



Prof Helen Schneider, SOPH Director (fifth, right) and SOPH Staff welcome delegates from Boston University

Professor Sandro Galea Dean, Boston University School of Public Health visits UWC School of Public Health

Sandro Galea is a physician and an epidemiologist. He is the Dean and Professor of Epidemiology at the Boston University School of Public Health. Prior to his appointment at Boston University, Dr Galea served as the Professor and Chair of the Department of Epidemiology at the Columbia University Mailman School of Public Health. He has previously held academic leadership positions at the University of Michigan and the New York Academy of Medicine. His latest book, co-authored with Dr Katherine Keyes, is an epidemiology textbook, *Epidemiology Matters: a new introduction to methodological foundations*





Prof Galea delivered a public lecture on the topic of *Complexity and Causal Thinking in the Population Health Sciences*





SOPH Hosts Online Meeting of Universities on Draft Guide to Strengthen Post-graduate Education

The School of Public Health at the University of the Western Cape hosted a WebEx session with its partner universities in Africa and Asia on 10 December 2015. The meeting, facilitated by SOPH Staff member Nikky Schaay, deliberated on a draft guide on *'Curriculum Design and the Process of Transitioning from face-to-face to distance Teaching and Learning in the Post-graduate Public Health Field'*. The guide is a documentation of the discussion and lessons drawn from the two-part collaborative workshops hosted by SOPH on *'Emerging Opportunities in Post-graduate Public Health Education in Health Systems Development'*, which were held in May and October 2015.



Educators based in universities and training institutions in Kenya, Nigeria, Ghana, Bangladesh, India, Tanzania, Ethiopia, Rwanda, and South Africa participated in the meeting and shared their input on the Guide. Participants also shared relevant developments in their respective institutions. The meeting ended with participants pledging to continue sharing and collaborating through existing institutional online learning management systems and networks like the Association of Schools of Public Health in Africa (ASPHA).

Report on the 2nd Workshop

The second of the two-part workshop on *'Emerging Opportunities in Post-graduate Public Health Education for Health Systems Development'* was held 19-22 October 2015. The workshop is part of SOPH's ongoing work with sister institutions in Africa and the global south to strengthen post-graduate public health education generally, and training in health systems analysis and research specifically.

The workshop was attended by educators representing 14 public health training universities across 11 countries. Participants comprised academic staff already actively involved in programme and curriculum development in their respective institutions, and have the position and commitment to drive and direct development of educational innovations.



Based on feedback from participants of the first workshop (18-22 May 2015), curriculum and materials development were the focus of this workshop. Participants engaged in sharing, reviewing and refining aspects of their curricula, courses and/or teaching materials.

For the most part of the workshop each institution-based team worked on their respective institution's curriculum. The workshop afforded participants with opportunities to present and listen to the critique and recommendations of peers on particular aspects of their work. They reflected on the feedback received and discussed how to incorporate proposed changes and improvements into their local curriculum and/or educational materials. The Workshop also enabled participants to draw on the available technical support within the group and locally in Cape Town for the design of curricula and materials, revising and re-configuring curriculum or educational materials.

Participant responses to the relevance of the Workshop included the following comments:



'The workshop was very helpful in understanding where each of the participant countries/institutions stands in terms of public health education and integration of online tools. It was particularly insightful to understand some of the basic issues of computer literacy, facility of reading and comprehension of online materials, access to the internet and technology, etc. These are issues that were very relevant to participants' countries but may not have received adequate emphasis at other teaching/learning forums. We

also received some very useful inputs to the content of the course on public health advocacy that we are in the process of developing. In addition we received some useful orientation in some of the latest teaching methods and approaches. We were also able to spend considerable time in getting to know other participants and networking with them, which was very nice.'

Delegate from Institute of Public Health, Bengaluru, India

'Thank you very much for the eye-opening experience in the workshop. It has changed our view on Teaching and Learning forever.'

Delegate from University of Pretoria, South Africa

'Our main expectation from this workshop was to be equipped with the knowledge and skills to contribute to the development of the curriculum for the Doctor in Public Health degree (DrPH) program by including the principles and approaches of workplace based learning and online interactions platforms. The workshop concentrated on building our capacity in the area of curriculum development for authentic learning which was relevant for designing curriculum for workplace based learning and online interactions.'

