Medical Regulatory Systems of BRICS Countries:
A Comparative Analysis

Original Research

Sponsored by Centre for Health Policy and Planning,
Datta Meghe Institute of Medical Sciences (Deemed University)
Sawangi (M) Wardha, India

Dr Lalitbhushan S Waghmare

Dr Tripti K Srivastava

Dr Jayant Vagha

Dr Vedprakash Mishra

Medical Regulatory Systems of BRICS Countries: A Comparative Analysis

Dr Lalitbhushan S Waghmare
Dr Tripti K Srivastava
Dr Jayant Vagha
Dr Vedprakash Mishra

Publishing Partner:
International Journal of Scientific and Research Publications (ISSN: 2250-3153)
IJSRP Inc.
www.ijsrp.org

Foreword

It gives me immense pleasure to forward this piece of work to the developing world where Globalization and standardization of systems is the surest key to the much desired excellence in an all-round manner. Realistically speaking the author has unleashed the need of BRICS, the association of five major emerging national economies: Brazil, Russia, India, China and South Africa in a cogent, credible and free flowing manner so as to ensure an improvisation in the domain of health and equity.

The work embodied specifically addresses the core challenges to unfurl BRICS potential Globally in rendering meaningful, purposive and focused solutions to long-standing health problems and those pertaining to health service delivery issues and health plans and policies. Though BRICS have a distinguished identity of its own type by virtue of their large, fast-growing economies whereby they have a significant influence on Global affairs, however, as has been rightly brought out in this monograph that, they differ in significant ways in regard to structure, operation and effectivity of the governing medical regulations.

The authors are Professors in the Faculty of Medicine and are associated with Centre for Health Sciences Education Policy & Planning of Datta Meghe Institute of Medical Sciences (Deemed University) which is a think tank for generating intellectual inputs out of diligent research to cater to the policy and planning of health sciences educational profile by the competent authorities. The chronological sequence of scientific enquiry in the present work is a testimony to the clarity of defined objectives and its palpably perceived relevance with reference to the Health care system across the Globe transgressing the geographical boundaries in its totality.

The comparative analysis of the medical regulatory systems is bound to provide an in-depth evidence base for the postulation of the much desired International medical regulation that can support the development of plans, policies and procedures appropriately supported by the Indian Medical Graduate. It provides a wealth of information on medical regulation in five different jurisdictions. As highlighted in the introduction to the report, this information aims to contribute to an evidence base to inform policy and practice for the center. It may help frame and inform approaches towards active collaboration between the BRICS countries.

As a primary mission to the attainment of millennium goals of Health care, it is mandated that well-meaning and sumptuous policy frames are put into place and such studies are bound to contribute meaningfully towards establishing the much required benchmarks for such a laudable initiative to succeed.

I deem it my pleasure to record my sincere compliments to all the authors for this exemplary piece of creativity pertaining to a virgin area and look forward to imbibe the evidences and recommendations generated out of this work so that India can be projected as a knowledge/education hub for the Health care systems amongst BRICS countries jointly and severally.

Dr. Vedprakash Mishra

Chairman, Academic Committee, Medical Council of India, New Delhi

Preface

BRICS and other multinational groupings are useful to policy- makers involved in the development of foreign policies. However, it remains unclear if such groupings have a role in the study and development of global health policy. The debate around this issue and focus on the potential role of BRICS in the pro-motion of universal health coverage – an "umbrella" goal for health in the post-2015 development framework Brazil, the Russian Federation, India, China and South Africa – in the international arena have risen enormously in recent decades. The increasing internationalization of the medical profession raises the issue of safeguarding the practice of medicine and the use of the medical workforce. These years, medical education is showing trends that also dominate other fields of higher education. Within the framework of internationalization, globalization, and cross-border education, and driven by the development of information and communication technology as well as by pronounced migration of medical doctors, there are economic and managerial consequences such as commercialization and privatization in a variegated mix of for-profit and not-for-profit providers.

Health appears for the first time as a discussion point in the Sanya Declaration at the 3rd BRICS Summit in 2011 in China, with regard to HIV/AIDS. Since then the group has held annual meetings devoted to health, with the first meeting of the BRICS health ministers hosted by the Chinese in Beijing in July that year. In 2012, the BRICS health ministers also decided to meet every year on the side-lines of the World Health Assembly.

The BRICS countries were being discussed, but there was very little published on their role in health. It was an obvious area to explore. What interested us most was the extent to which they were acting as a unified bloc: looking at what they were doing, compared with the rhetoric, was fascinating. It's interesting to see a new center of power emerging in global health with a new set of priorities that contrast with the dominant western health development paradigm.

Many efforts have preceded to have a common platform for the standardization, accreditation and mutual recognition of the qualifications in European union Countries and they have proven to be largely rewarding for the region. The World Health Organisation (WHO) has promoted regulatory capacity building, collaboration and harmonization for a long time and will continue to do so. No such effort however has been initiated for the BRICS countries.

The first step towards doing so is to understand the medical regulatory systems of these diverse countries and to proceed with the comparative analysis. The Centre for Health Policy and Planning (CHPP), Jawaharlal Nehru Medical College, Sawangi(M), Wardha, India, had undertaken the current study for the purposes of increasing the level of understanding and identify similarities and differences between medical regulation in the India and in other similar regulatory jurisdictions which shall further help CHPP in developing the policy towards strengthening the collaborations between BRICS countries.

The structure, remit and values of medical regulation vary in significant ways between the countries examined. The countries surveyed have developed a number of different medical regulatory systems and, while all have departments of health, the development of standards and

codes of ethics together with responsibility for the regulation of individual doctors has been devolved to other organizations. In terms of their remit, the medical regulatory organizations in the countries surveyed set as their primary objectives a combination of registering/licensing medical practitioners, setting standards for the profession, promoting best practice and patient safety, promoting fair access to healthcare and regulating medical education. In most of the countries in this study, medical regulatory authorities do not formally distinguish between registration and licensing processes, and registration alone may be sufficient to entitle doctors to practice. The requirements for a license to practice medicine are relatively similar across all analyzed countries. Revalidation of registration is uncommon in the countries examined. None of the countries we examined have a formal system for revalidation except for a partial exception in India where re-registration requirements vary by state, with some states (e.g. Delhi, Maharashtra) issuing registrations for a stipulated period of time (generally 5 years) with the requirement to renew thereafter (although renewal is purely administrative. The proposed process would use a points system, and be tied explicitly to Continuous Professional Development (CPD).

All countries surveyed have a code of medical ethics which follows a relatively uniform pattern. Quality Assurance in medical education is in place , however, the bodies responsible for these functions vary from country to country. While in some (India, South Africa,) the formal regulation of medical education is primarily the remit of the medical regulatory body, in others, responsibilities are shared between medical councils, local authorities, and ministries or health and/or education (Brazil China and Russia).

The authors have tried to provide an in-depth analysis of five medical regulatory systems of future economic superpowers of the world. Sub-regional and regional collaboration between governments and regulators is vital to create a predictable harmonized "quality market for quality medical education". We feel it's a humble beginning, which may pave a way for further research on regulatory systems of the World.

Dr Lalitbhushan S Waghmare

Copyright and Trademarks

Authors

1. Dr Lalitbhushan S Waghmare
MD, MPhilHPE
Dean, Interdisciplinary Health Sciences,
Professor, Department of Physiology ,
Datta Meghe Institute of Medical Sciences (DU), Sawangi (M), Wardha,
Maharashtra, India

2. Dr Tripti K Srivastava
MD, MPhilHPE, FAIMER
Professor & Head, Department of Medical Education
Professor, Department of Physiology,
Datta Meghe Institute of Medical Sciences, (DU), Sawangi (M), Wardha,
Maharashtra, India

3. Dr Jayant Vagha
MD, MPhilHPE, FAIMER
Professor & Head , Department of Pediatrics,
Datta Meghe Institute of Medical Sciences, (DU), Sawangi (M), Wardha,
Maharashtra, India

4. Dr Vedprakash Mishra
Chancellor, Krishna Institute of Medical Sciences, Karad, India
Chief Advisor, Datta Meghe Institute of Medical Sciences, Sawangi (M), Wardha

Table of Content

1. INTRODUCTION

BRICS is the acronym for an association of five major emerging national economies: Brazil, Russia, India, China, and South Africa. [1] The grouping was originally known as "BRIC" before the inclusion of South Africa in 2010. The BRICS members are all developing or newly industrialised countries, but they are distinguished by their large, fast-growing economies and significant influence on regional and global affairs; all five are G-20 members.[2]

In 2010, South Africa began efforts to join the BRIC grouping, and the process for its formal admission began in August of that year.[3] South Africa officially became a member nation on 24 December 2010, after being formally invited by the BRIC countries to join the group.3The group was renamed BRICS – with the "S" standing for South Africa – to reflect the group's expanded membership.[4] In April 2011, the President of South Africa, Jacob Zuma, attended the 2011 BRICS summit in Sanya, China, as a full member.[5-7]

As of 2014, the five BRICS countries represent almost 3 billion people which is 40% of the world population, with a combined nominal GDP of US$16.039 trillion (20% world GDP) and an estimated US$4 trillion in combined foreign reserves.[8,9] As of 2014, the BRICS nations represented 18 percent of the world economy.[10]

Brazil held the chair of the BRICS group in 2014, having hosted the group's sixth summit in 2014.

The BRICS have received both praise and criticism from numerous quarters. [11-13] The term, "BRICS", was coined by economist Jim O'Neill in his publication, Building Better Global Economic BRICs.[14]

The current world order is witnessing a profound shift. At the heart of this shift is a significant demographic transition—the 'West' is ageing, while many of the 'rest' are soon to benefit from their 'demographic dividends.' These population trends will necessarily demand an expansion of economic and political resources, given heightened demand for adequate social services and job opportunities. The 'West' is experiencing a noticeable stagnation in economic performance, with the expected rate of growth across OECD countries projected at less than 2 per cent in 2013. In contrast, the economies of the hitherto 'developing' world have displayed several years of sustained growth and are expected to continue growing at an average of roughly 6 per cent year on year. This economic shift is happening in absolute as well as relative terms. Consequently, global economic and political power is becoming more broadly distributed. The formerly dominant Western powers are steadily losing the ability and perhaps the will to play the hegemon's role, while the formerly marginalised 'third world' finds itself newly empowered.

Naturally, the latter group seeks to use its newfound economic growth to gain equitable representation. This trend is reflected in global developments towards the formation of a truly polycentric system, based on increasingly broad participation of states representing all major global economies. It is also reflected in the increased responsibility of emerging market economies and developing countries, growing global interdependence, and the new role of informal structures of global political and economic governance and diplomacy.

BRICS members build their global relations on the basis of the UN Charter, generally recognised principles and rules of international law, as well as the following common principles of the group:

- Mutual respect and non-interference in each other's internal affairs;
- Non-confrontation;
- Opposition to the use or threat of force in international relations;
- Centrality of multilateralism on global issues;
- Mutual respect for each other's choice of development path;
- Openness;
- Pragmatism;
- Solidarity;
- Non-bloc nature;

- Neutrality with regard to third parties

Given the diverse characteristics and histories of the BRICS nations, differing perspectives on a multiplicity of issues is justified. There are sufficient convergences in terms of shared predicaments, challenges, and objectives. BRICS is also an inherently diverse grouping, which is reflective of the flexibility and adaptability of its member states in forging a collective, progressive trajectory in this new world.

BRICS - A Diverse Grouping

As a multilateral grouping, the five BRICS nations seem, on the surface, to have little in common. They are profoundly different, and these differences must be recognized before mounting an attempt to build upon the convergences.

