

BRICS

Health and WHO

Country Presence Profile

Background

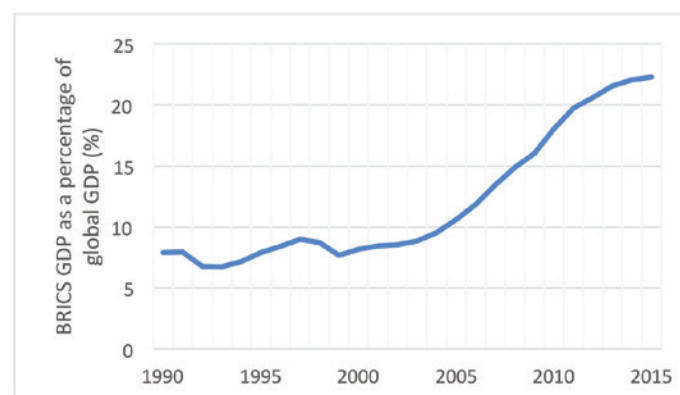
The concept of the BRICS countries was first coined in 2001 for four emerging economies – Brazil, the Russian Federation, India, and China, and expanded to include South Africa in 2010. These countries are not only influential in their own regions, but represent a significant proportion of the world's population and trade. BRICS summits have been held annually since 2009 which cover both mutual economic interests and global issues. The BRICS bloc has been recognised for their potential to influence global health, with the Director General of the WHO, Margaret Chan, commenting in 2011 that *"BRICS represents a block of countries with a ... great potential to move global public health in the right direction ... towards reducing the current vast gaps in health outcomes and introducing greater fairness in the way the benefits of medical and scientific progress are distributed ..."*¹. While a 2013 review found little evidence of their influence so far, the annual meeting of BRICS health ministers since 2011, and acknowledgement of their commitment to promoting health through the Goa Declaration of 2016 demonstrates the will of BRICS to collaborate to improve health².

Economics

The economic attributes of BRICS are largely what led to the establishment of the bloc. They are distinguished by their large, and in some cases rapidly growing economies. In 2015, BRICS had an average GDP per capita of US \$6596, up from US \$2086 in 1990². The greatest change occurred in China where GDP per capita increased from US \$318 to US \$8028 over this 25 year period. Since a peak in 2013, overall GDP per capita in BRICS has decreased nearly a quarter, though on an individual country level it has continued to increase in China and India. The downturn in GDP per capita was most noticeably seen in Russia which decreased by 42% between 2013 and 2015, while a 35% decrease was seen in Brazil between 2011 and 2015, where GDP capita is now lower than it was in 2008. The combined GDP of BRICS countries as a percentage of global GDP has almost tripled from 7.9% in 1990 to 22.3% in 2015, as seen in figure 1.

The total expenditure on health as a percentage of GDP is lower in each of the BRICS countries than the global

Figure 1: Combined BRICS GDP as a percentage of global GDP



average (9.94%), and ranges from 4.69% in India to 8.8% in South Africa, with an average of 6.88%³. Annual per capita health expenditure differs widely, from US \$75 in India to US\$947 in Brazil with an average of US \$581, just over half of the global figure. The structure of the Indian health care system – nearly two thirds of providers are private – has led to a high proportion of out-of-pocket expenditure (62.4% in 2014), the 10th highest globally,

¹ WHO Director-General addresses first meeting of BRICS health ministers. Beijing, China, July 11, 2011. http://www.who.int/dg/speeches/2011/BRICS_20110711/en/index.html

² Harmer, A., Xiao, Y., Missoni, E. and Tediosi, F., 2013. 'BRICS without straw'? A systematic literature review of newly emerging economies' influence in global health. *Globalization and health*, 9(1), p.15.

³ WHO Global Health Observatory Data Repository 2014

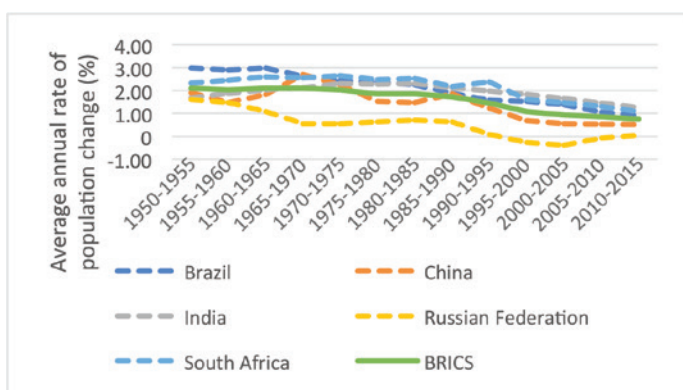
which can drive households into poverty in order to access health care.

Three BRIC countries are classified as having high human development as according to the human development index (Brazil, China, and the Russian Federation), and two have medium development (India and South Africa)⁴. The highest ranked country is the Russian Federation at 50th, with India being the lowest ranked BRICS country at 130th out of 188. Literacy in BRICS is above 90%, and the global average, for males and females for all countries except India, where the figures are 81% and 63% respectively⁵. India is also the country with the greatest discrepancy between male and female literacy, over four times greater than the next highest (China – 3.7% in favour of males). Along with France, South Africa is currently co-chairing the UN High Level Commission on Health, Employment and Economic Growth. The Commission has been tasked with proposing actions to stimulate the creation of health and social sector jobs as a means to advance inclusive economic growth, paying specific attention to the needs of low and lower middle income countries.