Delegate from University of Ghana

All sessions/guidance I received during the workshop were largely valuable and helpful. The workshop has completely provided the tools necessary to develop perfect and comprehensive distance learning (blended) materials. Obviously after this workshop I am

now very motivated and confident to develop distance learning materials (module) in my institution.

Delegate from University of Eduardo Mondlane, Mozambique

'The session on the curriculum was very informative. Unpacking the curriculum content made me think critically about the effect that distance learning may have on the learner and whether that would enhance or hinder learning. It also made me think more realistically about the learner's skills, experiences, values and so forth. The use of a case study and the discussion on the threshold concept really brought home the whole purpose of understanding the transition process from face-to-face, to distance/blended learning. Team members asked questions and shared suggestions that we plan to incorporate as I write the curriculum.'

Delegate from Great Lakes University, Kisumu, Kenya



Media Coverage on...

White Paper on National Health Insurance

NHI White Paper Out Today

***<http://www.health-e.org.za/2015/12/11/nhi-white-paper-out-today/>
By Kerry Cullinan on December 11, 2015 in National Health Insurance (NHI)***

Government's plan to set up a massive national medical aid with compulsory contributions from all working South Africans, is becoming a reality.

The much-awaited White Paper on the NHI, due to be released later today (11 Dec), is based on a central national NHI Fund that will 'buy' healthcare services from both public and private hospitals, clinics and healthcare providers.

All health institutions will have to pass certain minimum standards to be accredited as NHI service providers.

Clinics will be paid according to how many patients they see, while hospitals will be paid according to the level of services they provide as well as patient numbers.

Health Minister Dr Aaron Motsoaledi promised in this Budget speech that he would release the National Health Insurance (NHI) White Paper this year, and he has squeaked it in at the last minute as everyone is due to go off on Christmas leave.

Areas of uncertainty include "the vexing question of the role of medical aids", according to one government official and the role of provinces.

At a briefing of civil society yesterday, Motsoaledi said that White Paper proposes doing away with medical aid brokers, which made over R1,5-billion a year.

The NHI will need a massive amount of money beyond that raised by taxpayers' contributions, and it is unclear where this will come from in the current tough economic climate. - Health-e News.

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## ***NHI could Require Additional Tax Revenue of R71.9bn***

***<http://www.bdlive.co.za/national/health/2015/12/11/nhi-could-require-additional-tax-revenue-of-r71.9bn>***

***by Tamar Kahn, 11 December 2015, 15:34***

THE financing requirements for National Health Insurance (NHI) could potentially require additional tax revenue of R71.9bn in 2010 prices by the financial year 2025-26, according to the NHI White Paper.

Three potential sources of tax revenue are identified for funding the shortfall: increasing VAT, a payroll tax, and a surcharge on personal income tax. Five alternative scenarios using various combinations of these tax bases are identified as possibilities.

The white paper, released on Friday following Cabinet approval on Wednesday, is the next step in policy development after the release in August 2011 of the green paper on NHI, which proposed implementing universal health coverage that is free at the point of delivery over the next 14 years. A central NHI fund is to be established, to pay accredited public and private sector providers.

The paper says there is uncertainty about the funding requirements for NHI because they depend on public sector improvements and medical scheme regulatory reforms "that have not yet been fully articulated". The basket of services that is to be provided to patients under NHI is not defined.

"We will design it in such a way that it is affordable for the people of SA", Health Minister Aaron Motsoaledi said at a media briefing earlier on Friday.

"We believe there is a lot of money for health in the system," he said, citing as examples provincial health departments, and the various government funds for compensating people injured at work, on the mines, or in traffic accidents.

More funds were available in the private health sector too, he said. For example the state provided tax credits of R16bn to medical scheme members.

The paper outlines sweeping reforms to the healthcare sector, one of the biggest of which is a proposal to limit medical scheme cover, by prohibiting medical schemes from duplicating cover provided by NHI.

Central hospitals such as Charlotte Maxeke and Groote Schuur are to become centralised assets, rather than being under the control of provincial health departments. This idea was floated several years ago and met strong opposition, particularly from the Western Cape.

"NHI is a policy shift that will contribute to eradicating poverty," the minister said.

Health, he said, should not be treated as a commodity subject to the vagaries of market forces. He cited a host of examples of staggeringly high bills for medical procedures conducted in private hospitals, emphasising that even better off citizens with medical scheme cover could face catastrophic health expenditure.