The five countries represent widely differing political systems: China is a one-party state; Russia's government is highly centralised; Brazil, India, and South Africa are democracies with significant corruption and/or ethnic strife still to be dealt with.

They have also reached varying levels of economic development. China outpaces the group in economic size, growth and trade. Furthermore, the member states are differently situated in terms of resources, absolute consumption and energy intensity. They have differing demographic trends. Brazil has a predominantly urban population, while India is still largely rural. Russia has an ageing population, while India is relatively young. On the whole, however, the five nations will contribute greatly to the world's growing middle class.

Looking outward, BRICS nations have widely differing statures within the current global order. Russia and China are established global powers with permanent seats on the UNSC. India, Brazil and South Africa aspire to global influence but are currently relegated to the position of regional powerhouses.

Given their differing levels of power and conceptions of individual interest, some level of geopolitical divergence on a range of issues is not surprising. Thus, the broadly shared subscription of all the BRICS nations to the principle of non-interference has not translated into a uniform position on many international issues. For example, Russia and China oppose external intervention in Syria. On the other hand, Brazil and India have taken more nuanced positions, including voting to condemn the Syrian government's violent crackdowns on protesters.

BRICS and Global health

Although BRICS and other multinational groupings may be useful to policy- makers involved in the development of some foreign policies, it remains unclear if such groupings have a role in the study and development of global health policy. The debate around this issue and focus on the potential role of BRICS in the pro-motion of universal health coverage – an “umbrella” goal for health in the post-2015 development framework Brazil, the Russian Federation, India, China and South Africa – in the international arena have risen enormously in recent decades. These five countries represent around 25% of the world’s gross national income, more than 40% of the world’s population and about 40% of the global burden of disease. Although great attention has been paid to their economic performance, less widely noted is the fact that they are also well positioned to exert a significant influence on global health.

Inter-BRICS health cooperation is gaining momentum and represents a promising channel for improving health as illustrated by the yearly meetings of their ministers of health. Such cooperation provides the countries with a valuable platform to share their experiences and to work together to address key public health issues, including neglected tropical diseases

Medical regulatory Systems in BRICS Countries

The increasing internationalization of the medical profession raises the issue of safeguarding the practice of medicine and the use of the medical workforce. These years, medical education is showing trends that also dominate other fields of higher education. Within the framework of internationalization, globalization, and cross-border education, and driven by the development of information and communication technology as well as by pronounced migration of medical doctors, there are economic and managerial consequences such as commercialization and privatization in a variegated mix of for-profit and not-for-profit providers. Higher education has now become a trade commodity regulated by the World Trade Organization, which is not always attending to quality issues. In reaction, emphasis has arisen on quality assurance, expressed in terms of harmonization, standardization, accreditation, and mutual recognition of qualifications.

Many efforts have preceded to have a common platform for the standardization, accreditation and mutual recognition of the qualifications in European union Countries and they have proven to be largely rewarding for the region. No such effort however has been initiated for the BRICS countries.

The first step towards doing so is to understand the medical regulatory systems of these diverse countries and to proceed with the comparative analysis. The Centre for Health Policy and Planning (CHPP) has undertaken the current study for the purposes of increasing the level of understanding in the matter and identify similarities and differences between medical regulation in the India and in other similar regulatory jurisdictions which shall further help CHPP in developing the policy towards further strengthening the collaborations between the BRICS countries.

2. AIM

A comprehensive analysis of medical regulation in BRICS countries, for crystallization of policy and practice on Indian and International Medical Graduates (IMG).

Objectives

1. To Comprehend the values, structures and operations of BRICS medical regulators.
2. To identify similarities and differences between medical regulation in India and in other similar regulatory jurisdictions.
3. To provide an evidence base on international medical regulation that can inform the Center for Health Policy and Planning in the development of policies and procedures for supporting and working with Indian graduates and IMGs.
4. To recommend future polices to regulatory bodies like University Grants Commission (UGC), Medical Council of India (MCI) and Government of India, so that India can be projected as a knowledge / education hub for Medical Education amongst the BRICS countries
5. To develop a body of regulatory contacts in order to facilitate collaboration globally.

3. REVIEW OF LITERATURE

The review focuses distinctly on three aspects of this work:

1. BRICS countries grouping and their role in Global Health
2. The Internationalization of the Medical Education and the quality concerns therein
3. The issues linked towards licensing and regularization of medical education.

1. BRICS countries grouping and their role in Global Health

The acronym BRIC was coined in 2001 paper entitled "Building Better Global Economic BRICs." by Jim O'Neill, a senior executive at Goldman Sachs, to denote four emerging national economies: Brazil, the Russian Federation, India and China.1 The acronym was subsequently extended– to BRICS – to include South Africa. Together, the nations in the BRICS group, which are widely considered to represent the most important emerging economies, hold approximately 40% of the world's population.[15]

Harmer et al 2013 suggested that although BRICS and other multinational groupings may be useful to policy-makers involved in the development of some foreign policies; it remains unclear if such groupings have a role in the study and development of global health policy. The debate around this issue and focus on the potential role of BRICS in the pro-motion of universal health coverage – an "umbrella" goal for health in the post-2015 development framework needs a serious examination.[16,17]

World development indicators database, Washington: World Bank 2013 report quotes "Brazil, the Russian Federation, India, China and South Africa – in the international arena have risen enormously in recent decades. These five countries represent around 25% of the world's gross national income, more than 40% of the world's population and about 40% of the global burden of disease". Petrie D et al 2014 pointed out that, although great

attention has been paid to their economic performance, less widely noted is the fact that they are also well positioned to exert a significant influence on global health.[18]

There are those who see a strong potential role for BRICS in the development of universal health coverage. These people observe how Brazil, China, India and South Africa have all made considerable recent progress in expanding health coverage. Such success has inspired other governments. In addition, BRICS are committed to spreading the lessons they have learned from their recent experiences. By offering diplomatic support and acting as technical resources, these nations are also increasingly promoting the development of various global health policies – including universal health coverage. For example, in 2012, at the Sixty-fifth World Health Assembly, representatives of the BRICS countries "stressed the importance of universal health coverage as an essential instrument for the achievement of the right to health". In a communiqué issued at a health ministerial meeting in 2013, the same nations declared their sup-port for the then recent United Nations resolution on universal health coverage and stated that they were "committed to work nationally, regionally and globally to ensure that universal health cover-age is achieved". Subsequently – at the Sixty-sixth World Health Assembly – the BRICS countries agreed to identify national institutions that could collaborate with the World Health Organization (WHO) in developing a monitoring framework that would help track progress towards universal health coverage.

Kickbusch I et al 2014 suggested that since the BRICS grouping was based on national economies, it some-times appeared awkward and artificial in the health policy arena. [19] The BRICS countries vary greatly in terms of their burdens of disease, health systems, interests in the global pharmaceutical trade, engagement in the international arena and much else.

The millennium development goals: report 2013 reads "While the health ministers of these five nations have met – and continue to meet and share concerns on a regular basis, the resultant declarations and communiqués appear to have had little real impact on any global health policy.20 There are several reasons for BRICS' increasing prominence in the global health discourse despite this lack of impact. The emergence of BRICS as a distinct entity with increasing levels of multinational coordination in health and other activities is applying pressure to both the existing and emerging mechanisms and processes of global governance. Many of those who promote universal health coverage, whether as researchers, politicians or advisors, often seem to be searching for leadership and inspiration from national governments and regional or other blocs. Some nations that once provided such leadership have largely withdrawn and this has left a gap that BRICS could conceivably fill. More research is needed to explore whether this gap really exists, whether or not it matters, and whether it could really be filled by BRICS. The former Soviet Union, which paraded its achievements in implementing universal health coverage at Alma -Ata in 1978, has ceased to exist. The Non-Aligned Movement, which shaped many global health debates in the 1970s and 1980s, has largely disappeared from the stage.

Given its long struggle to implement universal health coverage at home, the United States of America appears to be poorly placed to promote such coverage elsewhere. The European Union often finds itself paralyzed, with its member states unable to agree on a common position. While many might be looking to BRICS for leadership, it is still not clear if these countries have sufficient shared interests or the coordinating mechanisms and processes needed to collectively and cohesively influence or promote global health policy."

Kickbusch I et al 2014 further suggests that these five countries are already influencing global health, as well as some of their major domestic achievements and challenges. Each country has unique characteristics in terms of health performance and global health diplomacy.[19]

McKee M et al 2014 state that within BRICS, hundreds of millions of people have been lifted out of poverty. This has resulted in marked improvements in health and in substantial progress towards achieving the Millennium Development Goals.[21]

Rao KD et al 2014, Meng Q et al 2014, Kaddar M et al 2014, all are of the opinion that the countries are also moving towards universal health coverage, although without any uniform approach and at an uneven pace.[22-24]

Creswell J et al 2014 report that Brazil, China and India are leading in the manufacturing of low-cost medicines and vaccines. In just a few years BRICS have amassed a wealth of experience in universal health coverage and low-cost medicines and vaccines from which other low- and middle-income countries can draw valuable examples.[25]

BRICS continue to face major health problems. Although life expectancy has improved, non-communicable diseases have increased significantly in these countries. BRICS account for half of the 8.6 million people developing tuberculosis every year.[25]

Hyder AA et al 2014 wrote in WHO Bulletin that there has also been a dramatic increase in injuries linked to road-traffic accidents,[26] as well as in diseases associated with air and water pollution. BRICS' share of the global burden of non-communicable diseases is expected to grow in the future. Mujica OJ et al 2014 point out that with economic growth, health inequity has remained a prominent issue in all BRICS countries.[27] Summaer A of Brighton Institute of development studies; 2012 writes that the BRICS countries account for about 50% of the world's poor and health inequity will have serious consequences for their populations if left unaddressed.[28] Mirelman AJ et al in 2014 writes that the BRICS group's efforts towards universal health coverage are therefore encouraging. Moreover, the potential impact of expanded vaccine coverage in BRICS is evident.[29]

BRICS have already become protagonists in International cooperation. With the exception of the Russian Federation, which prioritizes the Commonwealth of Independent States region, they are increasingly focusing on Africa. On an individual basis, each country has a history of fostering development cooperation. They have been contributing to reshaping health cooperation in recent years and are positioning themselves as "development partners" rather than donors. This was strongly expressed in the final declaration of the Fourth High Level Forum on Aid Effectiveness, held in 2011 in Busan, in the Republic of Korea. [30]

The declaration, which emphasized that the nature, modalities and responsibilities that apply to south–south cooperation (between developing countries), differ from those of north–south cooperation (between developed and developing countries). Although the BRICS role in health cooperation has greatly increased, systematic information is still lacking about the group's financial contribution in the context of south–south cooperation, and the impact of these new ways of providing development aid has yet to be documented.[30]

Fan VY et al 2014 writes that the Inter-BRICS health cooperation is gaining momentum and represents a promising channel for improving health as illustrated by the yearly meetings of their ministers of health. Such cooperation provides the countries with a valuable platform to share their experiences and to work together to address key public health issues, including neglected tropical diseases [31]

Cashwell A et al 2014 report that on the basis of the countries' capacities and comparative advantages, inter-BRICS cooperation has the potential to bring about global changes and make a positive contribution to the health of the population, not only in BRICS but also in the rest of the world. However, the magnitude of the impact on global health will also depend on the countries' ability to strengthen their policy coherence for development. It will further depend on the strength of inter-BRICS cooperation and their ability to more actively translate their ministerial declarations and communiqués into concrete health policy action.[32]

The Internationalization of the Medical Education and the quality concerns therein

More than thousand years since its existence, starting with the establishment of the first of the modern Universities at Bologna, in 1088, the modern higher education system has definitely evolved. Traditionally, higher education has been elitist in character and has catered to the needs of select minority including priests, civil servants, lawyers and doctors. The objective was to provide specific skills. During the Medieval Age1 emphasis was placed on teaching of religion and liberal arts. With the advent of Industrial Revolution, science and technology became important in the late 17th and 18th centuries. The early part of 20th century saw the entry of working class‘ into the higher education system which slowly began to acquire a more open character. By the end of World War II, higher education acquired an egalitarian character. There was an increased demand for professional education as the knowledge force became an essential requirement for national development. With advent of information and communication technology, there was a paradigm shift in both education, philosophy and pedagogy (Pawar K B, 2012).[33]

The importance of higher education was formally recognized perhaps for the first time in 1948 when the United Nations adopted the "Universal Declaration on Human Rights‟ (United Nations, 1948).[34] It ordained that education should promote understanding, tolerance, and friendship amongst nations.