Population

The BRICS countries represent almost half of the world's population, which is particularly concentrated in China and India, both containing more than a billion inhabitants. Population growth has been declining in BRICS for several decades as seen in figure 2, from 2.12 between 1965-1970 to 0.76 during the period of 2010-2015⁶. The greatest decrease since in 1950 is seen in Brazil (minus 2.1 between 1950-1955 and 2010-2015), though the Russian Federation has notably experienced periods of negative population growth since 1995. China's growth rate has

Figure 2: Five year average annual population growth rates of BRICS countries between 1950 and 2015⁶



⁴ Human development index 2015

⁵ UNESCO data 2015. UIS estimate.

⁶ UNPD 2015

⁷ World Bank 2015

⁸ WHO Global Health Observatory Data Repository 2015

declined immensely since peaking between 1965-1970, influenced by the introduction of the One Child policy in 1979. High levels of immigration into Russia and South Africa due to insecurity in neighbouring countries has led to challenges in unemployment, ethnic conflicts, and competition for essential services such as health, water, electricity, and waste disposal.

The proportion of the population aged under 15 seen across BRICS ranges from 16.8% (Russian Federation) to 29.2% (South Africa), with an average of 23%, between the means of lower middle income countries (20.8%) and upper middle income countries (31%). At 8.3%, the proportion of those aged over 65 years in BRICS is the same as the global average. Again, this varies most widely between the Russian Federation (13.4%) and South Africa (5%), BRICS countries have all seen an overall increase in their older population since 1960, though this has fluctuated particularly in South Africa where a decline in this proportion of the population was seen between 1963 and 1985⁷. Trends of ageing populations and urbanisation are set to cause major challenges in China, with the proportion of senior citizens projected to rise to 35%, or 487 million people by 2053, when 70% of people will be living in urban areas, an increase from 54% in 2014. Although BRICS represent almost half of the world's population, population growth is declining. Trends of ageing populations can be seen in several BRICS.

Health

Life expectancy

Average life expectancy in BRICS stands a fraction below the global mean, as shown in figure 3, though varies from 62.9 in South Africa to 76.1 in China⁸. Steady increases in life expectancy since 1960 in Brazil and India contrast to an accelerated increase in China between the 1960s and 1980s. This has been mainly due to 1) well-targeted public health campaigns that reduced infant and child mortality and communicable disease; and 2) improved economic conditions impacting nutrition, education and distribution of health services. Life expectancy gains from the 1960s onwards in South Africa were largely lost during the 1990s but it has increased annually since 2005, however, fluctuation and stagnation has meant the Russian Federation has gained less than five years in life expectancy since 1960. Healthy life expectancy

Figure 3: Life expectancy and healthy life expectancy across BRICS⁸

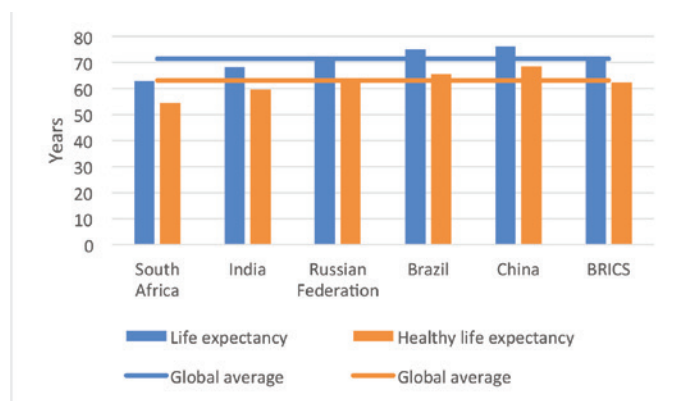
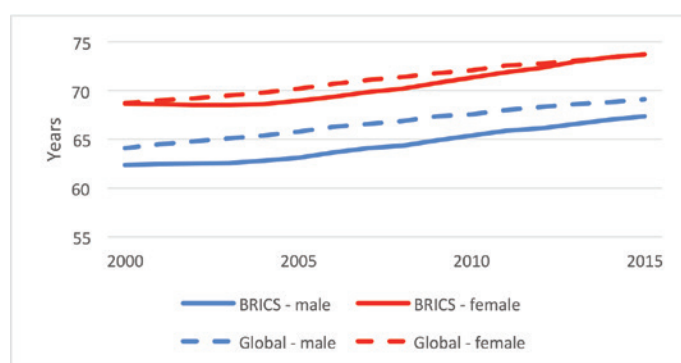