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NHI Will Cover Everyone: Motsoaledi

<http://www.timeslive.co.za/politics/2015/12/11/NHI-will-cover-everyone-Motsoaledi>

Susan Erasmus | 11 December, 2015 14:45

Health Minister Aaron Motsoaledi has revealed some of the details regarding government's plan to introduce National Health Insurance (NHI).

Under the NHI, medical schemes will only offer top-up cover for those services not covered by the NHI, the NHI will be funded through a central fund (partially funded from a payroll levy), medical brokers will be done away with (they currently receive R1.5 billion rand per year), and doctors will be able to access the central fund if they choose to participate in the NHI.

These were some of the key announcements made by Motsoaledi at the release of the White Paper on National Health Insurance at a press conference in Pretoria.

The NHI will not be a sprint, but will be an ultra-marathon, said Motsoaledi.

The Cabinet met on 9 December, and it was presumed that the NHI White Paper was on the agenda, as it was later confirmed that the cabinet had approved the White Paper, and that public comment would be invited.

The purpose of the NHI

National Health Insurance "seeks to transform the South African Healthcare system with emphasis on the promotion of health and the prevention of diseases. It also seeks to provide access to quality and affordable healthcare services for all South Africans based on their health needs irrespective of their socio-economic status", according to the South African Government website.

The government green paper was released in August 2011, and it proposed that the NHI would be implemented within 14 years. Pilot districts were established in all nine provinces.

Where will the money come from?

The cost of implementing the NHI is projected to R225 billion by 2025. Possibilities of raising these funds, according to reports from 2012, include a pay roll levy for all employed South Africans, and increase in VAT, or an income tax surcharge. These possible sources of revenue were confirmed on Friday by Motsoaledi in the press conference in Pretoria.

SA's economy is under increasing pressure, and how the government proposes to fund the NHI is a topic of interest for all South Africans. Another issue is how the public and private health sectors will function alongside one another, and what the future would be of medical schemes in South Africa. Motsoaledi announced on Friday that under the NHI, medical schemes will only offer top-up cover for those services not covered by the NHI.

State hospitals vs. private hospitals

There are state hospitals that would need a serious upgrade and in 2013 President Zuma proposed that this would be undertaken through public-private partnerships. Motsoaledi confirmed in Friday's address that you can't have a proper healthcare service without a proper healthcare infrastructure. He has also consistently attacked private hospitals for the high cost of the care they provide, saying that this contributes to high medical inflation.

"Everyone wants to own a private hospital in SA, because they say there is money in it", he said on Friday. He also mentioned that most European countries are moving to mandatory universal healthcare coverage and compared Obamacare to what the NHI is trying to achieve in South Africa.

The minister has expressed ongoing concern about the fact that 80% of the medical specialists in the country are servicing only 16% of the population - something the NHI is set to address. One of the ways of achieving this would be requiring doctors to show a certificate of need before being allowed to practise in certain areas. There is still no certainty with regards to the implementation of this.

Concerns raised by commentators on the NHI include financial constraints of already overburdened taxpayers, the possible exodus of medical staff from the private sector to other countries, the poor condition of many state facilities, the lack of properly trained managers and the lack of trained medical staff willing to work in rural areas.

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## ***Motsoaledi: We haven't Identified a Source of Funding for the NHI***

***<http://mg.co.za/article/2015-12-12-motsoaledi-we-havent-identified-a-source-of-funding-for-the-nhi>  
12 Dec 2015 09:45 | Ina Skosana***

The National Health Insurance white paper does not stipulate how the scheme will get funded; it only provides five possible scenarios.

"We did not identify any source of funding. We have just identified several methods of financing the NHI," says Aaron Motsoaledi.

Taking part in the National Health Insurance scheme (NHI) is going to be mandatory, not voluntary like belonging to a medical aid, said Health Minister Aaron Motsoaledi at the release of the long-awaited National Health Insurance (NHI) white paper on Friday in Pretoria.

"Population coverage under NHI will ensure that all South Africans have access to comprehensive quality healthcare," said Motsoaledi. The NHI will be phased in over a period of 14 years which started with 11 pilot districts around the country in 2011.