The World Bank (1994) in its document Higher Education: The Lessons of Experience states that higher education is of paramount importance for economic and social development. Institutions of higher education have the responsibility for equipping individuals with advanced knowledge and skills required for positions of responsibility in government, business and the professions. The preamble to the World declaration on higher education concluded the fact that education is a fundamental pillar of human rights, democracy, sustainable development and peace.[35]

An academic revolution has taken place in higher education in the past half century marked by transformations unprecedented in scope and diversity. Comprehending this ongoing and dynamic process while being in the midst of it is not an easy task. Arguably, the developments of the recent past are at least as dramatic as those in the 19th

century when the research university evolved, first in Germany and then elsewhere and fundamentally redesigned the nature of the university worldwide. The academic changes of the late 20th and early 21st centuries are more extensive due to their global nature and the number of institutions and people they affect (Spring J, 2008).[36]

The United States was the first country to achieve mass higher education, with 40% of the age cohort attending post-secondary education in 1960. While some developing countries still educate fewer than 10 percent of the age group, almost all countries have dramatically increased their participation rates. Western Europe and Japan experienced rapid growth in the 1980s, followed by the developed countries of East Asia and Latin American countries. China and India, currently the world's largest and third largest academic systems respectively, have been growing rapidly and will continue to do so .[36] The United States of America has major plans for investment in higher education. It has injected new dynamism in the higher education sector through competition and incentives. China has undertaken comprehensive reforms in higher education for over past two decades. Even countries like Pakistan have embarked upon wide ranging systemic reforms. [37]

In a globalized economy, the higher education sector has become a priority due to the demand for skilled human resource. Globalization has caused an impact on higher education, thereby necessitating highly skilled human resource to work on a global platform. The Asian countries are investing in enhancing their higher education system with the objective of building world class universities. Amongst these, China is particularly focused on upgrading its present universities to become internationally competitive research institutions in the coming decade. Even smaller countries like Singapore, by partnering with some of the world class universities, are projecting themselves as education hubs of Asia. [38]

Globalization and higher education are linked to each other. On one hand we see countries that, because of demographics, have a great demand for higher education than the supply. In such situations students tend to go abroad for higher education. In contrast, Europe for instance, because of its aging population, has a shortage of students, therefore a strong trend exists Europe to absorb students from developing countries. Secondly, the numbers and types of providers of higher education has also grown. mCountries like USA have a combination of public and private universities which are not for profit. However, in Asia and Latin America, there has been an increase in number of private for profit universities.

The third development is the emergence of innovative delivery methods of higher educations. The traditional model was face to face learning which has been now largely replaced by E-learning. So also, transnational education and cross border education has gained prominence primarily because of the movement of people and programmes and institutions across borders. [39]Identification of education as a service in the context of GATS of the World Trade Organization (WTO) has thereby evidenced the importance of internationalization of higher education.

Internationalization of Higher Education :

Over the last two decades, globalization has impacted operations of various institutions including academic institutions all over the world. Higher education institutions have been both the agent and objects of globalization. [40]

International mobility, global comparison, bench marking etc. has gained lot of importance in policy making. Enders, J.; Fulton, O (2004), notes with surprise the amount of debate on global phenomenon in higher education focusing on marketization, competition and management in higher education. [41]

Some of the countries adopted institutional devolution, quasi-market competition in the system and performance managed staffing to address the global competition. The other countries have responded differently to the changes in global environment. In the English-speaking world, international operations have become the primary mode of development.

In Europe, the negotiation of the common higher education area and European Research Area has been the major development leading to the emergence of global higher education environment. Global research circuits have been wired into the rapidly developing higher education systems of China, Singapore and Korea. India has not yet opened up the direct entry of foreign institutions in education sector.

Internationalization in higher education is a phenomenon that has been defined in a wide variety of ways whether pertaining to individual student outcomes, such as language proficiency and intercultural competence, or to organizational strategies incorporating processes, procedures, and strategies that enhance the international identity and activities of an institution.

In the last two decades, universities have increased attention towards internationalization from institutionalization of mission, goals, and processes to tactical programs, research initiatives, and study abroad activities across an organization [42]

Universities are complex organizations made up of multiple stakeholders with an array of expectations of their own and from others outside of the organization. Today, U.S. university presidents, provosts, and deans are met with even greater challenges in an environment of greater expectations by parents, students, faculty, and staff and of higher tuition rates and diminishing funding from state and federal constituencies. The focus for leaders continues to be on limited resource allocation and the need to be creative in doing more with less support. These realities of maintaining balance of the budget can sometimes overshadow the need to expand certain strategic initiatives including internationalization. However, new collaborations, new knowledge, and available private funds related to strategic internationalization practices can contribute to creative and innovative thinking to impact the bottom line. [38]

Bartell (2003) [43] stresses the implicit nature of organizations and the communities in which they reside describing internationalization as a process-oriented framework articulated by leaders and stakeholders specific to each environment. He defines it as an organizational adaptation‖ (p. 43), while globalization is defined as an ―advanced phase in the evolving process of internationalization‖ (p. 47). Phases of globalization are identified with distinguishing features – (1) a domestic, ethnocentric perspective of market dominance; (2) a multi-domestic phase including adapting strategies for each external market; (3) a multi-national phase where corporations or higher educational institutions extend their human capital and infrastructure to other countries; and (4) a global or transitional phase in which organizations have developed far beyond domestic capacities with full manufacturing or assemblies being abroad (pp. 46-7).

Inherently, globalization is aligned with corporate organizations and market conditions and therefore is also applied to higher education initiatives. As an example, some institutional strategies for internationalization include integrating key topics or cases in the curriculum, sending students and faculty abroad while welcoming their international counterparts in the United States, and creating satellite programs or building entire campuses abroad [44]

Scholars highlight strategic commitment (institutional leadership and mission) and tactical components (curriculum integration and study abroad), as well as development phases necessary for university leaders to lead internationalization efforts with particular emphasis on ―adapting‖ to meet the needs of stakeholders outside of the organization (in this case, higher education institutions). Knight (1994) [45] recommends organizing efforts into four approaches:

1.Activity: activities, programs, and services within international studies and other

areas (Arum & Van de Water, 1992); student and faculty exchanges, internships, study abroad programs, to name a few (Schuerholz-Lehr (2007);

2. Competency: the development of new skills, knowledge, attitudes, and values that contribute to competencies in students, faculty, and staff (Knight J, 1997);

3. Ethos: commitment and global awareness that defines a kind of philosophy that is transcendent of the organization (Harari M, undated); and

4. Process of integrating international, intercultural dimension into teaching, research, and service functions of the institution (Knight J, 1994). [46]

Van der Wende‘s (1997) definition focuses on a systematic effort where higher education ―responds to challenges related to globalization of societies, economy, and labor markets.

Globalization, a key reality in the 21st century, has already profoundly influenced higher education. Globalization as the reality shaped by an increasingly integrated world economy, new information and communications technology (ICT), the emergence of an international knowledge network, the role of the English language, and other forces beyond the control of academic institutions. Internationalization is defined as the variety of policies and programs that universities and governments implement to respond to globalization. These typically include sending students to study abroad, setting up a branch campus overseas, or engaging in some type of inter-institutional partnership.[45-46]

Madalena Patricio, in 2011 published an article in University World News titled GLOBAL: Internationalization and medical education.47 She expressed that Internationalization has become an important force in higher education. It is also a powerful challenge and opportunity for medical schools. Under the 'traditional approach' teachers and

medical students confined themselves to a local curriculum developed in their own countries. Nowadays medical education has become far more internationalized. Medical schools are emphasizing an international approach that implies mobility of teachers and students and the implementation of a curriculum that builds on exchanges between two or more countries.

Ronald M. Harden, 2006 states that factors encouraging internationalization include (1) globalization of health care delivery, (2) governmental pressures, (3) improved communication channels, (4) development of a common vocabulary,

(5) outcome-based education and standards, (6) staff development initiatives, and (7) competitiveness and commercialization.[48]

He further proposes a three-dimensional model— based on the student (local or international), the teacher (local or international), and the curriculum (local, imported, or international) offers a range of perspectives for international medical education. In the traditional approach to teaching and learning medicine, local students and local teachers use a local curriculum. In the international medical graduate or overseas student model, students from one country pursue in another country a curriculum taught and developed by teachers in the latter. In the branch-campus model, students, usually local, have an imported curriculum taught jointly by international and local teachers. The future of medical education, facilitated by the new learning technologies and pedagogies, lies in a move from such international interconnected approaches, which emphasize the mobility of students, teachers, and curriculum across the boundaries of two countries, to a transnational approach in which internationalization is integrated and embedded within a curriculum and involves collaboration between a number of schools in different countries. In this approach, the study of medicine is exemplified in the global context rather than the context of a single country. The International Virtual Medical School serves as an example in this regard. WFME position paper on international standards in medical education: assessment and accreditation of medical schools's educational programs published in 1998 states,

"The increasing internationalization of the medical profession raises the issue of safeguarding the practice of medicine and the use of the medical workforce. These years, medical education is showing trends that also dominate other fields of higher education. Within the framework of internationalization, globalization, and cross-border education, and driven by the development of information and communication technology as well as by pronounced migration of medical doctors, there are economic and managerial consequences such as commercialization and privatization in a variegated mix of for-profit and not-for-profit providers. Higher education has now become a trade commodity regulated by the World Trade Organization, which is not always attending to quality issues. In reaction, emphasis has arisen on quality assurance, expressed in terms of harmonization, standardization, accreditation, and mutual recognition of qualifications."

Over the last years, a number of quality assurance initiatives have been taken internationally in higher education. Those taking such initiatives have included the United Nations Educational, Scientific and Cultural Organization (UNESCO), the Organisation for Economic Co-operation and Development, the International Association of Universities, the International Association of University Presidents, and the International Network for Quality Assurance Agencies in Higher Education. Similar initiatives have occurred at the regional level, for example in Europe by the European Association for Quality Assurance in Higher Education and the Bologna Declaration and Process, striving for a European dimension in quality assurance of higher education. The latter is now also a source of inspiration to higher education in Latin America and Africa.[49]

Indication of the globalization process in medicine and medical education can be found in the migration traffic of medical doctors and the growth of cross-border education. The latter encompasses a wide range of modalities, including movement of students, teachers, programs, and campuses abroad and distance learning using various technologies, including e-learning. The globalization process is supported by common curricular and management trends that facilitate definition of global standards in medical education, such as student-activating instructional methods, integration of basic sciences and clinical disciplines in teaching and assessment, emphasis on clinical and communication skills, broadening of clinical training settings including use of skills laboratories, greater influence of curriculum committees, increasing student influence on program development, clearer budgetary responsibility for education, and strengthening of educational leadership.

