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**THIS IS AN OVERVIEW BY THE NATIONAL DEPARTMENT OF HEALTH ON  
RESEARCH DONE GLOBALLY**

**SOUTH AFRICAN NEWS**

**South Africa's largest pathology service leapfrogs into the digital era**

**1 November 2016**

The National Health Laboratory Service (NHLS), the largest diagnostic pathology laboratory service in South Africa has rolled out InterSystems' TrakCare Laboratory information System across all of its 349 laboratories in all of South Africa's 9 provinces, laying the groundwork for other healthcare and state owned entities (SOEs) to implement a single, integrated eHealth platform to manage patient results. The NHLS is the largest public health pathology network in South Africa, providing routine laboratory testing and epidemiological disease monitoring services. The national network serves about 80% of the South African population who use the public health services and the implementation is an enormous step towards streamlining access to patient results for treating doctors and other clinical staff and ensuring continuity of care for patients. The roll out of TrakCare LIS began in KwaZulu-Natal (KZN) in 2009, with the final region being completed in the Western Cape in 2015. Migration of the National Institute for Communicable Diseases (NICD) and the National Institute for Occupational Health (NIOH) to the TrakCare system was completed in the second quarter of 2016.

A first for the country's health system is the ability to electronically exchange patient demographics for order entry and results data between the TrakCare Lab and 17 other systems, both internally and externally. These include hospital information systems in Western Cape, KZN and the Free State, Netcare, Right to Care and Contract Laboratory Service (CLS). This capability to exchange information between multiple systems is due to the fact that TrakCare utilises the inter systems ensemble integration engine, which enables integration and interoperability between systems. The CEO at the NHLS, Ms Joyce Mogale said that the NHLS is pleased with the successful deployment of TrakCare and moving closer to realising their strategic objective to optimise their service through the use of information systems. They are currently undertaking an enhancement process to improve the end user experience and once this is complete, they believe they will have demonstrated the power of IT systems to improve the delivery of health services through safe data exchange.

**For more info:** <http://ehealthnews.co.za/pathology-service-digital/>

**MSQ health partners with CSIR to make innovative health devices accessible**

**7 November 2016**

MSQ Health and the Council for Scientific and Industrial Research (CSIR) have partnered on a collaborative project that will help accelerate the integration of medical devices and facilitate improved maintenance and the increased lifecycle of these devices. The latest medical technologies enable doctors to deliver earlier diagnosis and obtain better treatment outcomes. However, the increased complexity and cost of medical devices means that maintenance and servicing of medical equipment places a large burden on the health

system. MSQ Health and the CSIR have signed a Memorandum of Understanding to develop and pilot technology that allows medical devices to be monitored and analysed through a cloud-based system. This will ensure that preventative maintenance, diagnosis of mechanical problems, monitoring of quality controls and calibrations of essential equipment can be done remotely. The goal of the project is to achieve a significant reduction in downtime of essential hospital equipment and extend the operational lifetime of medical devices. MSQ Health and the CSIR were keen to form partnership in the implementation of a cloud-based system as they quickly saw the benefits this could offer to the public health system.

**For more info:** [http://ntww1.csir.co.za/plsql/ptl0002/PTL0002\\_PGE157\\_MEDIA\\_REL?MEDIA\\_RELEASE\\_NO=7527481](http://ntww1.csir.co.za/plsql/ptl0002/PTL0002_PGE157_MEDIA_REL?MEDIA_RELEASE_NO=7527481)