By using their NHI card, South Africans will have access to medical treatment, including pharmacies and emergency medical services without having to pay directly at the point of care. The white paper stipulates that NHI card holders "will not be expected to make any out-of-pocket payments such as co-payments and user fees at the point of healthcare delivery".

But the burning question of how the NHI will be financed remains largely "uncertain".

"We did not identify any source of funding. We have just identified several methods of financing the NHI," said Motsoaledi.

The document outlines "five alternative tax scenarios for funding the NHI shortfall by 2025/26". These include the "introduction of a payroll tax, a surcharge on taxable income and increases in the rate of value added tax".

But nothing is set in stone, as the NHI evolves "the tax treatment of medical expenses and medical scheme contributions will be reviewed," the white paper states.

Funding of healthcare services will be overseen by the NHI fund, which will be governed by the NHI commission. Healthcare professionals will need to get accreditation from the fund and medical schemes will "only offer complementary (top-up) cover for services that are not included in the health service benefits and medicines approved by the NHI".

Motsoaledi said that all of these reforms call for new legislation, as the Health Act does not meet the needs of the NHI. The implementation of the NHI will be led by six task teams that will oversee various aspects such as financing, medical service benefits and the future role of medical schemes.

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NHI Will Reduce Medical Aids to 'Complementary Services'

<http://www.health-e.org.za/2015/12/11/nhi-will-reduce-medical-aids-to-complementary-services/>

Kerry Cullinan on December 11, 2015 in National Health Insurance (NHI)

Government's White Paper on the National Health Insurance (NHI) proposes a single, compulsory medical scheme for all, with private medical schemes being reduced to offering "complementary services".

A central NHI Fund will buy health services from accredited healthcare providers.

All citizens and permanent residents will be covered by the NHI, while a special fund will be set up for refugees. Documented asylum seekers will be able to access emergency care. Everyone else will need medical insurance.

Launching the massive NHI White Paper in Pretoria, Health Minister Dr Aaron Motsoaledi described the NHI as "very, very impactful and complex". But he warned that its introduction was an "ultra-marathon" not a sprint.

Motsoaledi was also at pains to explain that ensuring universal healthcare for all is happening in countries all over the world, and that there is a "moral imperative" to ensure that those who need healthcare the most are prioritised, irrespective of their "socio-economic status".

Three phases

The NHI will be introduced in three phases, starting with preparing central hospitals to provide specialised services to all citizens, under the control of central government.

In phase two, all those who qualify for NHI will be registered and given NHI cards. Priority will be given to those most vulnerable, such as mothers, small children and old people.

A transitional fund will be set up to buy PHC services from certified non-specialist public and private providers. All "ideal clinics" will be accredited to provide primary care.

Public hospitals accredited by the Office of Health Standards Compliance (OHSC), emergency medical services and the National Health Laboratory Services (NHLS) will also be contracted.

Private doctors will be contracted to provide services at primary level, and this will be extended to healthcare providers who can assist to address "physical barriers to learning" for school children, such as audiologists, speech therapists, psychologists and optometrists.

The Medical Schemes Act will be amended so that medical aids will only provide complementary services.

In the third phase, working people will start to make mandatory payments and private sector providers such as hospitals and specialists, will be contracted to provide services.

No one will be able to simply walk into a specialists' office. They will need to "start at the bottom, which is why the bottom will need to be improved", said Motsoaledi.

Motsoaledi said money had to be found for the NHI and there was already R50-billion in primary healthcare, but that Treasury had proposed a number of options including taxes and increasing VAT. - Health-e News.

Improving Access to Medicines through Centralised Dispensing in the Public Sector: A Case Study of the Chronic Dispensing Unit in the Western Cape Province, South Africa

Bvudzai Priscilla Magadzire, Bruno Marchal, Kim Ward

Abstract

Background:

The Chronic Dispensing Unit (CDU) is an out-sourced, public sector centralised dispensing service that has been operational in the Western Cape Province in South Africa since 2005. The CDU dispenses medicines for stable patients with chronic conditions. The aim is to reduce pharmacists' workload, reduce patient waiting times and decongest healthcare facilities. Our objectives are to describe the intervention's scope, illustrate its interface with the health system and describe its processes and outcomes. Secondly, to quantify the magnitude of missed appointments by enrolled patients and to describe the implications thereof in order to inform a subsequent in-depth empirical study on the underlying causes.