Issues linked towards licensing and regularization of Medical Education

The objectives and structures of medical regulatory procedures are naturally influenced by the norms and modifications of medical training in the country concerned, and also by the needs of the population, changes in

health policy, and the organization and provision of health care services. Changing expectations relating to the performance of physicians will also influence the standard of the criteria to be fulfilled and the processes leading to the authorization for independent practice.

Movement of physicians into and out of countries is inevitably a factor in determining the content of licensing provisions both in regard to the maintenance of internal standards for immigrating physicians and in ensuring that internal national licensing standards are acceptable elsewhere.

Provisions for licensing/authorization to practice medicine are normally to be found in specific legislation relating to medical practice, or are incorporated in broader legislation dealing with a number of health professions. The powers are usually vested either in the Minister of Health or the Ministry of Education, which may include specific powers to delegate licensing. Thus, political decisions may play a substantial role in determining the national responsibility for and mechanisms of licensing physicians to practice.

Occasionally, the legislation provides specifically for an independent medical chamber or council to be charged with these duties. In the last century, many countries created bilateral agreements for the mutual recognition of medical qualifications facilitating migration for the nationals of the countries concerned. At international level, as a consequence of the Nordic Agreement of 1965 between the Scandinavian countries (Denmark, Iceland, Finland, Norway and Sweden), mutual recognition of medical qualifications was established throughout the contracting countries. Clearly both developments had some impact on licensing processes in the countries concerned, and provide an example of a wider agreement for mutual recognition of qualifications between several countries. The Nordic Agreement (see Annex) sets out the basic principles for multilateral agreements for mutual recognition, anticipating the subsequent legislation in the EU.

However, within the European Region, in terms of both national and international legislation relating to medical regulatory systems, the most significant development has been the adoption by the Council of Ministers of the European Community Directives 75/362/EEC and 75/363/EEC in 1975 on mutual recognition of formal qualifications in medicine and on coordination of provisions in respect of activities of doctors. The subsequent amendments are consolidated in Directive 93/16 EEC. Whilst these facilitated the movement and recognition of licensed physicians, ironically they did not lead to as great an increase in migration as was anticipated or might have been expected. Nevertheless they had, and continue to have considerable impact on physicians' licensing not only within the European Union1 (EU) but elsewhere in the Region.

The Universities naturally have a prime interest as educators, just as the medical profession as a collective practicing profession has, in all aspects of licensing and regulation of the medical profession. Both play a major role in the determination not only of standards but also of changes in the licensing standards and processes. An indication of the role of the profession will be seen in the commentary on the EU legislation, which follows.

The major political changes in the centre and east of the region in the 1990s which led to increased access to knowledge of developments in scientific advances, knowledge of new skills and changes in medical education (many of which had been previously limited), coupled with other political developments and changes in health policy and organization, have also played a role in influencing the re-establishment of earlier licensing arrangements or modification of licensing arrangements in those countries.

Finally, the last few decades have seen the voice of the consumers of health care being expressed on issues relating to regulation and licensing of physicians, both directly through consumer organizations and through individual lobbying.

To a greater or lesser extent all these factors will continue to influence the evolution of licensing both at national and international level.

The success of biennial international conferences on medical regulation held since 1994 has led medical regulatory authorities around the world to recognize that international collaboration is an essential element in their role as public protectors. In September 2000, the readiness of medical regulatory authorities to foster international relations precipitated the formation of the International Association of Medical Regulatory Authorities (IAMRA).

The following broadly defined goals were identified for the organization.

- Facilitate international cooperation and collaboration among medical regulatory authorities and the exchange of medical regulatory information.

- Encourage and support high standards for medical education, licensure and professional conduct.
- Provide a forum for the development of new concepts and approaches in medical regulation and thereby support medical regulatory authorities in protecting the public.

The IGC resolved that two matters be dealt with as priorities: the development of the bylaws of the association and formulation of mechanisms by which information could be exchanged between the members. Working Groups were created to formulate proposals on each of these issues, which were presented for approval by IAMRA membership at the 5th International Conference on Medical Regulation in Toronto, Canada in June 2002. Final membership criteria and a dues structure were included in the bylaws. Additionally, a reference listing of all known medical regulatory authorities was developed to enhance the exchange of information. WHO Director-General in his address during the first meeting of BRICS health ministers at Beijing, China, July 11, 2011contemplated that the challenge for medical regulation in the 21st century is to create a relevant, effective medical regulatory system that can address the dynamics of global and rapidly changing medical practice environments, technologies and health care delivery systems.[50] International cooperation is the key to enhancing the role of medical regulatory authorities as the primary vehicle for public protection in health care. The BRICS Countries' medical regulators somehow have not been able to live up to the expectations of coming together as a cohesive unit in terms of accepting these challenges.

4. MATERIAL AND METHODS

It is a descriptive study conducted at Datta Meghe Institute of Medical Sciences (Deemed University), Sawangi(M), Wardha, India. Ethical considerations were suitably met with. A Systematic review of literature and Qualitative data gathering instruments were mainly utilized for the study. The duration of the study was of one year , from July 2013 to June 2014.

The approach to the research comprised four main steps. First, a typology of medical regulatory systems was developed. Second, the medical regulatory system of each of the BRICS countries were characterized according to this typology, based on available documents and key informant interviews. Third, a cross-country analysis was conducted to draw key messages and issues of particular interest to the Centre for Health Policy and Planning, DMIMS (DU). In a fourth and final step conclusions and implications were drawn for the CHPP, and recommendations for further research. The approach to each of these four steps is described in this chapter.

1. **Development of a Typology of Medical Regulation**

A typology was developed to characterize medical regulatory systems in a structured way This typology can later be used as a tool for the CHCP to effectively compare other medical regulatory systems to that in the India.

To develop this typology, a brief review of the literature on medical regulation was conducted. The literature focusing the medical regulation of BRICS countries was only included in the study. A total of 1017 articles were selected out of which 156 were analyzed for the study.

Based on thorough literature review; an interview guide (fig 1) was developed for Key Informant interviews. 20 key Informants were interviewed across all major disciplines in medical regulation.

Interview Guid

1. Structure and Nature of Medical Regulation
2. Registration Process and requirements
3. Revalidation/ Competence Assurance/ recertification
4. Standards & ethics
5. Fitness to Practice
6. Medical Education

Fig 1. Key Informant Interview Guide

Based on the literature and interviews, a 3-level hierarchical typology of medical regulatory systems was developed, which was used as a tool to draw information from each of the medical regulatory jurisdictions examined in this study. By providing a common structure to all the countries studied, the typology ensured consistency and comparability.

Typology

Structure and Nature of Regulation and Regulatory Body(ies)

1. Purpose of medical regulation
    - Stated purpose
    - Drivers and influential events
2. Values within medical regulation
    - Perceived definition of excellence in medical regulation Extent to which medical regulation is risk-based
    - Extent to which regulations aims at pro-actively educating doctors or re-actively imposing disciplinary action
    - Extent of concern with race, ethnicity, religion, disability, age and gender
    - Extent of patient involvement
3. Funding arrangements
    - Combined annual budget of medical regulatory bodies (absolute) Payers
4. Interaction between different regulatory bodies
    - Organizations involved in medical regulation, their tasks and status (i.e. government / semi-government / private)
    - Nature of relation between different regulatory bodies
    - Extent to which regional regulators are conditioned by national regulator
    - Extent of overlap in functions/objectives between different regulatory bodies
    - Extent to which medical council represents doctors professionally

Registration Process and Requirements

1. **Registration and licensing process**
    - Extent of differentiation between licensing and registration Extent of differentiation between types/classes of registration
    - Initiation of registration (e.g. automatic during/after education) Constraints imposed by supranational bodies
    - Constraints imposed by legislation outside medical regulation (e.g. privacy laws)
    - Process of re-registration
    - Possibility and process of appeal against rejection of registration
2. **Flow and quantity of applications**

- Total annual number of applications
- Annual number of applications that require above-average investigation/scrutiny
- Annual number of rejected applications and most common reasons for rejection
- Annual number of fraudulent applications
- Total number of medical professionals currently on the register %age of applications from doctors trained in other countries

3. Interaction between regulator and medical professionals

- Extent to which applicants from different countries/origin are treated differently from national applicants
- Procedures/materials to verify applicant identity and credentials Mode of registration (on-line, written, physical appearance)

Revalidation / competence assurance / recertification

1. Purpose
    - Extent of involvement with quality improvement
2. Assessment process
    - Characteristics of process
    - Tools used to assess performance Evidence required for revalidation
    - Extent to which revalidation applies to all doctors or is limited to certain groups
    - Procedures to assess integrity of evidence
    - Consequences for doctors not meeting revalidation requirements (e.g. impact on registration)

4**. Standards & Ethics**

1. Content
    - Main pillars of standards
    - Values underlying the standards
2. Legal basis for standards and process
    - Ways in which standards are assessed
    - Extent to which doctors actively seek guidance on their expected performance
    - Ways in which guidance is kept up-to-date (i.e. through public consultation or as a "closed" process)

5**. Fitness to Practice (FTP) and related disciplinary procedures and sanctions**

1. Content / substantive characteristics
    - Objective of FTP (e.g. deterrence or education/persuasion) Naming / definition of FTP
2. FTP minimum standards / requirements
    - Relation of FTP standards to civil/criminal law Procedures to verify FTP
    - Nature/type of possible sanctions if minimum requirements are not met
3. Flow / quantity of FTP procedures
    - Type of complaints
    - Characteristics of procedure for investigating complaints Annual number of complaints

- Annual number of complaints that are dismissed vs. followed up Annual number of complaints leading to panel hearings
- Annual number of complaints leading to disciplinary action
- Annual number of doctors struck off the register Average length (duration) of hearings

6. **Medical Education**

1. Regulation
    - Governance/regulation of medical education through medically oriented regulators
    - Governance/regulation of medical education through educationally oriented regulators
2. Quality assurance
    - Inspection (type of inspection, which regulator, how often)
    - Extent to which quality standards for medical education are explicit and public
    - Penalties and implications of violations of minimum quality levels
3. Funding
    - Payers
    - Annual total cost of medical education
    - Annual total cost of regulation of medical education
4. Education trajectory
    - Different stages in education (e.g. under- and postgraduate) Average length (years) to complete each stage
    - Point at which doctors specialise
    - Extent to which education is embedded in healthcare system
    - Extent to which medical students are allowed to train overseas (if allowed: % of medical students training overseas)
5. Examination and qualification
    - ntry requirements for each of the stages Pass/fail %ages at the end of each stage
    - Extent to which communication skills and behaviour are tested Extent of language testing (in particular, English language)
    - Nature of examination (knowledge reproduction, problem solving, practical skills)

Data collection: Literature review and key informant interviews

A questionnaire based on the typology was developed and identified within each of the BRICS countries the main organizations and governmental bodies responsible for medical regulation. For most countries, key informants were interviewed within some of these organizations by telephone. In a few cases it was difficult to identify and schedule interviews with key informants and we had to rely on other contacts , for instance;

- Chairman of the academic Cell
- Vice president of National Health Council
- Member of disciplinary committee of a Medical Association
- President of Association of General and Private Medical Practitioners
- Head of the International Relations/Cooperation team of the Chamber of Doctors and Dentists

- CEO of Medical Sector NGO
- Secretary-General of the Medical Council
- WHO consultant for quality and accreditation
- Member of the Continuing Professional Development Council

In addition to the key informant interviews, information was gathered about medical regulatory systems in each of the ten countries through desk-based research, particularly looking at information provided by relevant organisations and governmental bodies on the internet, in legal documents and in any other literature on medical regulation available online as stated below;

1. Governmental bodies on the internet

2. Legal documents

3. Any other literature on medical regulation

It is worth noting that because of the significant variation in the type and quality of information available for each of the countries, while they all address the same research questions, and are organized with broadly the same structure, they are heterogeneous in style, length and content.