## **South Africa turns to remote sensing and mHealth to prevent malaria**

**10 November 2016**

Researchers at the University of Pretoria's Institute for Sustainable Malaria Control (UP ISMC) have turned to satellite data to predict malaria outbreaks and mobile apps to control and monitor the disease. The university is using satellites to predict malaria outbreaks using geographic information systems and advanced satellite imaging to identify the environmental factors that allow malaria-spreading mosquitos to breed and thrive. Mr Abiodun Morakinyo Adeola, University of Pretoria ISMC doctorate student said that, using remote sensing as part of an early-warning system for outbreaks, they can forecast malaria occurrences from 3 to 6 months in the future. He explained that their predictions using this model have been correct 9 out of 10 times in all 5 Mpumalanga communities, which formed part of the study. He also highlighted that, this level of accuracy is on par with the World Health Organisation's (WHO) standards. UP ISMC started with the Remote Sensing for Malaria Control in Africa programme that makes use of remote sensing earth observation satellites to collect data on variables that impact malaria. The initiative started in 2015 in collaboration with the French National Centre for Space Studies, the South African National Space Agency, South African Weather Service and other stakeholders. Since then, the researchers have been writing protocols and applying for funding towards a major cross-border study where satellites will be used to collect the relevant remotely sensed data.

Director of the UP ISMC, Professor Tiaan de Jager said that malaria-related or linked variable data are acquired by remote sensing earth observation satellites that are specifically programmed and equipped with optical instruments like infrared. He then elaborated that, the collected data is entered into various spacial, mathematical and statistical models to identify or determine specific patterns in the data that can be used in developing surveillance systems, risk maps and early warning systems. The data collected remotely could also be used along with field-observed data. Work has been done in the northern part of the Vhembe district, Limpopo province and directly across the border in Matabeleland South province, Zimbabwe, as part of the UP ISMC cross-border project. It plans to collect similar data in Maputo, Mozambique, specifically the Namaacha area near the Swaziland, Mozambique and South African borders. According to Prof de Jager, the research stemming from the programme will result in important outbreak detection and early-warning systems that will help in the fight against malaria.

**For more info:** <http://ehealthnews.co.za/remote-sensing-mhealth-malaria/>

## **South Africa's Coloured population worst affected by diabetes**

**14 November 2016**

The prevalence rate of type 2 diabetes varies between the different racial groups in South Africa. Traditionally it was thought that the Indian population had the highest rate of diabetes, but a study suggests that it is even more common among the Coloured population. The research focused on the Bellville South community in the northern suburbs of Cape Town and showed that 1 in 4 adults in the Western Cape's Coloured population may be affected by type 2 diabetes. The lead researcher of the study, Professor Rajiv Erasmus from the faculty of medicine and health sciences (FMHS) at Stellenbosch University said that, this

population has a very high prevalence of diabetes. Over the age of 40, nearly one in every 4 individuals (28,2%) either have diabetes or are at high risk of developing it. The research was a collaborative effort between the FMHS, the Cape Peninsula University of Technology, Walter Sisulu University, and the South African Medical Research Council (SAMRC).

Professor Rajiv Erasmus emphasised that, although the coloured population appear to be worst affected, there has been a rising trend in the prevalence of type 2 diabetes across all South African population groups. For instance, it is estimated that diabetes now affects 1 in every 10 Black South Africans, where in the past 1 in every 20 individuals from this group had diabetes. Another alarming finding in the study was that, more than half of the respondents with diabetes were unaware they had the disease. Professor Erasmus warned that, this is particularly worrying because of the long-term complications of diabetes in which the eyes, heart, skin, blood vessels and kidneys are affected. The presence of diabetes will no doubt exacerbate the already high prevalence of hypertension and chronic kidney disease in our population, hamper economic activity, and stretch the limited health facilities.

**For more info:** <http://www.bizcommunity.com/Article/196/154/153695.html>

## AFRICAN NEWS

### **Malaria and HIV leading causes of death in Nigeria**

**25 October 2016**

A new Global Burden of Diseases, Injuries and Risk Factors study (GBD) revealed that malaria and HIV were leading causes of death in Nigeria. In 2015, 192 284 Nigerians were reported to have died of malaria which was regarded as the leading killer of both young and old. The second and third top causes of death were diarrheal diseases and HIV/AIDS, killing 143 689 and 131 873 respectively. However, the conditions that kill are not typically those that make people sick in Nigeria. In 2015 the top 3 non fatal causes of health loss were iron-deficiency anemia, low back pain and major depression.