Methods:

We adopted a case study design in order to elicit the programme theory underlying the CDU strategy. We consulted 15 senior and middle managers from the provincial Department of Health who were working closely with the intervention and the contractor using focus group discussions and key informant interviews. In addition, relevant literature, and policy and programme documents were reviewed and analysed.

Results:

We found that the CDU scope has significantly expanded over the last 10 years owing to technological advancements. As such, in early 2015, the CDU produced nearly 300,000 parcels monthly. Medicines supply, patient enrollment processes, healthcare professionals' compliance to legislation and policies, mechanisms for medicines distribution, management of non-collected medicines (emanating from patients' missed appointments) and the array of actors involved are all central to the CDU's functioning. Missed appointments by patients are a problem, affecting an estimated 8 %-12 % of patients each month. However, the causes have not been investigated thoroughly. Implications of missed appointments include a cost to government for services rendered by the contractor, potential losses due to expired medicines, additional workload for the contractor and healthcare facility staff and potential negative therapeutic outcomes for patients.

Conclusions:

The CDU demonstrates innovation in a context of overwhelming demand for dispensing medicines for chronic conditions. However, it is not a panacea to address access-to-medicines related challenges. A multi-level assessment that is currently underway will provide more insights on how existing challenges can be addressed.

<http://www.biomedcentral.com/1472-6963/15/513>



Assessment of Malawi's Success in Child Mortality Reduction through the Lens of the Catalytic Initiative Integrated Health Systems Strengthening Programme: Retrospective Evaluation

Tanya Doherty, Wangamwe Zembe, Nobubelo Ngandu, Mary Kinney, Samuel Manda, Donela Besada, Debra Jackson, Karen Daniels, Sarah Rohde, Wim van Damme, Kate Kerber, Emmanuelle Daviaud, Igor Rudan, Maria Muniz, Nicholas P Oliphant, Texas Zamasiya, Jon Rohde, David Sanders

Background

Malawi is estimated to have achieved its Millennium Development Goal (MDG) 4 target. This paper explores factors influencing progress in child survival in Malawi including coverage of interventions and the role of key national policies.

Methods

We performed a retrospective evaluation of the Catalytic Initiative (CI) programme of support (2007–2013). We developed estimates of child mortality using four population household surveys undertaken between 2000 and 2010. We recalculated coverage indicators for high impact child health interventions and documented child health programmes and policies. The Lives Saved Tool (LiST) was used to estimate child lives saved in 2013.

Results

The mortality rate in children under 5 years decreased rapidly in the 10 CI districts from 219 deaths per 1000 live births (95% confidence interval (CI) 189 to 249) in the period 1991–1995 to 119 deaths (95% CI 105 to 132) in the period 2006–2010. Coverage for all indicators except vitamin A supplementation increased in the 10 CI districts across the time period 2000 to 2013. The LiST analysis estimates that there were 10 800 child deaths averted in the 10 CI districts in 2013, primarily attributable to the introduction of the pneumococcal vaccine (24%) and increased household coverage of insecticide-treated bednets (19%). These improvements have taken place within a context of investment in child health policies and scale up of integrated community case management of childhood illnesses.

Conclusions

Malawi provides a strong example for countries in sub-Saharan Africa of how high impact child health interventions implemented within a decentralised health system with an established community-based delivery platform, can lead to significant reductions in child mortality.

doi: 10.7189/jogh.05.020412

Factors Associated with Excessive Body Fat in Men and Women: Cross-Sectional Data from Black South Africans Living in a Rural Community and an Urban Township

Kufre Joseph Okop, Naomi Levitt, Thandi Puoane

Abstract

Objective:

To determine the factors associated with excessive body fat among black African men and women living in rural and urban communities of South Africa.

Methods:

This is a cross-sectional analysis of data from the Prospective Urban and Rural Epidemiology (PURE) study, Cape Town, South Africa conducted in 2009/2010. The study sample included 1220 participants (77.2% women) aged 35–70 years, for whom anthropometric measurements were obtained and risk factors documented through face-to-face interviews using validated international PURE study protocols. Sex-specific logistic regression models were used to evaluate socio-demographic, lifestyle and psychological factors associated with three excessive body fat indicators, namely body mass index (BMI), waist circumference (WC) and body fat percent (BF%).