Figure 4: Male and female life expectancy in BRICS and globally from 2000-2015⁸



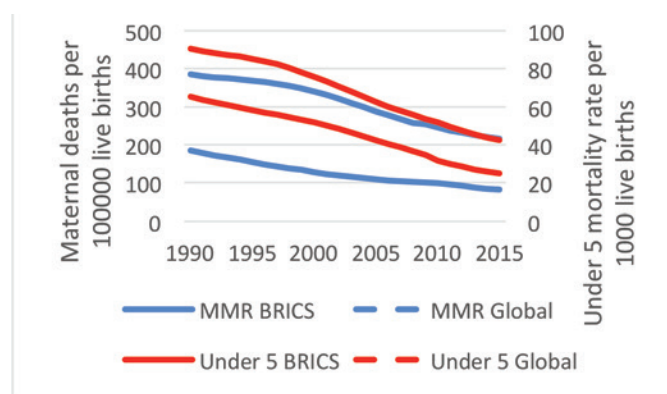
(the number of years expected to be lived in full health) as a proportion of life expectancy is 88.3% in BRICS, in line with the global standard of 88.4%. Female life expectancy in BRICS has increased to become equal with the global level in 2014, as in figure 4. Average male life expectancy in BRICS has remained at least a year below than seen globally since 2000, with largest gap seen in South African which has remained around 10 years below global male life expectancy.

Under five and maternal mortality

Under 5 mortality rates (per 1000 live births) have decreased in each BRICS country, with the largest drop seen in China and Brazil (an 80% and 73% decrease respectively). The average under 5 mortality rate has remained lower than the global level, as seen in figure 5. As of 2015, India has the highest under 5 mortality rate (47.7), almost five times higher than that seen in the Russian Federation (9.6). The overall maternal mortality rate (MMR) (per 100 000 live births) has decreased among the BRICS bloc, with China and India representing the greatest reduction at 72.2% and 68.7%

respectively². India, again, has the highest MMR (174), at almost 7 times highest than the lowest rate of 25 seen in the Russian Federation. While the MMR in South Africa fell from 108 to 60 in 1996, it peaked again at 154 in 2010 during the height of the country's HIV epidemic. Since 2011 it has fallen steadily and stood at 138 in

Figure 5: Under 5 and maternal mortality rates in BRICS and globally from 1990-2015⁷

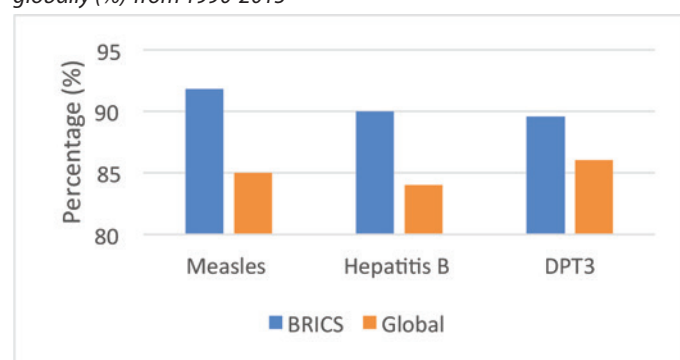


2015. Maternal and under 5 mortality across BRICS is in decline, and maternal mortality rates are less than half of global average.

Health service coverage

The average coverage of measles, hepatitis B, and diphtheria tetanus toxoid and pertussis (DPT3) vaccinations among 1-year olds in BRICS surpasses the global average, as seen in figure 6⁸. Vaccination coverage is above 95% for each in Brazil, China, and Russia, though varies between 69% and 76% in South Africa.

Figure 6: Level of vaccination coverage among 1-year olds in BRICS and globally (%)³ from 1990-2015

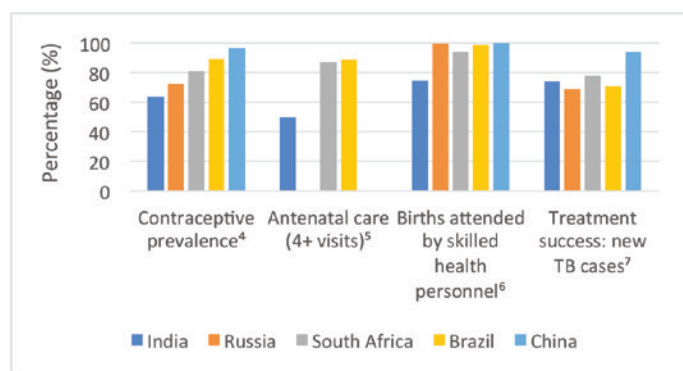


The contraceptive prevalence across BRICS differs from 63.9% in India to 96.6% in China, shown in figure 7⁹.

⁹ WHO Global Health Observatory Data Repository most recent year available between 2001-2011 (Married or in-union women of reproductive age who have their need for family planning satisfied with modern methods)

The percentage of women receiving at least four antenatal care visits¹⁰ was above 85% in Brazil and South Africa, and 49.7% in India, the latter of which also has the lowest proportion of births attended by skilled health personnel¹¹ at 74.4%. The four other BRICS countries have levels of other 90% for birth attendance by skilled health personnel.

Figure 7: Coverage of health system indicators across BRICS (%)



China is the only BRIC country where the rate of treatment success for new TB cases (94%) exceeds the global average (83%)¹². The four others range between 69% and 78%, with the lowest level present in the Russian Federation.