According to the new scientific analysis of more than 300 diseases and injuries in 195 countries, Nigerians are living longer lives than they were 25 years ago, but such progress is threatened by increasing numbers of people suffering from serious health challenges related to childhood wasting, unsafe water sources and unsafe sex. Dr Bolajoko Olusanya, Executive Director at the Centre for Healthy Start Initiative and a GBD collaborator said, despite the limitations of the data sources that formed the basis of these estimates in Nigeria, as with many developing countries, the analytical techniques and the key findings are sufficiently robust. This should inspire optimism if appropriate and timely interventions are put in place by the government and its developmental partners to accelerate health progress and the well-being of Nigerians.

**For more info:** <http://allafrica.com/stories/201610250789.html>

### **Drug-resistant tuberculosis (TB) higher than thought in West Africa**

**4 November 2016**

The research carried out by West-African Network of Excellence for TB, AIDS and Malaria (WANETAM) found that the number of multidrug-resistant tuberculosis cases in West Africa is greater than thought. Officially, the World Health Organization estimates the incidence of new cases of so-called MDR-TB in the African region is 2% and 17% among people who were treated for TB more than once. However, investigators on the ground in 8 West African countries came up with higher numbers. They reported that 6% of new cases and 35% of retreatment cases were drug-resistant to more than one medication. An analysis of almost 974 sputum samples from TB patients carried out by the WANETAM found that 39% were resistant to at least 1 first-line antibiotic used to treat tuberculosis. Additionally, bacterial isolates in 22% of the samples

did not respond to 2 or more anti-TB drugs. WANETAM'S Professor Martin Antonio, Principal Investigator at the Medical Research Council Unit The Gambia (MRCG) said, the statistics are particularly worrying for the region's 245 million inhabitants who live in one of the poorest corners in the world. He argued that the higher the rates in the community, the more likely it is to be spread and that really need to be caught.

Researchers also detected the presence of pre-extensively drug-resistant TB in sputum samples at all study sites in Burkina Faso, Gambia, Ghana, Guinea-Bissau, Mali, Nigeria, Senegal and Togo. These are on the verge of developing into extensively drug-resistant bacteria, which respond to neither first or second-line drugs. The highest proportion of pre-extensive drug resistance was seen in Ghana, in 35% of MDR samples. Multidrug-resistant bacteria were most prevalent among patients who had been treated for TB before in Bamako, Mali and Lagos in Nigeria. They were 4 times more likely to be resistant compared to new cases.

**For more info:** <http://www.voanews.com/a/drug-resistant-tuberculosis-higher-than-thought-west-africa/3579654.html>

## PROMISING, CONTROVERSIAL, INNOVATIVE RESEARCH AND DISCOVERIES

### Screening infants could prevent early heart attacks

**28 October 2016**

Researchers in Britain informed that screening young children for high cholesterol at the same time as they receive routine vaccinations could prevent hundreds of heart attacks in young adults each year. The study in the New England Journal of Medicine aimed to uncover a silent killer in young adults known as familial hypercholesterolemia (FH), a genetic disorder that often leads to early heart disease. FH runs in families and if left untreated can raise the risk of heart disease at a young age as much as 100 times. In the largest screening study to date, more than 10 000 children around 1 year old were tested for high cholesterol and genetic mutations known to be associated with FH at 92 facilities across England. Forty children tested positive for FH at a rate of about one in 270 children. It was reported that, their parents were then contacted for screening, revealing an additional FH-positive parent. Overall, one person at high risk of early heart attack was identified for every 125 people tested.

According to the researchers from Queen Mary University of London's Wolfson Institute of Preventive Medicine, such screening throughout Britain could prevent about 600 heart attacks in people under the age of 40. The lead researcher, Dr David Wald said, this is the first demonstration that child-parent screening works on a large scale. It is the only screening method that stands a reasonable chance of covering the whole population and identifying those at highest risk of an early heart attack. Once high-risk children are identified, they can take steps to lower cholesterol, including exercise, avoiding smoking, maintaining a healthy diet and when older taking statin medication.