Results:

The prevalence of excessive body fat based on BF%, WC and BMI cut-offs were 96.0%, 86.1%, and 81.6% for women respectively, and 62.2%, 25.9%, and 36.0% for men respectively.

The significant odds of excessive body fat among the currently married compared to unmarried were 4.1 (95% CI: 1.3–12.5) for BF% and 1.9 (95% CI: 1.3–2.9) for BMI among women; and 4.9 (95% CI: 2.6–9.6), 3.2 (95% CI: 1.6–6.4) and 3.6 (95% CI: 1.9–6.8) for BF%, WC and BMI respectively among men. Age <50 years (compared to age >50 years) was inversely associated with excessive BF% in men and women, and less-than-a-college education was inversely associated with excessive BMI and WC in men. Tobacco smoking was inversely associated with all three excessive adiposity indicators in women but not in men. Unemployment, depression, and stress did not predict excessive body fat in men or women.

Conclusion:

The sex-differences in the socio-demographic and lifestyle factors associated with the high levels of excessive body fat in urban and rural women and men should be considered in packaging interventions to reduce obesity in these communities.

PLoS ONE 10(10): e0140153. doi:10.1371/journal.pone.0140153



The 2016 Call for Proposals is Now Open!

The PACF aims to alleviate the impact of HIV and AIDS on women and children's health. This call is focused on non-governmental and community-based organisations that can deliver change at a community level thanks to their links with, or representation of, the communities affected. Please note: the 2016 Call for Proposals is limited to Large Grant applications only. Large grants have an upper limit of £300,000 over three years and a lower limit of £75,000 (minimum £25,000 per year). No small grant applications are being considered in this round.

Please refer to the PACF Guidance Notes for comprehensive guidance on developing your application, the review process and FAQs. You will be able to find these by clicking here. All applications must be received by 23:59 GMT on March 29th 2016. Applications submitted after this time will not be accepted.

To read more about the application process, and learn about PACF's core values and funding priorities, please follow this link: <https://www.viivhealthcare.com/community-partnerships/positive-action-for-children-fund/applications.aspx>.

If you have any issues with your application, or would like to know more, please contact us at positiveactionforchildren@viivhealthcare.com and a member of our team will be happy to help.

We wish you all the best of luck with your submissions!

The PACF Team

The Rise of the Killer Superbugs

By Kerry Cullinan for Health E News 24 Nov 2015

Factory farming and our own excessive pill-popping is driving the development of "superbugs" that are able to evade our best medicines, making death from common infections possible once again. Now resistance to one of the very last effective antibiotics has been discovered.

Last week, there was bad news out of China: resistance to one of the world's last remaining antibiotics effective against a nasty group of gram-negative bacteria had been found in bacteria in pigs, pork and some humans. It is only a matter of time before this resistance spreads to bacteria worldwide, spurring the continued rise of "superbugs" – bacteria, viruses, fungi, and parasites that are impervious to our best medicines.

Already, one South Asian child dies every five minutes from drug-resistant bacteria, while around 25, 000 Europeans die every year from similar infections.

"The problem of resistance in South Africa is extremely serious for bacterial infections including TB and non-TB," says Professor Marc Mendelson, head of Infectious Diseases and HIV Medicine at the University of Cape Town.

Top of the list of bacteria other than TB that are developing resistance are those that cause pneumonia, urinary tract infections, gonorrhoea, and skin and soft tissue infections.

“Some bacteria in South Africa are becoming so resistant, that there is either only antibiotics of last resort, or they are untreatable,” adds Mendelson.

But this week’s news out of China means that even the last of the “last-resort” antibiotics is under threat. Colistin was discovered around 70 years ago, but it fell out of favour because it has some potentially serious side-effects. As it was not used widely for about 20 years, it retained its effectiveness against a group of nasty gram-negative bacteria which had been mutating to resist other antibiotics. Around 10 years ago, in the face of failing medicines, medical experts revived colistin use, although it was only supposed to be prescribed in an emergency. But during a routine test for drug resistance earlier this year, resistance to colistin was found in the *E. coli* bacteria in pigs, pork and some humans in south China. A few days back, the esteemed British medical journal, *The Lancet* described the discovery of the colistin-resistant gene in the bacteria, as “the breach of the last group of antibiotics, polymyxins, by plasmid-mediated resistance”.