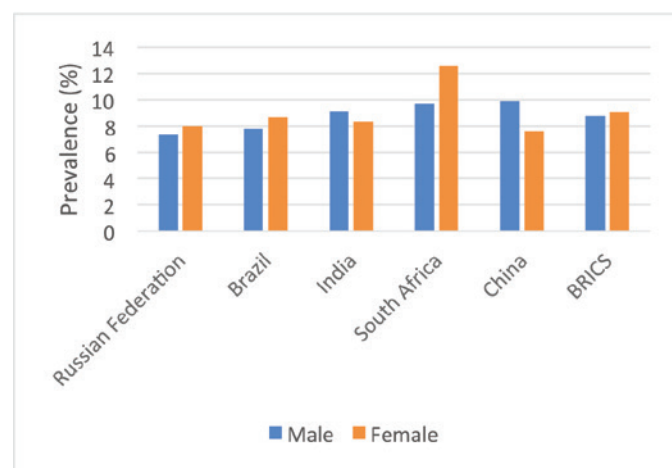
High levels of health care expenditure in South Africa are seen for voluntary private health insurance (41.8%), over ten times the level seen in China (3.5%) though only 17% of the population is served through these schemes¹³. While price levels for hospitals vary across OECD nations according to the country's wealth, South Africa is the outlier in that in a sub-set of OECD countries, it had the lowest GDP per capital but hospital prices on par with high income nations such as the United Kingdom, France, and Germany.

Risk factors for non-communicable disease

As countries develop economically, the burden of disease shifts from being predominantly infectious disease based to long-term non-communicable disease (NCD). The presence of behaviours or conditions such as raised blood glucose, raised blood pressure, obesity, and tobacco consumption act as risk factors for NCD such as cardiovascular disease, cancers, and diabetes mellitus.

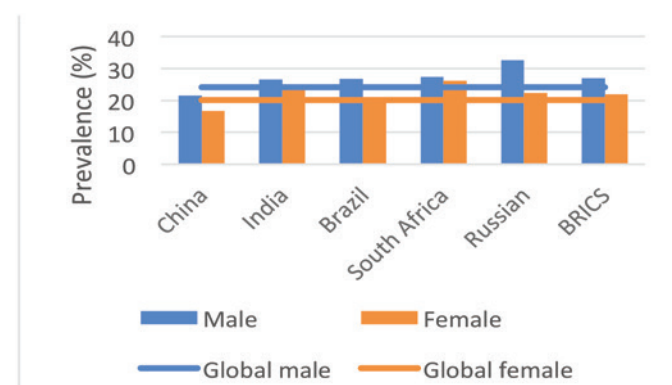
The prevalence of raised fasting blood glucose in BRICS is similar to the overall global average of 8.5%, as seen in figure 8¹⁴. BRICS countries each have a prevalence of raised fasting blood glucose under 10% for both males and females, with the exception of South Africa where 12.6% of females have raised fasting blood glucose, which can act as a precursor to diabetes mellitus.

Figure 8: Prevalence of raised fasting blood glucose in BRICS¹⁴



The average prevalence of raised blood pressure in BRICS is higher than global averages for both males and females, shown in figure 9¹⁵. Exceptions to this are China which has lower blood pressure for both genders and South Africa where slightly fewer females have raised blood pressure. Similar to global patterns, a greater proportion of males have raised blood pressure compared to females. There is an over 10% difference between China and the Russian Federation in the prevalence of raised blood pressure in males, with

Figure 9: Prevalence of raised blood pressure in BRICS¹⁵



¹⁰ WHO Global Health Observatory Data Repository most recent year available between 2007-2012

¹¹ WHO Global Health Observatory Data Repository most recent year available between 2008-2014

¹² WHO Global Health Observatory Data Repository 2014

¹³ OECD 2013

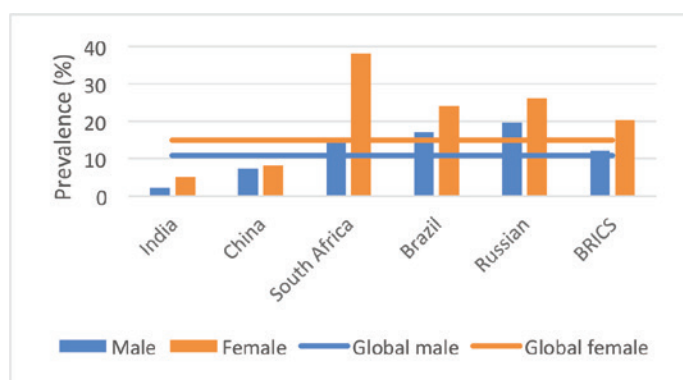
¹⁴ WHO Global Health Observatory Data Repository 2014 (≥ 7.0 mmol/L or on medication, age-standardized estimate)

¹⁵ WHO Global Health Observatory Data Repository 2015 (SBP ≥ 140 OR DBP ≥ 90 , age-standardized estimate)

the latter in the 20 countries worldwide. The Russian Federation also has the greatest discrepancy between males and females, with a 10.3% difference.