**For more info:** [http://www.newvision.co.ug/new\\_vision/news/1438824/screening-infants-prevent-heart-attacks-study](http://www.newvision.co.ug/new_vision/news/1438824/screening-infants-prevent-heart-attacks-study)

### Study finds that nearly one in four are infected with latent tuberculosis (TB)

**08 November 2016**

The recent Global Tuberculosis (TB) Report 2016 released by the World Health Organization (WHO) acknowledged that the worldwide TB epidemic is even larger than previous estimates suggested. In a recent study that highlights the scope of TB, researchers from the United Kingdom found that nearly one-quarter of the world's population is infected with latent TB. According to WHO, TB infections impacted 10.4 million people in 2015, killing 1.8 million of those infected. Approximately 170 000 of those who died were children. India, Indonesia, China, Nigeria, Pakistan and South Africa carry the greatest burden of TB and make up 60% of all cases globally. As deadly as TB infections caused by *Mycobacterium tuberculosis* (*Mtb*) can be, the majority of individuals who become infected never go on to have symptoms and instead experience what

is known as latent TB (LTBI). Individuals with latent TB are likely not to be aware of the fact that they carry the bacteria, as they do not suffer from a bad cough, chest pain, fatigue, weight loss or other symptoms that mark TB disease and they cannot transmit TB to others. Latent infections can be diagnosed through a skin or blood test and despite the lack of symptoms, people with latent TB still need to undergo an antibiotic treatment regimen that can last between 3 and 9 months in order to prevent the onset of active disease.

Of those with latent TB, 5% to 10% will go on to develop TB disease at some point in their lives, most often within the first two years of *Mtb* infection. Researchers from the London School of Hygiene and Tropical Medicine and the University of Sheffield in the United Kingdom recently studied worldwide rates of LTBI and their findings were published in the open-access journal, *PLOS Medicine*. They conducted their study in support of WHO's End TB Strategy, the agency's global plan to cut TB-related deaths by 95% and TB cases by 90%, all by the year 2035. Using a combination of country trends and historical demographic data, the researchers estimated infection risk for 168 countries. They assessed the size and worldwide distribution of LTBI, studying scenarios that seek to answer questions such as: what number of active TB cases would arise from the current pool of people with latent infections if all TB transmission stopped immediately? With data on skin test surveys and WHO estimates on TB prevalence, the study found that 1.7 billion people worldwide had LTBI in 2014, making up 23% of the global population. With the rate of latent infections that progress to active disease, currently 1% of the world population or 56 million individuals were infected in the last two years and are at high risk of developing TB disease and 11% of those cases are believed to be with an isoniazid-resistant strain.

**For more info:** <http://www.contagionlive.com/news/study-finds-that-nearly-one-in-four-are-infected-with-latent-tuberculosis>

## **Universal serial bus (USB) stick device measures HIV levels**

**10 November 2016**

Researchers at Imperial College London and a company called DNA Electronics developed an HIV test that employs a common USB stick device. The device makes a diagnosis using a drop of blood. According to an article about the device published in the journal *Scientific Reports*, it can give accurate test results in under 30 minutes. That compares favorably with current tests which can take up to 3 days to yield a result. It uses a mobile phone chip and requires only a small amount of blood, which is placed on a specific spot on the device. The researchers said the device is 95% accurate. The news release about the device explained that, if any HIV virus is present in the sample, this triggers a change in acidity which the chip transforms into an electrical signal. This is sent to the USB stick, which produces the result in a program on a computer or electronic device.

The device has another advantage in that it would allow patients to monitor their own treatment even in remote areas. Dr Graham Cooke, senior author of the research from the Department of Medicine at Imperial said HIV treatment has dramatically improved over the past 20 years to the point that many diagnosed with the infection now have a normal life expectancy. However, monitoring viral load is crucial to the success of HIV treatment. At the moment, testing often requires costly and complex equipment that can take a couple of days to produce a result. He further said that, the job done by this equipment have been taken, which is the size of a large photocopier and shrunk it down to a USB chip. Ideally, Dr Graham informed that the device could make monitoring HIV levels like monitoring blood sugar levels in people with diabetes and would be very useful in areas of sub-Saharan Africa where medical facilities or personnel are not readily available. The researchers also indicated that, for babies born in remote areas, the device offers a chance to diagnose a newborn quickly. This is crucial to a baby's long-term health. They were also looking to create similar devices that could detect other viruses like hepatitis.