Comparative analysis

To compare medical regulation across the BRICS countries, the similarities and differences across the countries, each subsection of the typology were analyzed, and briefly examined the implications of these for the CHPP's understanding of different medical regulatory systems.

Conclusions and Recommendations

As a final step, the key messages emerging from the cross-country comparative analysis were summarized and some of the implications for the CHPP were discussed. Finally, based on the analysis and findings, recommendations for further research were provided.

5. RESULTS

The preceding chapters provide detailed descriptions of the medical regulation systems in the countries selected for this study. This Chapter synthesizes and summarizes the key findings from all five country case studies, and briefly discusses their implications for understanding medical regulation in different jurisdictions.

Structure and nature of medical regulation

A Interaction between different regulatory bodies

Findings

The countries surveyed have developed a number of different medical regulatory systems and, while all have departments of health, the development of standards and codes of ethics together with responsibility for the regulation of individual doctors has been devolved to other organizations. These range from a unitary state authorised body such as the Health Professions Council of South Africa (HPCSA), through to the de-centralised polycentric Chinese and Russian systems where regulation is the prerogative of, respectively, the provincial Official Colleges of Doctors, and the regional medical associations*).* Unsurprisingly, the extent to which medical regulation is devolved from national to regional and even local regulatory bodies reflects the structure of the state itself and the form of devolution that has developed. Thus responsibility for medical regulation in India is shared between the Medical Council of India (MCI) and the states' own medical councils.

Furthermore, countries also differ in the extent of self-regulation. The enforcement of medical regulation in Russia is not only devolved to the *Länder* level, but also delegated to doctors' self administration.

The extent to which regulation is combined with representation again varies. In Brazil the medical council also represents the doctors and has considerable dominance while the Medical Council of India and Health Professions Council of South Africa (and its constituent professional boards) are solely statutory regulators, representation being the function of, Indian Medical Association and South African Medical Associations.

B Purpose of Medical Regulation

Findings

The medical regulatory organizations in the countries surveyed set as their primary objectives a combination of registering/licensing medical practitioners, setting standards for the profession, promoting best practice and patient safety, promoting fair access to healthcare and regulating medical education. There are some local variations. The Chinese Medical Council has responsibility for Chinese traditional medicine, reflecting the practice of native medicine in the country. In devolved systems the bodies that represent groupings of provincial medical associations, such as the central General Council of Official Colleges of Doctors in Russia, may have some additional regulatory responsibilities in respect of their organizational memberships.

Purpose may also be driven by circumstances. In Brazil, the relatively low rate of pay accorded to public sector doctors has led some to charge or solicit bonus payments directly from patients. This is considered a major disciplinary offence - however, it remains common. In South Africa the experience of apartheid has influenced regulatory objectives with a focus on equal medical treatment irrespective of race.

C Values within medical regulation

Findings

Values can be stated or implied. If explicit they may be expounded in legislation or set out within codes of ethics. As with regulatory purpose, there are a set of core values to which most regulators subscribe. They are expressed however in a multitude of different ways. Most can be grouped, however, into those relating to respect for patients, for scientific knowledge and for colleagues. For instance, the Russian doctors' code, requires doctors: to preserve and enhance the trust between doctors and patients; to ensure, in the interest of the whole population, the quality of doctors work; to preserve the freedom and the reputation of the medical profession; to encourage worthy behaviour and to prevent unworthy behaviour of doctors. There are a few additional values arising out of culture or tradition. In South Africa there is a strong emphasis on education as means of protecting the public.

D Funding Arrangements

Findings

Funding for medical regulation comes from the state, from medical associations, medical schools, and individual doctors and complainants. The typical model is for the state not to recover expenditures on medical regulation incurred directly by government departments, but for medical associations to cover their costs for all their services including regulation from their members, individual doctors. This may consist of a flat fee or a flat fee plus a percentage of earnings. The problem is that medical regulation is rarely the prerogative of a single dedicated regulatory body. (Possibly the Health Professions Council of South Africa is the nearest thing to a dedicated unitary regulatory body in the countries surveyed here.) Medical associations such as those in Brazil and Russia do not distinguish the amounts to be allocated to different purposes and in the case of the latter the purposes include the provision of pensions for doctors in retirement.

Registration Process and Requirements

Registration and licensing process

Findings

In all studied countries, registration with a medical regulatory body is a formal requirement before medical doctors start practicing. The only exceptions are a small number of autonomous Russian regions where medical graduates are not required to register before starting practicing medicine.

In most of the countries in this study, medical regulatory authorities do not formally distinguish between registration and licensing processes, and registration alone may be sufficient to entitle doctors to practice. In Russia, however, registration and licensing are separate. A two stage process is to be found in Russia; doctors first need to obtain the license to practice issued by authorities and later register with the local chamber of doctors. The distribution of responsibility between two regulators in Russia, although a formal requirement, does not in practice have significant implications for the process of registering doctors in those countries.

From the perspective of medical regulation, the more interesting aspect is the centralization versus decentralization of the regulatory process; the countries in this study represent either one or the other model. In Russia, and China doctors need to register with the regional office, in the province/geographical area where they intend to practice, although their license may be valid for the whole country. In other countries such as India, South Africa and Brazil, one centralized registration office exists serving all doctors wishing to practice medicine in these countries.

Another variation between analyzed countries is in relation to the types of registration granted by registration bodies. In some countries, such as Russia and China, doctors are granted a full license for life. In other countries, registration is either renewable or various types of licenses are granted depending on the seniority, knowledge and skills of the applicant. More details about variations in the type of registrations are presented in table 1

Table 1 : Type of registration/licenses

Country	Type of registration / licences
Brazil	Provisional and full registration, limited or temporary
Russia	Full for life – compulsory in most – but not all - autonomous
India	Depending on qualifications: provisional registration (valid for one year only) and a full registration. Renewal after five years in few states
China	Depending on qualifications: provisional, basic medical, basic
SA	Six main registration categories: student, intern, public service, supervised practice, education and independent practice.

There are also differences between the compulsory fee imposed on doctors for the registration process and for remaining on the register of medical doctors. In Russia, doctors are obliged to pay annual membership fees based on their earnings. In South Africa, doctors have the possibility to voluntarily erase from the medical register and do not pay an annual fee if a practitioner does not intend to practice their profession for a given period of time. In China, Brazil and India, doctors pay for registration and to retain a medical practitioner name on the register.

Similarly, obtaining the total number of doctors registered in the studied countries also proved challenging, and information on some countries like China and Russia can be only estimated. Furthermore, in many countries number of registered doctors does not always equal with the number of practicing doctors. For that reason, countries such as South Africa and Russia keep two types of registers; first one being a general register listing all doctors allowed to practice medicine, and a second register of practicing medical individuals (either in public or private medical practice).

Finally, some countries also collect data on the number and country of training of overseas doctors registered within their national medical regulatory system. However, these data are not always collected in a systematic way in the countries is analyzed here (table 2).

	Brazil	Russia	India	China	South Africa
Annual number of applications	24000	18000	32000	50000	18000
Total Number of registered Doctors per 1000 population	1.86	50	8	1.93	7.6
Percentage of Doctors trained Abroad	5-7%	<1%	3-5%	NA	15-16%

Source :International Society for Pharmaco-Economics and Outcomes Research (ISPOR) – News Across Asia

Interactions between regulator and medical professionals

Findings

Conditions to be granted a license to practice medicine are relatively similar across all analyzed countries. In general, applicants have to meet the following conditions:

- Be a citizen of the country where they apply for a license (or EEA national in the case of European countries)
- Have full entitlements to public rights;
- Have a medical university (or equivalent) degree;
- Be of professional good standing, and;
- Pay a registration fee.

Some countries impose additional requirements. For example, doctors registering in South Africa and India need to produce a document certifying their residence in the area of the relevant regional registration authority, whereas in Russia in order to be granted permanent registration doctors need to pass a national medical exam.

Within the EU, community law formally prohibits imposing any additional requirements on EU candidates moving to another member state, including language testing. However, in Russia doctors are required to sign a declaration stating that they possess a level of language that would allow them to practice medicine in that country, or pass a language test during the recruitment process.

Revalidation / Competence assurance / Re-certification

Findings

None of the countries we examined have a formal system for revalidation similar to the one being developed in the UK although some have a form of re-registration. These include Russia and Brazil. Only in China is some form of revalidation (recertification) required, although there are no direct sanctions if a doctor does not get recertified.

In India, re-registration requirements vary by state, with some states (e.g. Delhi, Maharashtra) issuing registrations for only a stipulated period of time (generally 5 years) with the requirement to renew thereafter. Although renewal is purely an administrative procedure.

South Africa is currently developing proposals for a revalidation system. In Brazil and India, the proposed system would use a points system, and be tied explicitly to Continuing Medical Education related activities.

Standards & Ethics

Content

Findings

All the surveyed countries have a code of medical ethics. These may be established by act of parliament or ministerial decree after consultation with the medical profession (Russia, China and Brazil) or developed and instated by a national medical association - sometimes as a template for regional associations (India and South Africa). In China the regional chambers of doctors set their own individual codes based on the nationally developed Muster

The standards contained therein are detailed in the country reports but include sections on the imperative to preserve life and health and other duties to patients, dealings with colleagues and the public or society at large. Many also contain standards in respect of special interventions relating to HIV, abortion, organ donation, genetics, CPD, and even adoption. Most include definitions of malpractice and set out the potential disciplinary procedures to be faced.

Legal basis for standards

Findings

Standards may be fully codified in a dedicated act of parliament or decree (China) but more frequently are developed by national or regional medical associations/ councils. These associations/councils are usually brought into being by statute and thus have quasi-judicial status in terms of monitoring and disciplining their members (India and South Africa). Some go further. The Russian disciplinary panel has the formal status and powers of a high court of the federal republic. All standards have some sort of statutory framework.

Although this was not an attitudinal survey the informants were asked in interview for their opinion of the extent to which the medical profession seeks advice on standards and other matters from their regulator as opposed to merely viewing regulation as a policing operation. There were few responses but of those who did answer both the Brazil and the Health Professions Council of South Africa were seen as supportive and organisations from which doctors would actively seek advice. The former is of course effectively an Association of Doctors while the latter, although a statutory regulator, puts a good deal of effort into its educative function.

Fitness to practice (FTP) and Related Disciplinary Procedures and Sanctions :

Content / substantive characteristics

Findings

While the term fitness to practice (FTP) is common in the Western medical regulatory system, similar (but not necessarily identical) regulation appears under different names in other countries. For example, in Brazil, this type of regulation is referred to as "Professional liability", while in Russia at least two procedures would fall under the FTP label, the Procedures under the professional code used to enforce the professional code, and a procedure by the *Länder* authorities to revoke the license.

Although all countries have disciplinary procedures, there is substantial variation with respect to the structure of the bodies responsible. In some countries, there is only one organization handling FTP. For example, in India by the Medical Council of India In other countries, parallel tracks exist. In Russia and China, there are procedures under the professional code as well as under federal licensing law.

Perhaps a more common distinction is at geographic level. In Brazil, FTP procedures can be at national or local level. In China, a hierarchy exists, where procedures start at the hospital level, and may be escalated to regional association level with the possibility of appealing at the national level to the Supreme Medical Disciplinary Board

In South Africa the definition of proscribed behavior is rather broad. This is because in principle doctors could be subject to a disciplinary hearing for any behavior in breach of the code of ethics or other regulatory requirement or for breaching their own chamber's rules.