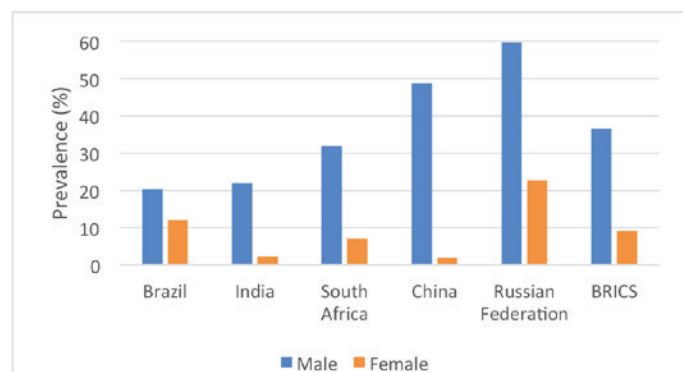
Levels of obesity among BRICS differs greatly between countries, particularly among females, as evident in figure 10¹⁶. The prevalence of obesity in females in South Africa is over double that of the global level, and is seven times greater than that in India. Male obesity also differs over a wide range between BRICS countries, demonstrating that the health status of these countries is far from uniform. South Africa is planning to implement a 20% tax on sugar drinks in 2017 to tackle obesity and diabetes, the first of the BRICS countries to take this measure.

Figure 10: Prevalence of obesity in BRICS countries¹⁶



The consumption of tobacco through smoking follows a similar gender pattern to that seen globally – with rates being far higher in males than females, as seen in figure 11¹⁷. At 59.8%, the proportion of males smoking in the Russian Federation is the fourth highest globally, substantially raising the risk of several NCD, such as lung cancer and chronic obstructive pulmonary disease.

Figure 11: Prevalence of tobacco consumption across BRICS countries¹⁷

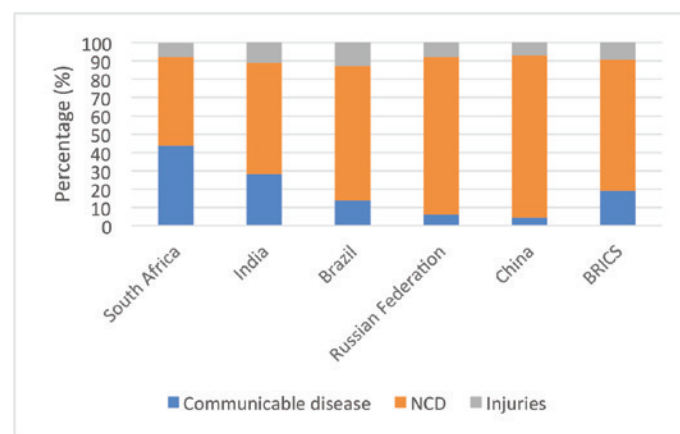


Almost four times as many men consume tobacco in BRICS overall compared to females, though this ranges from 1.7 times in Brazil to 25.6 in China.

Causes of death and the burden of disease

Overall among BRICS, the majority (71%) of deaths are caused by NCD as seen in figure 12, between the level seen for lower middle income countries (59%), and upper middle income countries (82%). In South Africa and India, the two BRICS which are eligible for Global Fund support, over a quarter of deaths are caused by communicable disease, indicating these countries are not as advanced in the epidemiological transition. HIV/AIDS accounts for a quarter of deaths in South Africa as opposed to less than two percent in all of the other BRICS, while the two largest causes of death by communicable disease in India are TB and diarrhoeal diseases. Injuries account for over half of deaths for those aged between 15 and 29 in China and Russia.

Figure 12: Proportion of deaths in BRICS by cause⁷



The top 3 causes of the burden of disease in BRICS countries are due to NCD, as shown in table 1⁷, reflecting the epidemiological transition these countries are undergoing as they develop economically. However, the distribution of the burden is diverse among BRICS, with communicable disease far more prevalent in South Africa and India than the Russian Federation and China. Twenty nine percent of DALYs in South Africa are due to HIV/AIDS, in stark contrast to the rest of BRICS for which the figure is under 3%. The burden of disease caused by maternal, neonatal or nutritional conditions in India (16%) is over double that of the next highest country, Brazil (6.8%), and over five times greater than in Russia (3.1%). Cardiovascular disease is the top cause of DALYs

¹⁶ WHO Global Health Observatory Data Repository 2014 (BMI ≥ 30 , age-standardized estimate)

¹⁷ WHO Global Health Observatory Data Repository 2013 (current smoking of any tobacco product age standardized rate)

overall, though between countries it ranges from 8.5% of DALYs in South Africa to 37% in Russia. The burden of malignant neoplasms also varied from 5.2% of DALYs in India to 16.6% in China.