**For more info:** <http://www.voanews.com/a/mht-usb-stick-device-measures-hiv-levels/3590949.html>

## **Researchers develop warning system model for infectious disease outbreaks**

**11 November 2016**

A group of researchers have recently developed a model that could help in creating an early warning system for infectious diseases. According to the World Health Organization (WHO), while non communicable diseases such as cancer and cardiovascular disease together cause the vast majority of deaths around the world, infectious diseases caused by bacterial, viral, parasitical and fungal pathogens as a whole, pose a major public health threat. Some of the biggest infectious threats around the world include tuberculosis, measles, malaria and HIV/AIDS. Most recently and notably, the Zika outbreak in South America and Central America has gained the attention of infectious disease specialists. Public health agencies such as the Centers for Disease Control and Prevention (CDC) aim to track emerging diseases through surveillance efforts at national, state, local, and territorial levels to help them respond to and prevent outbreaks that put the population at increased risk. However, even with the best data and monitoring, knowing that there will be an outbreak before it happens and understanding the timing of an epidemic are difficult factors for health experts to predict.

In a new study, researchers at the University of Georgia aimed to understand what impacts the waiting time between, when the possibility of an infectious disease outbreak emerges and when an epidemic actually takes place. The research was conducted as part of a National Institutes of Health-funded study called Project AERO, focused on anticipating emerging and re-emerging outbreaks. The authors noted that infectious diseases begin as self-limiting, stuttering chains of infection which tend to die off and can develop into the more sustained chains of human-to-human transmission that lead to larger outbreaks. The transition from the former to the latter becomes possible when an outbreak reaches its tipping point, which in regards to infectious diseases occurs when every person infected with a disease is in a susceptible population and has transmitted the infection to more than one other person. In any given population, there are individuals who are susceptible to a disease, those who are presently infected and those who have recovered from infection. The researchers created a model to determine the parameters impacting what they call bifurcation delay, the waiting time between the tipping point and the start of an actual outbreak. They noted that outbreaks do not begin as soon as they are possible, creating a model to understand and forecast that delay could help create an early warning system for coming outbreaks.

**For more info:** <http://www.contagionlive.com/news/researchers-develop-warning-system-model-for-infectious-disease-outbreaks#sthash.aaHROUlm.dpuf>

## **Huge study finds a billion people suffer from high blood pressure**

**12 November 2016**

Scientists reported that, the number of people with high blood pressure has almost doubled in 40 years to over 1.1 billion worldwide, with the burden of the condition shifting from the rich to the poor. In the largest study of its kind analysing blood pressure in every nation between 1975 and 2015, the scientists reported that it has dropped sharply in wealthy countries possibly due to healthier diets and lifestyles, but risen in poorer countries. The researchers said, the increases are especially significant in Africa and South Asia and could be partly due to poor nutrition in childhood. High blood pressure, also known as hypertension puts extra strain on the blood vessels and major organs such as the heart, brain and kidneys. It is the world's top cause of cardiovascular disease which leads to strokes and heart attacks. It is estimated to cause 7.5 million deaths a year worldwide. The study led by World Health Organisation researchers, working with hundreds of scientists internationally covered blood pressure measurements from nearly 20 million people.

A new study has estimated that, more than half the world's adults with high blood pressure in 2015 lived in Asia. In Europe, Britain had the lowest proportion of people with high blood pressure in 2015. South Korea, the United States and Canada had the lowest hypertension rates in the world. The study estimated that more than half the world's adults with high blood pressure in 2015 lived in Asia. Some 226 million people in China have high blood pressure as do 200 million in India. Professor Majid Ezzati of Imperial College London's school of public health said high blood pressure is no longer related to affluence as it was in 1975. It is now a

major health issue linked with poverty. While he could not be sure of why the data showed high blood pressure as more of a problem in poorer countries, it may be partly due to overall better health and more consumption of fruit and vegetables in wealthy societies. He further said, in rich countries the condition is also caught more frequently and earlier and managed more effectively with medicines.

