc. in a Kiln and this reduced coal usage by 1% at Chilanga Cement Plant.
- Increased plant availability by 0.5% by introducing the use of Calgon in process water and this resulted into reduction of plant downtimes at Mopani Copper Mines.
- Commissioned the two flotation Columns that replaced the twelve uneconomical Davcra Cleaner Cells, and this resulted in increased Overall Recovery from 93.50% to 96.00% and concentrate grade improved from 43%TCu to 48%TCu at Mufulira Mine Concentrator.
- Recommended and installed D20 Cyclones to replace the rake classifiers that were very costly in terms of maintenance at Mopani Copper Mines.
- Reduced Kiln fuel usage from 1050Kcal/Kg clinker to 950Kcal/Kg by installing splash boxes in the Dopol towers and clinker production increased to 185,000 tonnes the highest ever at Chilanga Cement Plant.
- Eliminated plant production bottlenecks by Installing and commissioning 05 Sandvik hydro set crushers, Aerated flotation banks, Flotation Column, Larox Ceramic Disc filters with a Rockwell Allen Bradley PLC/SCADA system at Luanshya copper mines and three Sandvik hydro set crushers and high rate production thickener at Mopani Copper Mines.
- Involved in the Construction of a new tailings pump house from having three booster pump stations to two at Mopani Copper Mines.
- Accomplished the replacement of smooth rolls with studded rolls in circuit with a deagglomeration unit and this resulted in savings of more than 70million Pula as most of the diamonds were recovered at Debswama Diamond Mine.

“MONITOR SUGAR INTAKE” - DR. WELSH



Sugar – an additive in certain foods and drinks

Sugar is a generic name for simple soluble carbohydrates that occur naturally in some foods and drinks. They are also an additive in certain foods and drinks. Consuming too much sugar can lead to health problems, such as weight gain, diabetes, tooth cavities, and more.

Many healthy food products, such as dairy products, vegetables, and fruit, naturally contain sugars. The sugar in these foods gives them a sweeter taste.

It is important for people to include these foods in their diet, as they come with a range of other nutrients that provide valuable health benefits. However, manufacturers tend to add sugar to foods such as cereals and cake and some drinks. It is these added sugars, or free sugars, that cause health problems.

A health practitioner, Dr Marian Welsh has advised people to be cautious and monitor the amount of sugar intake in order to avoid health challenges associated with high intake of sugar such as diabetes.

Speaking at a special Health talk for female employees at Lubambe Mine on May 2, Dr Welsh noted that the amount of sugar consumed by most people was alarmingly high. She added that what was even more worrying was that most people did not care to check the amounts of sugar contained in the food that they purchased and consumed.

“The excessive intake of sugar affects the end blood vessels of our bodies which cause numbness in the tips of body parts such as fingers and sexual reproductive organs in men”, she said.

She advised the employees to monitor the amount of sugar

being consumed by their children stating that an excessive consumption of sugar by children would cause diabetes and destroy their dental formula at a tender age. “Some of the symptoms of diabetes in children can be seen through frequent urination and thirst, if you observe such symptoms in your children please have them checked for sugar”, said Dr Welsh.

She further urged the employees to follow instructions set by the World Health Organisation (WHO) on the amounts of sugar to be consumed per day depending on one’s age group and gender to help control diabetes. Dr. Welsh disclosed that WHO standards of sugar intake per day were 9 -10 teaspoons for men and 5-6 teaspoons for women with children allowed to consume 3-5 teaspoons per day. The same applied to natural sugars in fruits, Nshima and Vegetables.

“Too much sugar leads to addiction and destroys our bodies if the food is not natural, it is not good for consumption”, she said.

Speaking at the same event, Lubambe Paramedic Sooi Lombard advised employees to control High Blood pressure by controlling the consumption of sugar and salt every day.



Lubambe female employees during the Health Chat.