Despite an appeal by health experts that the use of colistin should be heavily regulated, its use has become common in factory farms in China as farmers routinely feed their livestock with a range of medicines to ensure that their path from birth to the slaughter house is fast and disease-free. The mass-scale routine use of antibiotics for animals in factory farms, not to treat sickness, but to stimulate growth, is one of the main drivers of global antibiotic resistance. The other driver is the inappropriate use of antibiotics in humans that is driven by patient demand and the ignorance of doctors.

Last year, the World Health Organisation (WHO) released a report on antibiotic resistance based on data from 114 countries, and the findings were eye-opening.

“Without urgent, coordinated action by many stakeholders, the world is headed for a post-antibiotic era, in which common infections and minor injuries which have been treatable for decades can once again kill,” said Dr Keiji Fukuda, the WHO’s Assistant Director-General for Health Security at the report’s launch.

Resistance to carbapenem, the last-resort antibiotic for treating klebsiella infections, has been recorded throughout the world, according to the WHO. The klebsiella bacteria are a major cause of hospital-acquired infections such as pneumonia, sepsis, infections in newborns, and intensive-care unit patients.

Hospital patients are particularly vulnerable to drug-resistant infection because their immune systems are weak and some have open wounds or are on drips or ventilators, easy sites for infection. Poor hand-washing by healthworkers is a big culprit in spreading infection. The first South African patient with klebsiella pneumonia resistant to all antibiotics was recorded last year. The 86-year-old man was due to have heart surgery, but needed to be cured of pneumonia first. His doctors then discovered that his pneumonia bacteria were resistant to all available antibiotics. But in some countries, more than half of people are already resistant to carbapenem. Resistance to fluoroquinolones, used to treat urinary tract infections caused by *E. coli*, is also widespread. In many parts of the world, over half of all patients are resistant to this medicine.

“Treatment failure to the last resort of treatment for gonorrhoea - third generation cephalosporins - has been confirmed in Austria, Australia, Canada, France, Japan, Norway, South Africa, Slovenia, Sweden and the United Kingdom,” according to the WHO report. Over 100 million people get gonorrhoea every year.

“Unfortunately, our misuse and overuse of antibiotics is one of the major drivers of resistance,” explains Mendelson. “In the community setting, the inappropriate use is largely driven by common colds, other viral infections and many non-infectious causes of body aches. In the hospitals, we also use too many antibiotics inappropriately, often for too long and in needless combinations.”

The South African Antibiotic Stewardship Programme, set up three years ago to help the Department of Health to combat antibiotic resistance, includes both vets and doctors working in the public and private sectors. Mendelson, who co-chairs the programme, describes it as the “effector arm” to help implement the South African Microbial Resistance Strategy that was announced last year. The programme’s efforts are part of a global

campaign against antibiotic resistance that has gathered momentum this year as one drug after another falls under the wheels of the marauding superbugs.

Dr Marion Weston qualified as a doctor in Vienna, Austria, and now runs a practice in integrative medicine in Cape Town, combining conventional medicine and alternative healing treatments, including herbal remedies to treat patients holistically. She says the use of antibiotics is much more heavily regulated in Europe than it is in South Africa, where patients often expect and ask for antibiotics.

“About 90% of flus are viral, and antibiotics do not work against them. But because most acute infections are cleared in seven to 10 days, people think that the antibiotics have worked,” says Weston. “Antibiotics destroy the immune-stimulating gut bacteria that can fight infection, and it takes a long time to restore the gut bacteria.”

Weston favours the use of natural remedies and processes that stimulate her patients’ own immune responses to infection. She says the continual use of antibiotics not only means that the body does not learn to trigger its own immune responses, but the medicine upsets the balance between good and bad bacteria in the body, leading to other problems such as candida (thrush).

“Antibiotics should be reserved for when a person cannot deal with the infection anymore,” says Weston, adding that urinary tract infections are particularly hard to cure without antibiotics.

Meanwhile, Dr Carmen Pessoa-Silva, who heads the WHO’s anti-microbial resistance programme, says that it is a “fallacy” that the world needs more medicines: “Over the past 70 years, resistance has developed to one after the other anti-bacterial drugs. We need to consider other alternatives to drugs, such as vaccines and better infection control.”

Health E News 24 Nov 2015