**For more info:** <http://www.scmp.com/news/world/article/2046462/huge-study-finds-billion-people-suffer-high-blood-pressure>

## **E-cigarettes just as harmful as tobacco for oral health**

**17 November 2016**

Electronic cigarettes are often marketed as a safer alternative to conventional cigarettes. When it comes to oral health, new research suggests that vaping may be just as harmful as smoking. In a study published in the journal *Oncotarget*, researchers found that the chemicals present in electronic cigarette (e-cigarette) vapor were equally as damaging in some cases, more damaging to mouth cells as tobacco smoke. Such damage can lead to an array of oral health problems, including gum disease, tooth loss and mouth cancer. E-cigarettes are battery-operated devices containing a heating device and a cartridge that holds a liquid solution. The heating device vaporizes the liquid, usually when the user "puffs" on the device and the resulting vapor is inhaled. While e-cigarette liquids do not contain tobacco, a highly harmful component of conventional cigarettes they do contain nicotine and other chemicals, including flavoring agents.

According to the Centers for Disease Control and Prevention (CDC), the use of e-cigarettes has increased in recent years particularly among young people. In 2015, 16% of high-school students reported using the devices, compared with just 1.5% in 2011. E-cigarettes are considered by many to be safer than conventional smoking, but because the devices are relatively new to the market, little is known about the long-term effects of vaping on health. In particular, study leader Irfan Rahman, professor of environmental medicine at the University of Rochester School of Medicine and Dentistry in New York and colleagues noted that there has been limited data on how e-cigarette vapor affects oral health. To address this gap in research, the team exposed the gum tissue of non-smokers to either tobacco or menthol-flavored e-cigarette vapor. The tobacco-flavored vapor contained 16 milligrams of nicotine while the menthol flavor contained 13-16 milligrams of nicotine or no nicotine. The researchers found that all e-cigarette vapor caused damage to gum tissue cells comparable to that caused by exposure to tobacco smoke.

**For more info:** <http://www.medicalnewstoday.com/articles/314190.php>

## **RECENT PUBLICATIONS**

### **Availability and quality of routine morbidity data: Review of studies in South Africa**

#### **ABSTRACT**

##### **Objectives**

Routine health information systems (RHISs) provide data that are vital for planning and monitoring individual health. Data from RHISs could also be used for purposes for which they were not originally intended, provided that the data are of sufficient quality. For example, morbidity data could be used to inform burden of disease estimations, which serve as important evidence to prioritize interventions and promote health. The objective of this study was to identify and assess published quantitative assessments of data quality related to patient morbidity in RHISs in use in South Africa.

## **Materials and Methods**

A review of literature published between 1994 and 2014 that assessed the quality of data in RHISs in South Africa was conducted. World Health Organization (WHO) data quality components were used as the assessment criteria.

## **Results**

Of 420 references identified, 11 studies met the inclusion criteria. The studies were limited to tuberculosis and HIV. No study reported more than 3 WHO data quality components or provided a quantitative assessment of quality that could be used for burden of disease estimation.

## **Discussion**

The included studies had limited geographical focus and evaluated different source data at different levels of the information system. All studies reported poor data quality.

## **Conclusion**

This review confirmed concerns about the quality of data in RHISs and highlighted the need for a comprehensive evaluation of the quality of patient-level morbidity data in RHISs in South Africa.

**For more info:** <http://jamia.oxfordjournals.org/content/early/2016/06/28/jamia.ocw075>

## **Mortality trends and differentials in South Africa from 1997 to 2012: Second National Burden of Disease Study**

### **SUMMARY**

#### **Background**

The poor health of South Africans is known to be associated with a quadruple disease burden. In the second National Burden of Disease (NBD) study, the researchers aimed to analyse cause of death data for 1997-2012 and develop national, population group and provincial estimates of the levels and causes of mortality.

#### **Method**

Underlying cause of death data from death notifications for 1997-2012 obtained from Statistics South Africa was used. The data was adjusted for completeness using indirect demographic techniques for adults and comparison with survey and census estimates for child mortality. A regression approach was used to estimate misclassified HIV/AIDS deaths and so-called garbage codes were proportionally redistributed by age, sex, and population group (black African, Indian or Asian descent, white [European descent] and coloured [of mixed ancestry according to the preceding categories]). Injury deaths were estimated from additional data sources. Age-standardised death rates were calculated with mid-year population estimates and the WHO age standard. Institute of Health Metrics and Evaluation Global Burden of Disease (IHME GBD) estimates for South Africa were obtained from the IHME GHDx website for comparison.