Table 1: Total DALYs caused by health issues in BRICS countries in 2015⁷

Health issue(s)	Number of DALYs caused in 2015
Cardiovascular diseases	197 499
Other NCDs ¹⁸	139 931
Malignant neoplasms	105 143
Maternal, neonatal or nutritional conditions	103 382
Unintentional injuries	86 612
Respiratory diseases	57 008
HIV, TB and malaria	40 564
Lower respiratory infections	37 547
Mental and substance use disorders	31 613
Neurological conditions	31 613

The burden of disease differs among BRICS, with South Africa and India having a greater prevalence of communicable, maternal, neonatal and nutritional conditions, while the burden of NCDs is increasing, exacerbated by trends of ageing populations in the other countries

WHO Country Presence in BRICS

The WHO has country offices in each of the five BRICS countries. Across these there is a total of 192 staff and 1007 non staff personnel, 83% of which were based in India, where most are part of surge capacity for the polio programme. Overall, country offices are composed of 16% staff and 84% non staff personnel, though with the exclusion of India this becomes 57% to 43%. BRICS country offices contain 5% of the global WHO staff personnel workforce.

Of staff personnel, 60% are professionals and 40% are general service staff, as shown in figure 13. Just over

two thirds of professional staff are National Professional Officers, while the rest are international officers. The Russian Federation has the highest proportion of nationals working at professional level, at 83%, while South Africa has the least (50%). Globally, BRICS contain 6% of the overall professional workforce of total WHO workforce at country level.

Figure 13: Staffing breakdown in WHO country offices



The planned costs and distribution for WHO country offices in BRICS is shown in table 2. The combined distributed funds for BRICS constitute 5% of distributed funds globally. India can be seen to have a planned costs figure four times greater than the next highest country office. Distribution as a percentage of planned costs varied from 69.3% (China) to 93.5% (South Africa). Of the funds available, 71.1% were specified voluntary contributions, while 28.9% were flexible funds, the vast majority of which were assessed contributions, as seen in figure 14. Almost half of the available funds (46%) were assigned for polio, outbreak and crisis response, and special programmes – 97.1% of which in India, as shown in table 3.

Figure 14: The breakdown of funds available into voluntary contributions specified and flexible funds, and further breakdown of flexible funds

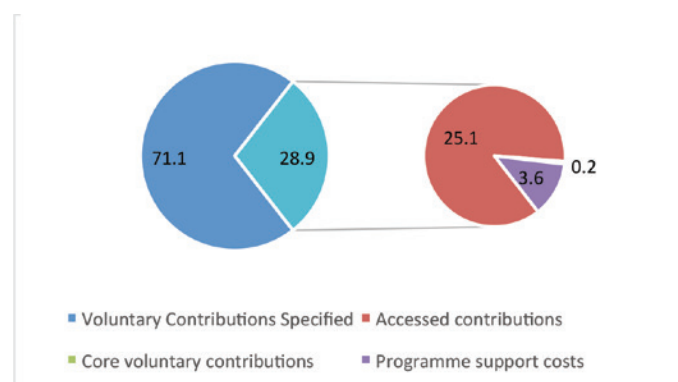


Table 2: WHO country office finances as of 31st December 2016

	Planned costs (US\$)	Distribution (US\$)
Brazil	8 180 000	2 547 732
China	20 509 533	14 210 083
India	86 774 088	72 319 853
Russian Federation	5 866 544	4 945 512
South Africa	9 762 321	9 130 860

¹⁸ Includes non-malignant neoplasms, endocrine, blood and immune disorders, sense organ disorders, digestive disease, genitourinary diseases, skin diseases, oral conditions and congenital anomalies

Following polio, OCR and special programmes, the next highest proportion of available funds were assigned for communicable disease, again with the highest proportion for India.

mainstreaming the SDGs into national plans, policies, and programmes, setting national targets and indicators, and measuring and reporting, while all except China are involved in advocacy activities. No country offices are

Table 3: Funds distributed per health category in BRICS

	Polio, OCR and special programmes	Communicable diseases	NCD	Promoting health through the life-course	Health systems	Corporate services / enabling functions	WHO's Health Emergencies Programme
% of distribution	46	24	5	3	9	12	1
Brazil	0.1	2.9	4.7	5.4	0.0	10.1	9.9
China	1.1	14.1	36.6	26.9	37.2	28.0	44.8
India	97.1	61.0	37.8	53.3	50.1	21.4	41.1
Russian Federation	0.0	6.5	18.7	9.5	0.5	15.9	2.5
South Africa	1.7	15.4	2.1	4.9	12.3	24.6	1.6

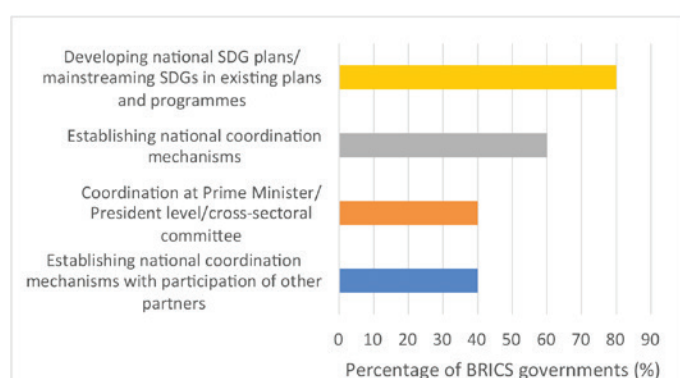
Sustainable development goals

The discussion on implementing the sustainable development goals (SDGs) is ongoing in all BRICS governments. The most common approach to implementation is the development of national SDG plans or mainstreaming in existing plans and programmes, which is occurring in all BRICS except South Africa, with other methods detailed in figure 15. The government of Brazil is most active in approaching

playing roles in supporting the mobilization of resources, and Brazil, India, and South Africa are promoting the establishment of alliances and a multi sectoral approach.