Table compares the different types of sanctions (shown as "X") that can be imposed in each of the BRICS Countries Table 3 shows that all countries have the option of suspending or removing the doctor from the register. Warnings and admonitions occur in most countries as well, but only In Russia the regulators can issue an admonition and fine.

	Warning	Admonition	Suspension	Removal	Fine
Brazil	X		X	X	
Russia	X	X	X	X	X
India			X	X	
China			X	X	
South Africa	X			X	

Table 3 : Type of sanctions

Flow / Quantity of FTP procedures

Findings

Table 4 shows, for those countries where data were available: how many complaints were issued, how many were dismissed, and how many eventually led to disciplinary action.

	Period	Received	Dismissed	Final Judgment
India	2010-11	1688	810	204
South Africa	2010-11	2628	592	210
Brazil	2010-11	705	542	20

Table 4 : Status of Complaints

The table shows a wide variation of the number of cases resulting in a formal judgement. In particular, the ratio of judgement to cases received is much smaller.

Medical Education

Regulation and Quality Assurance

Findings

All countries examined here have some structures in place to regulate and/or quality assure medical education. However, the bodies responsible for these functions vary from country to country. While in some (India, South Africa) the formal regulation of medical education is primarily the remit of the medical regulatory body, in others responsibilities are shared between medical councils, local authorities, and ministries or health and/or education (China, Russia and Brazil). Regulatory and quality assurance activities in these countries included: setting of curricula, administering entry exams, issuing degrees, conducting inspections of and issuing accreditations to medical schools, and other duties.

The evolution of medical education regulation and quality assurance is at different stages in some of the countries, and faces different challenges. In Brazil, for example, one of the key concerns regarding the regulation of medical education is that many new private medical schools were started by professionals who are members of the regulatory body, thus compromising the transparency and reliability of regulatory and quality assurance processes. In Russia, there are growing calls – including from international bodies such as the WHO – to centralise some of the functions of medical education regulation, such as the setting of curricula which is still the preserve of individual medical schools.

Funding

Findings

In most of the countries in this study, medical education is financed primarily by the state, although in some, students are required to pay for some form of tuition

In a some countries, most notably India and to a lesser extent China, private medical schools pose somewhat of a challenge for regulation and quality assurance. While private medical schools do not typically receive any public funds (and are primarily funded through tuition fees), the regulation of their standards and quality is a matter of public interest and concerns about the ability of statutory bodies to do this effectively are prevalent.

Education trajectory

Findings

While there is some variation across the countries examined here, the general characteristics of the trajectory of medical students are broadly similar. In all countries, *undergraduate* medical education consists of both academic and practical training, with the amount and time of initiation of clinical practice training during the undergraduate years being the element that varies the most. For example, in Russia, students embark on clinical practice training, based in hospital, between the 3rd and 5th years of education. In India the Clinical Exposure is as early as in the first year of their Undergraduate curriculum. In Brazil and China, clinical practice training takes place only towards the Final. In all countries students have to complete work placements/internships/rotations in hospitals, which are often one year in length (plus two years of community service in South Africa One year in India), as one of the final requirements of their degrees. The length of specialisation also varies across the different countries (and disciplines), ranging from between 2-6 years.

The above indicates that in all the countries we examined, medical students are exposed to clinical practice and the healthcare system (primarily through internships and rotations in hospitals) at some stage during their training. The extent of this, of course, varies from country to country. India is a notable example of a medical education system that exposes its students to the healthcare system at various stages and in different ways: in addition to the compulsory work placements at the end of the undergraduate training, medical students have to complete a Community posting between the 1st and 3rd years, and a three-month rural internship either prior to registration. In Brazil, on the other hand, there is a drive towards a reform of the medical education curriculum that would give a much stronger community focus, and experience in providing clinical care from an earlier stage in medical education, although questions remain about the medical schools' ability to implement and deliver these reforms.

In terms of Continuing Professional Development, in most countries this is part of the medical code of practice, but the organisations that promote CPD vary from country to country. In Russia and China, for example, CPD is one of the main areas of activity of the provincial medical colleges, or the regional chamber of doctors, which often provide training courses and related services. In others, such as South Africa, standards and the promotion of CPD is done primarily by the central medical council/organisation, which randomly audits about 10% of all doctors every year to check on their compliance with the South African CPD requirements. However, other bodies such as ministries and scientific societies are also involved. In Brazil, the regulation or promotion of CPD is rudimentary although talks of a system of CPD are quite advanced. The proposed system, administered by the Medical Council of India, would be based on credits, to be accumulated year-on-year, to ensure that training is kept up to date. There are concerns, however, regarding the country's capacity to implement such a system in practice.

Examinations and qualifications

Findings

There is variability in the examination requirements of medical degrees in the other countries examined in this report. Entry to medical school is broadly divided into two main categories: it is either determined by school leaving averages (China, South Africa), or by specific university entry exams (Brazil, Russia and India). In Brazil some schools apply a mixture of both systems. In South Africa, other requirements also influence admissions to medical schools, for example knowledge of an African language and English as a second language.

There is slightly more variability in terms of exit exams from undergraduate training, and admissions/exit exams for specialist education. For example in South Africa and Russia, students take exams marking the end of their undergraduate training, in addition to exams at the end of their specialist education. The undergraduate exit exam in South Africa also explicitly includes an ethics component. In Russia and China, even though exams marking the end of undergraduate medical education should include a theory and a practice element, limited resources means that currently the practice element in assessments is minimal. Clinical Competencies assessment through clinical and practical examinations is at the core of the Examination of Indian undergraduate.

6. DISCUSSION

Medical regulatory Systems in BRICS Countries

The increasing internationalization of the medical profession raises the issue of safeguarding the practice of medicine and the use of the medical workforce. These years, medical education is showing trends that also dominate other fields of higher education. Within the framework of internationalization, globalization, and cross-border education, and driven by the development of information and communication technology as well as by pronounced migration of medical doctors, there are economic and managerial consequences such as commercialization and privatization in a variegated mix of for-profit and not-for-profit providers. Higher education has now become a trade commodity regulated by the World Trade Organization, which is not always attending to quality issues. In reaction, emphasis has arisen on quality assurance, expressed in terms of harmonization, standardization, accreditation, and mutual recognition of qualifications.

Many efforts have preceded to have a common platform for the standardization, accreditation and mutual recognition of the qualifications in European union Countries and they have proven to be largely rewarding for the region. No such effort however has been initiated for the BRICS countries.

The first step towards doing so is to understand the medical regulatory systems of these diverse countries and to proceed with the comparative analysis. The Centre for Health Policy and Planning (CHPP) has undertaken the current study for the purposes of increasing the level of understanding in the matter and identify similarities and differences between medical regulation in the India and in other similar regulatory jurisdictions which shall further help CHPP in developing the policy towards further strengthening the collaborations between the BRICS countries.

Structure and nature of medical regulation In BRICS Countries

2012, at the Sixty-fifth World Health Assembly, representatives of the BRICS countries "stressed the importance of universal health coverage as an essential instrument for the achievement of the right to health".[71] It is imperative for any such effort to be initiated commonly at the regionally diverse group as BRICS to understand the structure and the nature of the medical regulation in BRICS countries.

While the systems may appear broadly similar, the devil is in the detail. Brazilian doctors working in the public sector must register with the Medical Council while those working for private clinics do not have to register with the private sector licensor, the Ministry of Health and Population (MoHP). In China, the individual provincial colleges have their own registration requirements. There is however a good deal of awareness regarding these issues and inconsistencies do receive attention, particularly where they arise as a result of regional autonomy. For example, the Chinese and Indians are considering centralizing registration rather than leaving it to each of the provincial colleges and in Russia medical exam questions are harmonised by the Institute for Medical Exam Questions. There are a number of such coordinative organisations, such as the National Federation of Medico-Surgical and Dental Orders in South Africa. Of more concern perhaps are countries such as India where coordination between the states is poor. It should be noted that the influence of doctors on the regulatory process, and the concept of professional self-regulation, seems to be less of an issue than might be expected. This is consistent with the relatively low level of public engagement with medical regulation in some countries. Involvement of doctors in the regulation of their own behavior and the development of ethics and codes of practice varies but was only described as a major public issue in Brazil where the medical council dominates the whole regulatory system, and China where the regional chambers of doctors are responsible for developing as well as enforcing the physicians' codes of practice. However, to devolve regulatory functions to representative bodies must always risk the suspicion of conflict of interest. For instance, the vast majority of the documentary output (and one might speculate, resources and thus effort) of Russian provincial colleges appears to be heavily geared towards supporting doctors rather than the protection of patients.

Purpose of medical regulation

There is a core set of regulatory functions to which all medical regulators subscribe with few exceptions. The issue is really one of the effectiveness of the regime and its capacity and resolve to attain its stated objectives. The influence of the medical profession itself on the regulatory process is a real concern in South Africa and the failure of the Russian state to enforce its own law on doctors demanding commissions is worrying. While some of the informants interviewed for this research did indeed comment on this issue further research is needed to investigate the implementation of medical regulations in the countries surveyed.

Values within medical regulation

Most of the values set out in the preamble to legislation or in codes of ethics are stated in aspirational terms rather than possessing any instrumental orientation, which is to say that, for example with respect to patients none referred explicitly to reducing the risk of harm. In fact there seemed very little emphasis on the concept of regulation or the measurement and reduction of risk amongst all the BRICS Countries. There was therefore no evidence of any real use or understanding of some of the regulatory strategies familiar to Western regulators such as better regulation, smart regulation or risk-based regulation. Of course, rather than being indicative of a substantive difference to each others regulation in respect of aims and objectives, this may reflect cultural and linguistic differences and indeed different political imperatives.

Funding arrangements

The actual cost of medical regulation proved very difficult to capture as much of medical regulation is carried out by multi-function agencies, departments and associations. So, as an alternative, numbers of employees were requested. However, as it is difficult to separate out regulatory functions, in many cases even these were not provided or of little value as they referred to both regulatory and non-regulatory staff.

Registration Process and Requirements

Registration and licensing process

Rita Sood 2008 [72] and **Harmer et al 2013** [16] suggest there is some variation in the registration and licensing processes and requirements BRICS Countries. The differences include type of registration and length of validity, bodies responsible for managing registration and overseeing the registration process, and their level of authority. The study raises a number of issues around licensing and registration.

First, management of the registration process is more consistent and possibly easier to control in countries with centralised regulatory structures, such as India and South Africa. Integrity is also maintained in systems where regional authorities are responsible solely for the administration and implementation of national strategies (for example in Brazil). However, in countries where regional regulatory authorities have greater autonomy, such as Russia and China, it is more difficult to have internal (national) consistency between regions. The more independent role of regional associations in establishing and applying their own regulations means that regulatory requirements can vary significantly within a single country.

Assessing medical qualifications can be also more complex in the case of countries with large numbers of individuals unlawfully practicing medicine, most notably India and China. In these countries, it is estimated that the number of individuals practicing medicine without a formal qualification is nearly equal to the number of officially qualified and recognized doctors suggesting regulations may not be applied with the same vigor as they are in the other countries.

An important aspect that differentiates medical regulatory models analyzed in this study also relates to the requirement (or lack of a requirement) to re-register or renew a registration or license. In many countries, once a registration or license is granted the doctor remains on the register as long as the appropriate fees are paid – which may mean they can remain on the register for life. It means that the medical regulatory authorities have only limited oversight of doctors on the register and may have little knowledge of the extent to which qualifications and skills are updated.