#### **Findings**

All-cause age-standardised death rates increased rapidly since 1997, peaked in 2006 and then declined, driven by changes in HIV/AIDS. Mortality from tuberculosis, non-communicable diseases, and injuries decreased slightly. In 2012, HIV/AIDS caused the most deaths (29.1%) followed by cerebrovascular disease (7.5%) and lower respiratory infections (4.9%). All cause age-standardised death rates were 1.7 times higher in the province with the highest death rate compared to the province with the lowest death rate, 2.2 times higher in black Africans compared to whites, and 1.4 times higher in males compared with females.

Comparison with the IHME GBD estimates for South Africa revealed substantial differences for estimated deaths from all causes, particularly HIV/AIDS and interpersonal violence.

## Interpretation

The study shows the reversal of HIV/AIDS, non-communicable disease and injury mortality trends in South Africa during the study period. Mortality differentials show the importance of social determinants, raise concerns about the quality of health services and provide relevant information to policy makers for addressing inequalities. Differences between GBD estimates for South Africa and this study emphasise the need for more careful calibration of global models with local data.

**For more info:** <http://www.sciencedirect.com/science/article/pii/S2214109X16301139>

## Ribociclib as First-Line Therapy for HR-Positive, Advanced Breast Cancer

DOI: 10.1056/NEJMoa1609709

### SUMMARY

#### Background

The inhibition of cyclin-dependent kinases 4 and 6 (CDK4/6) could potentially overcome or delay resistance to endocrine therapy in advanced breast cancer that is positive for hormone receptor (HR) and negative for human epidermal growth factor receptor 2 (HER2).

#### Methods

In this randomized, placebo-controlled, phase 3 trial the efficacy and safety of the selective CDK4/6 inhibitor ribociclib combined with letrozole for first-line treatment in 668 postmenopausal women with HR-positive, HER2-negative recurrent or metastatic breast cancer who had not received previous systemic therapy for advanced disease was evaluated. The patients were randomly assigned to receive either ribociclib (600 mg per day on a 3-weeks-on, 1-week-off schedule) plus letrozole (2.5 mg per day) or placebo plus letrozole. The primary end point was investigator-assessed progression-free survival. Secondary end points included overall survival, overall response rate, and safety. A preplanned interim analysis was performed on January 29, 2016, after 243 patients had disease progression or died. Prespecified criteria for superiority required a hazard ratio of 0.56 or less with  $P < 1.29 \times 10^{-5}$ .

#### Results

The duration of progression-free survival was significantly longer in the ribociclib group than in the placebo group (hazard ratio, 0.56; 95% CI, 0.43 to 0.72;  $P = 3.29 \times 10^{-6}$  for superiority). The median duration of follow-up was 15.3 months. After 18 months, the progression-free survival rate was 63.0% (95% confidence interval [CI], 54.6 to 70.3) in the ribociclib group and 42.2% (95% CI, 34.8 to 49.5) in the placebo group. In patients with measurable disease at baseline, the overall response rate was 52.7% and 37.1%, respectively ( $P < 0.001$ ). Common grade 3 or 4 adverse events that were reported in more than 10% of the patients in either group were neutropenia (59.3% in the ribociclib group vs. 0.9% in the placebo group) and leukopenia (21.0% vs. 0.6%); the rates of discontinuation because of adverse events were 7.5% and 2.1%, respectively.

#### Conclusions

Among patients receiving initial systemic treatment for HR-positive, HER2-negative advanced breast cancer, the duration of progression-free survival was significantly longer among those receiving ribociclib plus letrozole than among those receiving placebo plus letrozole, with a higher rate of myelo suppression in the ribociclib group.