The SDGs are integrated within the NHPSPs in China and South Africa, with this process of integration ongoing in Brazil and India. Integration of the SDGs into the CCS and or workplans between WHO and government has occurred in China, Russian Federation and South Africa, with the process ongoing in Brazil and India. The WHO country offices are working with Parliament towards the attainment of health relevant SDGs in the areas highlighted in table 4, with China's providing the most support.

Figure 15: Approaches being taken by BRICS governments to SDG implementation



SDG implementation, being engaged in the four highlighted strategies. The WHO country office in each BRICS country has been active in some role of supporting the country for the implementation of the SDGs. All country offices bar the Russian Federation have supported in

Table 4: Areas in which WHO country offices are working with Parliament towards attainment of health relevant SDGs

Advocating for increased prioritization of health-relevant SDGs	Implementation of international commitments, conventions, and legal instruments	Increased allocation of resources for health in national budgets	Development of national laws to implement the SDGs
China Russian Federation	China	South Africa	China

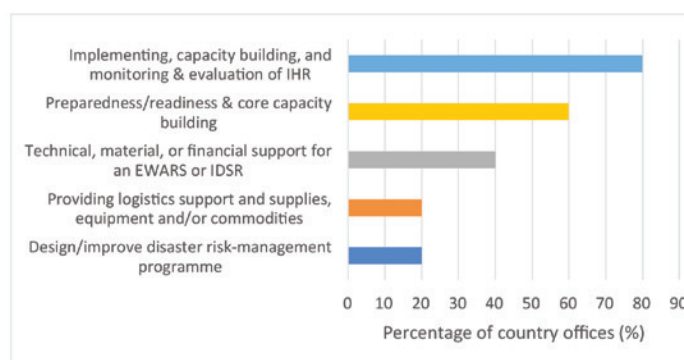
analysis of key partners based on each organization's competitive advantage.

Emergency preparedness

Between January 2015 and 31st October 2016, three BRICS underwent a health emergency or outbreak, these were in the form of natural disasters (India), and disease outbreaks or epidemics (Zika virus in Brazil, dengue in India, and measles in South Africa). The support provided to MoH by country offices for emergency preparedness and response during this period is shown in figure 16. Four BRICS country offices supported in implementing, capacity building, and monitoring and evaluation of International Health Regulations (IHR), and three were involved in preparedness/readiness and core capacity building. None were involved in setting up and leading a Humanitarian Health Cluster where necessary or providing financial support.

Backstopping missions

Figure 16: Support given by country offices to MoH for emergency preparedness and response (%)



BRICS received a total of 824 backstopping missions from different levels of WHO staff between January 2015 and 31st January 2016, detailed in table 5, representing 12% of global backstopping missions during that time. The highest number of missions came from the WHO headquarters (448), followed by the regional office (297), though only 8% and 19% of these missions, respectively, were initiated by the country office. China was the most visited country at regional, headquarter, and joint visit levels receiving 540 missions, none of which were initiated by the country office. South Africa received the fewest missions (29 overall), though 93% were initiated by the country office.

The topics of backstopping missions to BRICS is shown in figure 17. The largest percentage (a third) were related to health systems/universal health coverage, followed to health systems/universal health coverage, followed

Figure 17: Composition of WHO backstopping missions to BRICS

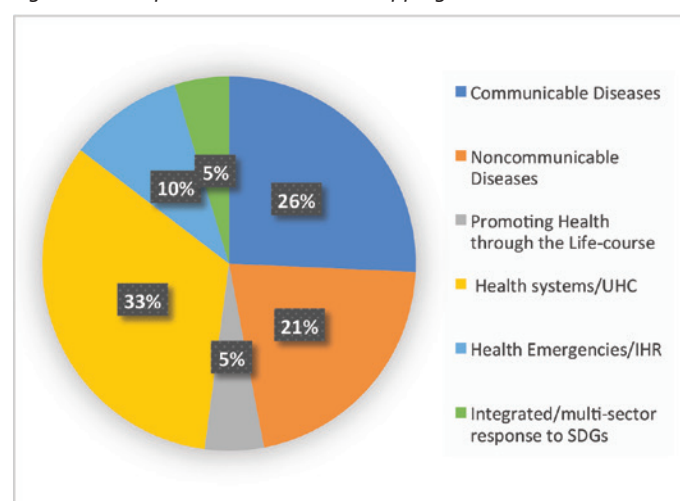


Table 5: The number of backstopping missions received by BRICS from different levels of WHO staff and percentage initiated by country office

	Brazil		China		India		Russian Federation		South Africa	
	Number	% initiated by country office	Number	% initiated by country office	Number	% initiated by country office	Number	% initiated by country office	Number	% initiated by country office
Sub-regional office	2	-	0	NA	0	NA	0	NA	9	100
Regional office	81	37	147	0	18	56	46	26	5	100
Headquarters	20	50	343	0	20	50	58	16	7	71
Joint visit by HQ & RO (and/or sub-regional office)	4	100	50	0	3	0	3	33	8	100
Total	107		540		41		107		29	

by communicable diseases (26%) and NCD (21%). The largest proportion of missions in India (29%) and South Africa (34%) were due to communicable disease, while in China and the Russian Federation largest proportion of missions were attributed to health systems/universal health coverage (37% and 36% respectively). Brazil differs from these in that the majority of its missions were related to NCD (57%).