Finally, as contemplated by **Kickbusch I et al** [19] an important factor when analyzing medical registration and licensing is the issue of the real purpose of registration. In countries such as Russia and Brazil, registration entitles registrants to additional benefits (for example pensions, legal advice regarding complaints and Continuous Professional Development (CPD) activities). For that reason, the benefits of registration with a medical authority may be expressed to a great extent in terms of benefit to the doctor in contrast to the other BRICS Countries, where the primary objective of medical registration is to protect patients and ensure compliance with standards.

Flow and Quantity of Applications

Most countries have some type of medical register, thus it is possible to provide or estimate the total number of medical doctors registered, even when data is not collected in a systematic way. On the other hand, there is less information on the number of annual applications and in most countries these numbers can only be estimated. A possible implication of this finding is that medical authorities have limited knowledge about the flows and stock of

medical doctors, and as a consequence have restricted abilities to effectively plan for their national healthcare services provision.

Interactions between regulator and medical professionals

As mentioned by **Creswell J et al** [25], the conditions for award of a medical licence are broadly similar across the countries in this study, including for doctors trained overseas. It is interesting to note that in contrast , some of the countries analysed in this study (such as India and Brazil) can be called "emigration" countries as they report higher numbers of doctors emigrating from them than immigrating to them. Other countries, such as Russia and indeed South Africa are unable to meet the demand for doctors so rely on recruiting from overseas. The management of the recruitment and assessment processes for doctors that have qualified abroad in the countries studied present a number of challenges and medical authorities could potentially benefit from sharing their experiences.

Revalidation / competence assurance / recertification

Mujica OJ et al [27] points out the Revalidation is not widespread across the BRICS countries, although interestingly in some the issue is increasing in importance on the policy agenda as countries consider introducing similar systems in the future. For most countries it is difficult to assess how advanced the development of such systems is, or how long full implementation would take.

It is not clear why revalidation is not widely established. The costs associated with the implementation of revalidation may be high, but it could be argued that revalidation could prevent certain (costly) fitness to practise (FTP) procedures and ensure patient safety.

Standards & Ethics

Content

Fan VY et al [31] writes that the content of the codes follows a relatively uniform pattern with the exception of religion and special treatments. If research being carried out elsewhere suggests that the details of regulation such as the content of the doctor's home country code of ethics affects their perceptions of their duties when employed in other domains then a detailed line by line comparison may be useful.

Legal basis for standards

In South Africa the Council produces the standards and also assesses them leading our informant to comment, "while the sentiments expressed in this document are worthy, this is so far removed from the reality of medical practice in Country today. ...The regulation of commercial activities by doctors is particularly poorly implemented."

So while all the codes are either statutory or instated by a statutorily authorised body, perhaps the real question is the extent to which codes of practice – and indeed regulations as a whole – are applied, a question a follow on research project may want to address.

In terms of developing the code there was no evidence of any requirement for periodic review except in Russia and no formal consultation processes were evident although it should be noted that surveying each individual regional and local medical association was beyond the scope of this project.

Fitness to practise (FTP) and related disciplinary procedures and sanctions

Content / substantive characteristics

David Reissner while contributing a chapter in **Dale and Appelbe's Pharmacy and Medicines Law, 2013 Book** FTP, or disciplinary procedures, exist across all BRICS countries, and makes these countries to that extent comparable to the Western world. However, local definitions of what is covered by FTP can vary greatly.[73]

Flow / quantity of FTP procedures

Unfortunately, the researchers were only able to retrieve data on the flow and quantity of FTP procedures for a limited set of countries. This in itself is interesting, as one would expect regulators would maintain and publish records on matters such as disciplinary procedures. The figures available reveal an important point – the chance of a formal judgment after a complaint has been received can vary greatly.

Medical Education

Regulation and Quality Assurance

WHO Director-General in his address during the first meeting of BRICS health ministers at **Beijing, China, July 11, 2011** [50] contemplated that the regulation and quality assurance of medical education appeared to be a relatively uncontroversial issue in most of the countries. With the notable exceptions of China, which faces distinct challenges in this area, in other countries the regulation and quality assurance of medical education did not seem to raise particular concerns. It is apparent from our research that the countries examined here have different approaches towards the regulation and quality assurance of medical education but, unlike other areas of medical regulation, there is little sense of growing international convergence in this area, or of a need for such convergence.

Funding

The data on funding for medical education in the BRICS countries examined here is at best patchy. There is limited information on issues that could be of interest to the CHPP, such as the cost per student of medical education, or the cost of the regulation of medical education and how this is met. In light of this, it is difficult to assess the impact of medical education funding on medical education regulation. Nevertheless, the research shed light on one particular challenge facing some of the countries studied, namely the issue of the regulation and quality assurance of private medical schools.

Education trajectory

In spite of some variation, the formal structure of undergraduate and specialist medical education in these countries is relatively similar overall. The main differences are likely to reside in the resources (material, financial and human) available for medical education in each of these countries, but this was beyond the scope of the present study. An interesting question to emerge is the extent to which the differences in the education trajectories, and in particular the ways in which medical students are exposed to clinical practice and to the healthcare system, shapes their understanding of and relationship with the regulation of the medical profession. As with many other aspects of doctors' experiences of medical regulation throughout their careers in the different countries examined here, this question would need to be explored through research looking at doctors' perceptions directly.

However, it is worth noting that in a number of the countries examined here (most notably South Africa and India, but also Brazil), there is ongoing debate about the way in which medical education should be reformed in order to better prepare doctors to practise, or to adjust to the current situation in that particular country (for example in South Africa where there is a growing focus on community-based medicine and changing clinical exposure due to the increasing prevalence of HIV). To the extent that the medical regulator in these different countries has a remit in setting the curriculum or assessing the quality of medical education, they will be involved in this debate.

The divergence in the CPD systems in the BRICS countries in this report is also of great interest. This issue appears to be increasing in importance on the policy agenda in many countries. Our research suggests that the extent to which CPD is rooted within the regulatory structures of the medical field varies significantly between the countries examined. South Africa is a notable case in which the debate on CPD is highly advanced and systems to ensure CPD among professionals have been developed and implemented. While the implications of this are uncertain, it is possible that the prominence of CPD in the different countries to some extent shapes doctors' perceptions of and attitudes towards it.

Examinations and qualifications

The issue of how different regulatory jurisdictions examine medical students and graduates is interesting in that it sheds light on other approaches in assessing the skills students gain. Of particular interest to the CHPP could be the nature of examinations in Russia. This is because according to European Union regulations, medical graduates from within the region can practice in any other EU country without having to undergo admission examinations or tests. This practice can be implemented by the BRICS countries as well. Evidence on the way in which their skills are assessed during their education in their country of origin can help the CHPP understand more about their training and readiness to practice medicine once out of medical school.

All amongst BRICS countries in this study appear to be moving towards more concerted efforts to effectively test the clinical practice skills of medical students during undergraduate and specialist medical education

7. CONCLUSIONS AND RECOMMENDATIONS

In the previous chapters we discussed a broad range of aspects of medical regulation for each of the BRICS countries, and analyzed similarities and differences. Due to limitations of the data it was not always possible to compare all countries across all aspects. Nonetheless, for most of the issues examined in this study we were able to make comparisons across at least the majority of countries. This chapter summarizes some of the key messages to emerge from the cross-country comparative analysis.

It is important to note that our analysis only relates to the BRICS countries included in this study. Therefore it would not be appropriate to generalize the conclusions that follow to medical regulation across the world.

1. In many countries medical regulation is a shared responsibility between a number of bodies, most notably regulators, ministries of health and education and professional bodies. Scientific colleges, medical schools, the judicial system and others also play a role in medical regulation in the countries included in this study.
2. The extent to which regulation is decentralized tends to reflect the extent to which state authority as a whole has been devolved.
3. There are a core set of regulatory processes which are part of the remit of all medical regulators (with few exceptions). These functions include: registering/licensing medical practitioners; setting standards for the profession; promoting best practice and patient safety; promoting Continuous Professional Development (CPD); contributing to the regulation of medical education.
4. The values of medical regulation found across the BRICS countries can be grouped into three clusters: those which are patient-focused, those which focus on scientific knowledge, and those which focus on the welfare/interests of medical professionals. These values are typically worded in aspirational rather than procedural terms.
5. Very little information is available on the costs of medical regulation. Funding typically comes from the state, from medical associations, medical schools, and individual doctors and complainants. Similarly, little is known about the implications of different types and quantity of funding and resources available to medical regulation processes and structures.
6. All the surveyed countries have a code of medical ethics. The code of medical ethics typically originates with the national medical association/Councils. For none we could not find evidence that periodic review was required. It appears the involvement of the public in the development of the code is very low;
7. It is unclear for most countries the extent to which medical professionals are aware of and familiar with their respective codes of ethics. Only for South Africa could we find evidence that the regulator places great emphasis in fully embedding ethics and standards in doctors' everyday practice.
8. All countries have formal processes to deal with doctors about whom there are fitness to practise (FTP) concerns, although the terminology used to describe these situations, and the exact processes in place, can differ substantially. The outcomes of such processes typically include admonitions, temporary suspension, or removal from the register. For about half of the countries, evidence on the number of FTP complaints, procedures and judgments was not easily obtainable. Where this information was available, it showed large variations. In particular, the chance of receiving a judgment after a complaint has been filed can differ greatly.
9. Registration is mandatory in all countries before doctors can start to practice. Only in a few autonomous regions in Russia was registration not mandatory. In most countries there is no separation between registration and licensing. There appears to be substantial variation in the degree of centralization of the registration process, and the duration of the registration (in some countries registration is automatically for life, in others it is not).
10. There appears to be a core set of requirements for registration/licensing across all countries, including being a citizen of that country, having completed a medical degree, being in good health and good professional standing, and payment of a registration fee.
11. Revalidation is mostly non-existent across the BRICS countries, with India as partial exception. In some countries there is substantial interest in the development of the revalidation process.

12. Responsibility for quality assuring medical education differs across countries, sometimes it is the sole responsibility of the medical council, sometimes it is shared with other bodies. In some countries the regulation of private medical schools is a concern.

Implications for the CHPP

This report provides a wealth of information on medical regulation in five different jurisdictions. As highlighted in the introduction to the report, this information aims to contribute to an evidence base to inform CHPP policy and practice. It may help frame and inform approaches towards active collaboration between the BRICS countries

For example, improvements in communication with other regulators could be beneficial. At present the one country may not know if a doctor who applies to practise in it has previously been removed from a register overseas. However, improved communication with other regulators is necessary but probably not sufficient condition for effective information flows. The fact is that a number of jurisdictions simply do not have central or comprehensive data about registered doctors. Awareness of such facts may assist the BRICS countries to tailor its communication with specific regulators.

Similarly, differences were found in the emphasis placed on "soft" skills, such as communication with patients during and after a doctor's training. Our research indicates that countries, with perhaps the notable exception of South Africa, have an uneven record of focusing on the soft skills of medical practitioners. This raises the issue of how best to ensure policy framing for doctors in our setup to be equipped with such skills to stand the test of internationalization

These examples provide an indication of the way in which the information presented in this study may be used to assist with policy and practice development.

Recommendations for further research

1. Extending the coverage. Our analysis and findings raise a number of questions that could be explored in future research. First, the typology developed for this study can be used as a starting point for characterising medical regulatory systems in a larger set of countries. Expanding the set of countries could enable the CHPP to develop a better and broader understanding of international approaches to medical regulation.
2. Focussing on an area of regulation. As this study was to some extent of an exploratory nature, this report used a very wide definition of medical regulation, including several areas of regulation, such as:
    - Licensing regulation;
    - FTP regulation;
    - Regulation of professional ethics and standards;
    - Implementation of medical regulation;
    - Elements of patient safety regulation.