**For more info:** <http://www.nejm.org/doi/full/10.1056/NEJMoa1609709>

## Vasectomy and risk of prostate cancer: population based matched cohort study

Citation: *BMJ* 2016;355:i5546

### ABSTRACT

#### Objective

To determine the association between vasectomy and prostate cancer, adjusting for measures of health seeking behaviour.

#### Design

Population based matched cohort study.

#### Setting

Multiple validated healthcare databases in Ontario, Canada, 1994-2012.

#### Participants

326 607 men aged 20 to 65 who had undergone vasectomy were identified through physician billing codes and matched 1:1 on age (within two years), year of cohort entry, comorbidity score, and geographical region to men who did not undergo a vasectomy.

#### Main outcomes measures

The primary outcome was incident prostate cancer. Secondary outcomes were prostate cancer related grade, stage, and mortality.

#### Results

3462 incident cases of prostate cancer were identified after a median follow-up of 10.9 years: 1843 (53.2%) in the vasectomy group and 1619 (46.8%) in the non-vasectomy group. In unadjusted analysis, vasectomy was associated with a slightly increased risk of incident prostate cancer (hazard ratio 1.13, 95% confidence interval 1.05 to 1.20). After adjustment for measures of health seeking behaviour, however, no association remained (adjusted hazard ratio 1.02, 95% confidence interval 0.95 to 1.09). Moreover, no association was found between vasectomy and high grade prostate cancer (adjusted odds ratio 1.05, 95% confidence interval 0.67 to 1.66), advanced stage prostate cancer (adjusted odds ratio 1.04, 0.81 to 1.34), or mortality (adjusted hazard ratio 1.06, 0.60 to 1.85).

#### Conclusion

The findings do not support an independent association between vasectomy and prostate cancer.

**For more info:** <http://www.bmj.com/content/355/bmj.i5546>

## UPCOMING EVENTS

### **REMINDER: Cape Town 5th International Conference on “Medical, Medicine and Health Sciences” (MMHS- 2016 Cape Town)**

#### **3rd - 4th December 2016**

Cape Town 5th International Conference on “Medical, Medicine and Health Sciences” (MMHS- 2016 Cape Town) will be held in Cape Town at Westin Cape Town, Convention Square on the 3rd and 4th December 2016 under the main theme “Advances in collaborative research for public health, medical and medicine sciences for better healthcare services to society”

It will cover vital issues in medical, medicine and health sciences under multiple sub-themes. The aim of the conference is to support, encourage and provide a platform for networking, sharing, publishing and nurturing the potential growth of individual scholars across the globe.

**For more info:** <http://academicfora.com/mmhs-december-03-04-2016-cape-town-south-africa/>

### **Building Children's Nursing for Africa Conference**

**28 - 30 March 2017**

The 3<sup>rd</sup> Building Children's Nursing for Africa Conference will be held in Cape Town, Observatory, from the 28 to 30 March 2017. The theme for the 2017 conference is '**Pillars of Practice**' in paediatric and children's nursing. There will be a showcasing of recent research, clinical practice projects, education and leadership initiatives.

**For more info:** <http://www.buildingchildrensnursing.co.za>

### **31st International Papillomavirus Conference (HPV 2017)**

**28th February - 4th March 2017**

South Africa will be hosting the 31st International Papillomavirus Conference, to be held in Cape Town, Western Cape at the Cape Town International Convention Centre (CTICC). The HPV 2017 will gather researchers, clinicians and other health professionals to share knowledge and ideas on papillomaviruses and their associated diseases. As with past IPV conferences, it will include a stimulating array of invited lectures, oral abstract sessions, poster sessions, symposia, workshops and social events.

**For more info:** <http://atnd.it/43524-0>

### **10th International Conference on Healthcare, Nursing and Disease Management (HNDM)**

**22nd to 23rd February 2017**

The 10th International Conference on Healthcare, Nursing and Disease Management will be held in Dubai, United Arab Emirates on the 22nd and 23rd February 2017. Various issues such as recent research trends in healthcare, nursing and disease management for development will be discussed.

**For more info:** <http://iaphlsr.org/10th-international-conference-on-healthcare-nursing-and-disease-management-hndm-22-23-feb-2017-dubai-about-20>