Patient being examined for blood pressure at the Lubambe Site Clinic

Health Watch

with Sooi

Hypertension

Is a chronic condition that is associated with high blood pressure and it is also known as the silent killer since it can be asymptomatic for quite some time. Prolonged high pressure inside the arteries can cause direct damage to the artery wall which can lead to medical conditions like; kidney failure, heart attack, eye problems and stroke.

What is Blood Pressure?

Blood pressure is the force the blood exerts onto the blood vessel wall, influenced by the work of the heart, as well as the resistance the blood vessels present to the blood flow. Blood vessels can dilate or constrict to help the body direct the blood to the required area and it is

this ability that changes the resistance of the blood flow in the vessels. Blood pressure has two readings, with the top reading known as the systolic pressure and the bottom reading as the diastolic reading.

Systolic Pressure



When the heart contracts, it ejects blood into the aorta down to the rest of the body through the arteries. The arteries are elastic and stretch to accommodate this extra blood flow. This rise in pressure is measured as the systolic pressure.

Changes in the systolic pressure are mostly due to the heart pumping with too much force or at a higher rate which can be due to stress, exercise, medication and illness.

Diastolic Pressure



The diastolic pressure measures the pressure the blood exerts onto the blood vessel walls when the heart is at rest. The heart relaxes after it contracts, allowing the heart chambers to fill up with blood before it contracts again. The blood pressure measured during this period is known as the diastolic pressure and it is the lower read of your blood pressure reading.

Changes in diastolic pressure are mostly due to volume or resistance changes inside the blood vessels.

Causes of Hypertension



Age: With age, the blood pressure increases steadily due to the hardening of the artery walls. The hardened artery wall loses its elasticity which and cannot stretch to accommodate for the extra blood, thereby increasing the blood pressure.



Ethnicity: Some ethnic groups are more prone to high blood pressure. *Zambian males are prone to high blood pressure from the age of 35 and above.*



Weight: Overweight people stand a higher chance of developing high blood pressure. This goes hand in hand with a sedentary lifestyle.



Smoking and Drinking: Smoking and drinking cause direct damage to the blood vessels and the carbon monoxide in the cigarettes make the blood thicker, which increases the risk for high blood pressure.



High salt intake results in water being re-absorbed leading to high blood pressure.



Stress usually produces hormones that temporarily increases the blood pressure by increasing the heart rate and narrows some of the blood vessels.

Other causes are medical conditions like heart problems and family history of hypertension.

Symptoms

Hypertension is normally silent and you should seek help urgently when you have the following symptoms;

Chest pain

Shortness of breath

Visual changes

Symptoms of stroke, such as paralysis or a loss of muscle control in the face or an extremity

Blood in your urine

Dizziness

Headache

LUBAMBE IN PICTURES



Entertainment during the 2019 Lubambe Inter-Department First Aid Competition



Lubambe CEO Nick Bowen giving out prizes to winners at the 2019 Lubambe Inter-Department First Aid Competition. Looking on is Chililabombwe DC Paul Mulenga and Chililabombwe Mayor Christabel Mulala



One of the competing teams during the 2019 Lubambe Inter-Departmental First Aid



Tyre Fitters at the Lubambe Tyre Workshop



Female Dump Truck Operator Lydia Chilufya checking her machine



Lubambe employees at their pavilion during CAMINEX



Lubambe Team presented a K200,000 cheque towards the hosting of the Copperbelt Investment Exposition



Lubambe at the Copperbelt Investment Exposition



Rock breaker at 75-meter level.



OUR VISION:

To be the Best Copper Mine in Zambia

- Safe operations with no lost time injuries
- Sustained production above 40,000 tons of copper per year
- Best in class productivity and efficiency
- Production cash (C1) costs below half of all the world's copper mines

We will achieve our Vision by delivering our improvement plan, **Twimbe Umukuba**, on time and on budget

OUR VALUES:

Safety- Nothing is more important

People - Best people, doing quality work on time and on budget

Honesty- We work and act truthfully

Accountability- Responsible for all our actions

Care - For our people, the Community and our Country

Nick Bowen

CEO

September 2018