Donor coordination mechanisms

Donor coordination mechanisms for health exist in India, where WHO is a participant, and South Africa, where WHO is a chair or rotational chair. India is the only BRIC country eligible for Gavi support, with its WHO country office playing roles in proposal development, support and implementation, and reporting and monitoring. Both India and South Africa are eligible for Global Fund, with both country offices providing technical support and/or capacity building for the accessing, implementing and reporting of grants through being members of the Country Coordination Mechanism, and the development of proposals or concept notes. India's country office is also involved in reporting on monitoring and evaluation of grant progress and performance, and is a sub-recipient for Global Fund grants in the tuberculosis programme. The country office provided support to the government on mobilising resources for health at country level (including from Gavi/Global Fund) between January 2015 and 31st October 2016 in India and South Africa.

Cooperation with the United Nations system

There is a Joint National/UN Steering Committee with participation of the WHO country office in one of the BRICS countries (China), and none with participation from the MoH. The head of the WHO office had acted as the RC at some point between January 2015 and 31st October 2016 in Brazil and China, each for less than three months. An Integrated Strategic Framework does not exist in any of the BRICS countries, while a UNDAF or equivalent is present in all BRICS except the Russian Federation. Health is incorporated at outcome level in each of the BRICS with a UNDAF, as shown in table 6. It is also incorporated at output level, results group, and joint work, in China and India.

Communicable disease and health systems/universal

Table 6: How health is incorporated in the UNDAF in BRICS countries where a UNDAF is present

	n (of 4)	%
Outcome level	4	100
Output level	2	50
Results group	2	50
Joint work	2	50

health coverage are the health issues most commonly included in the UNDAF, appearing in each of countries where a UNDAF is present, as seen in table 7. Brazil and China include the highest number of highlighted health issues in their UNDAF (7), followed by India and South Africa (5).

The WHO is involved in either participating or chairing/

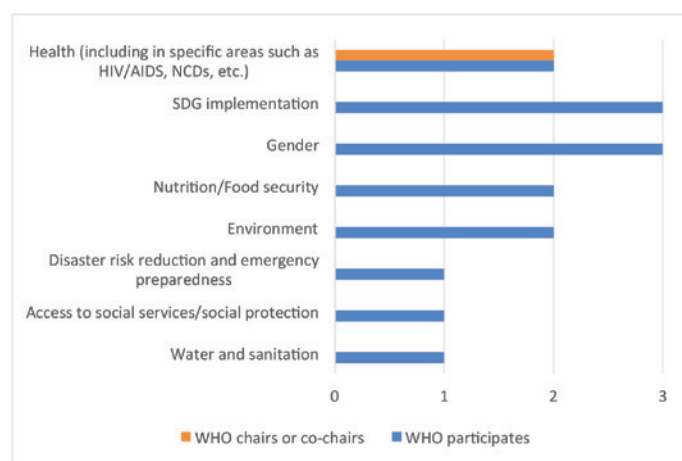
Table 7: The number and percentage of BRICS countries where a UNDAF is present which include selected health issues

Health Issue	n (of 4)	%
Communicable diseases	4	100
Health systems/Universal health coverage	4	100
Reproductive, Maternal, Newborn, Child and Adolescent Health	3	75
Nutrition and/or food safety	3	75
Noncommunicable diseases	3	75
Health Emergencies/International Health Regulations (2005)	3	75
Ageing and population	2	50
Social Determinants of Health/Health and the environment	1	25
Implementation of Framework Convention on Tobacco Control	1	25
Other	1	25
Anti-Microbial Resistance	0	0

co-chairing at least one results/thematic group in all BRICS countries except the Russian Federation. Health is the only group which is chaired or co-chaired by WHO as seen in figure 18, with this occurring in China and India. The country office in South Africa participates in seven of the thematic/results groups, while India participates in five groups and chairs one. Aside from health, SDG implementation and gender groups are those most often participated in, and no participation or chairing/co-chairing occurs in the monitoring and evaluation, or human rights groups.

The country offices in Brazil and India participates in Joint Programmes, but no BRICS country offices participate in the Joint Resource Mobilisation Strategy or One Fund/Multi donor trust fund.

Figure 18: The number of BRICS in which WHO office participate and chair or co-chair thematic/results groups



World Health Organization

Department of Country Cooperation and
Collaboration with the United Nations System
20, Avenue Appia
1211 Geneva 27
Switzerland

Tel: +41 22 791 21 11

Fax: +41 22 791 31 11

www.who.int

© WHO 2017. Some rights reserved. This work is available under the CC BY-NC-SA 3.0 IGO licence.



**World Health
Organization**