These regulations are often implemented through different institutional arrangements. To achieve a deeper understanding, further research could focus on one of these areas only.

3. Perceptions of regulation. Important work remains to be done to better capture the attitudes and perceptions of medical professionals trained abroad towards medical regulation both in the BRICS countries we examined and within the developed world. This study provides an overview of the stated values of five medical regulatory systems. Attitudes and perceptions of doctors were outside the scope of the research.
4. Medical regulation systems – confidence levels. The current study, as specified, is primarily descriptive. Follow-on research might usefully examine the relationship of process to outcomes. For example, it may be feasible to construct a set of explicit indicators or a "medical regulation index" (similar to the World Bank's Worldwide Governance Indicators Project[163]), which could be used to estimate "confidence" levels in the

different medical regulatory systems. These indicators could be developed from both desk based research on, for example data on medical errors, and from field research, such as the attitudes of doctors to regulation, public trust in both doctors and the regulatory system, and so on.

5. Regulatory learning. An important area for further research would be to identify best practice in medical regulation in India and abroad, and whether and how best practice lessons can be transferred from one system to another. The question of the transferability of lessons is a particularly interesting one; while our own analysis suggests that there is some degree of convergence in the direction in which medical regulation is evolving in the five countries examined hence the further policies of possible common platform on similar lines of EU collaborations can be achieved.
6. Relating FTP issues to medical regulatory systems. Finally, our research could be complemented by a detailed study of FTP cases from a sample of both Indian and other BRICS qualified medical graduates, examining the extent to which characteristics of these cases can be mapped onto, or associated with, characteristics of medical regulation in a doctor's country of origin.

8. BIBLIOGRAPHY

1. "New era as South Africa joins BRICS". SouthAfrica.info. 11 April 2011. Retrieved 2 December 2012
2. China, Brazil, India and Russia are all deemed to be growth-leading countries by the BBVA: BBVA EAGLEs Annual Report (PPT). BBVA Research. 2012. Retrieved 16 April 2012.
3. Graceffo, Antonio (21 January 2011). "BRIC Becomes BRICS: Changes on the Geopolitical Chessboard". Foreign Policy Journal. Retrieved 14 April 2011
4. Blanchard, Ben and Zhou Xin (14 April 2011). "UPDATE 1-BRICS discussed global monetary reform, not yuan". Reuters Africa. Retrieved 26 April 2013
5. "South Africa joins BRIC as full member". Xinhua. 24 December 2010. Retrieved 14 April 2011.
6. Jump up □^ "BRICS countries need to further enhance coordination: Manmohan Singh". Times Of India. 12 April 2011. Retrieved 14 April 2011.
7. Jump up □^ "BRICS should coordinate in key areas of development: PM". Indian Express. 10 April 2011. Retrieved 14 April 2011
8. "World Economic Outlook". IMF. April 2013 data. Retrieved 17 April 2013.
9. "Amid BRICS' rise and 'Arab Spring', a new global order forms". Christian Science Monitor. 18 October 2011. Retrieved 20 October 2011.
10. Yahoo.com: "BRICS to launch bank, tighten Latin America ties" 11 Jul 2014
11. "Brics a force for world peace, says China". Business Day. 8 August 2012. Retrieved 9 November 2013.
12. Jump up to: □a b "Brics summit exposes the high wall between India and China". Asia Times. 2 April 2012. Retrieved 10 July 2013.
13. Jump up "BRICS – India is the biggest loser". USINPAC. 18 April 2013. Retrieved 17 June 2013
14. Building Better Global Economic BRICs. Jim O'Neill's game-changing paper on the importance of BRICs economies.
15. "BRICS AND BEYOND" - Goldman Sachs study of BRIC and N11 nations, November 23, 2007.
16. "BRICS without straw'? A systematic literature review of newly emerging economies' influence in global health Andrew Harmer, Yina Xiao, Eduardo Missoni and Fabrizio Tediosi.
17. World development indicators database. Washington: World Bank; 2013.
18. Petrie D, Tang KK. Relative health performance in BRICS over the past 20 years: the winners and losers. Bull World Health Organ. 2014;92(6):396–404.

19. Kickbusch I. BRICS' contributions to the global health agenda. Bull World Health Organ. 2014;92(6):463–464.

20. The millennium development goals: report 2013. New York: United Nations; 2013.

21. McKee M, Marten R, Balabanova D, Watt N, Huang Y, Finch AP, "BRICS' role in global health and the promotion of universal health coverage: the debate continues", Bull World Health Organ. 2014;92(6):452–453.

22. Rao KD, Petrosyan V, Araujo EC, McIntyre D. Progress towards universal health coverage in BRICS: translating healthy economic growth into better health. Bull World Health Organ. 2014;92(6):429–435.

23. Meng Q, Xu K. Progress and challenges of the rural cooperative medical scheme in China. Bull World Health Organ. 2014;92(6):447–451.

24. Kaddar M, Milstien J, Schmitt S. Impact of BRICS' investment in vaccine development on the global vaccine market. Bull World Health Organ. 2014;92(6):436–446.

25. Creswell J, Sahu S, Sachdeva KS, Ditiu L, Barreira D, Mariandyshev A, et al. Tuberculosis in BRICS: challenges and opportunities for leadership within the post-2015 agenda. Bull World Health Organ. 2014;92(6):459–460.

26. Hyder AA, Vecino-Ortiz AI. BRICS: opportunities to improve road safety. Bull World Health Organ. 2014;92(6):423–428

27. Mujica OJ, Vázquez E, Duarte EC, Cortez-Escalante JJ, Molina J, Barbosa da Silva Junior J. Socioeconomic inequalities and mortality trends in BRICS, 1990–2010. Bull World Health Organ. 2014;92(6):405–412

28. Sumner A. Where do the world's poor live? A new update. IDS working paper 393. Brighton: Institute of development studies; 2012. Available from:http://www.ids.ac.uk/files/dmfile/Wp393.pdf [cited 2014 May 9].

29. Mirelman AJ, Ozawa S, Grewal S. The economic and social benefits of childhood vaccinations in BRICS. Bull World Health Organ. 2014;92(6):454–456

30. Busan partnership for effective development co-operation [declaration]. In: Fourth High Level Forum on Aid Effectiveness; 2011 Nov 29–Dec 1; Busan, Republic of Korea. Washington: United Nations Development Programme; 2011.Available from: http://effectivecooperation.org/files/OUTCOME_DOCUMENT__FINAL_EN.pdf [cited 2014 May 9].

31. Fan VY, Grépin KA, Shen GC, Chen L. Tracking the flow of health aid from BRICS countries. Bull World Health Organ. 2014;92(6):457–458.

32. Cashwell A, Tantri A, Schmidt A, Simon G, Mistry N. BRICS in the response to neglected tropical diseases. Bull World Health Organ. 2014;92(6):461–462.

33. Powar, Krishnapratab Bhagwantrao (1995): "Higher Education in India". In Higher Education in India – in Search of Quality. Edited by Panda, S.K & Powar, K.B. Association of Indian Universities, New Delhi

34. Universal Declaration on Human Rights, United Nations, 1948

35. Development in practice, Higher Education: The Lessons of Experience states, The World Bank , Washington D.C, 1994

36. Spring J., Research on globalization and education". Review of Educational Research, June 2008 ;78(2) : 330-363

37. Agarwal, P. Indian higher education: Envisioning the future, New Delhi: Sage, 2009

38. Altbach, P.G.; Knight, J. Internationalization of higher education: Motivations and realities". In: Journal of Studies in International Education, 2007; 11(3-4) : 290-305

39. Hans De Wit , Pawan Agarwal, Mohsen Elmahdy Said, Molatlhegi T. Sehoole, Muhammad Sirozi, Global Perspectives of Higher Education, Dynamics of International Student Circulation in a Global Context, 2008, Vol II.
40. Scott, P. (Ed.). Globalization of higher education. Buckingham: Open University Press/SRHE, 1998
41. J. Enders and O. Fulton (Eds.), Higher education in a globalizing world: International trends and mutual observations , Dordrecht, Netherlands: Kluwer, 2002: 103-121.
42. Davies, J. L. Developing a Strategy for Internationalization in Universities: Towards a Conceptual Framework, In C. B. Klasek (Ed.), Bridges to the future: Strategies for internationalizing higher education , 1992: 177- 203
43. Bartell, M. Internationalization of universities: A university culture- based framework. Higher Education, 2003; 45: 43-70
44. Carnoy, M. & Rhoten, D. What does globalization mean for educational change? A comparative approach, Comparative Education Review, 2002; 46(2) :1-9
45. Knight, J.; de Wit, H. Internationalization of higher education in Asia-Pacific countries. Amsterdam: European Association for International Education, 1997.
46. Knight, J. ‚GATS, trade and higher education". London: Observatory on Borderless Education. International Institute for Educational Planning, 2003, www.iiep.unesco.org
47. Madalena Patricio, University World News titled GLOBAL: Internationalisation and medical education, March 2011
48. Ronald M. Harden, international Medical Education and Future Directions: A Global Perspective, Academic Medicine: December, 2006;81 (12 Suppl):S22–S29
49. Fred Harcleroad, Quality Assurance in Higher Education in the Twenty-First Century and the Role of the Council for Higher Education Accreditation, August 2011, Washington DC, Institute for Research and Study of Accreditation and Quality Assurance
50. 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
51. http://mciindia.org/know/mci/mci_activities.htm
52. http://mciindia.org/helpdesk/how_to_start/inspection_fees.htm.
53. http://mciindia.org/tools/ann_reports/index.htm.
54. http://www.economist.com/world/asia/displaystory.cfm?story_id=10727817
55. The MCI's Code of Ethics Regulations, 2002 sets out the standards of professional conduct, etiquette and ethics for registered medical practitioners.
56. http://mciindia.org/know/rules/rules_mbbs.htm
57. http://timesofindia.com/articleshow/2279230.cms
58. Sood, R. and Adkoli, BV (2000) Medical education in India – problems and prospects, Journal Indian Academy of Clinical Medicine 1:3.
59. http://www.hpcsa.co.za/hpcsa/default.aspx
60. http://www.hpcsa.co.za/hpcsa/default.aspx?id=152
61. http://www.hpcsa.co.za/hpcsa/default.aspx?id=158
62. http://www.hpcsa.co.za/hpcsa/default.aspx?id=275
63. http://www.hpcsa.co.za/hpcsa/default.aspx?id=298
64. "The Changing Profile of Medical Education in South Africa" by Dan J Ncayiyanadeputy vice-chancellor; University of Cape Town (http://student.bmj.com/back_issues/0900/editorials/306.html).

65. Alan Rowe and Mila García-Barbero Regulation and licensing of physicians in the WHO European Region WHO Publication 2005
66. Cons elho Regional de Medicina do Distrito Federal. (2000). Votos Selectionados: Como os Conselheiros Julgam os Processo Éticos.Brasília: Athalaia Gráfica.
67. Coutinho, Elsimar. (1996). Menstruação, A Sangria Inútil: Uma Análise da Contribuição da Menstruação para as Dores e os Sofrimentos da Mulher.São Paulo: Editora Gente
68. Li Zhen, Wang Baozhen, Zhou Yun, WHO Background discussion paper to inform the Regulatory Reform Review of China September 2007
69. http:// www.china-embassy.org/eng/zt/bps/t1001641.htm Government White paper on the medical and health services in China. Bejing 2012
70. http://www.nmec.org.cn/English/english.htm
71. Bulletin of the World Health Organization, 2014;92:452-453.
72. Rita Sood, Medical education in India , Medical Teacher , 2008, Vol. 30 (6) : 585-591
73. David Reissner, Dale and Appelbe's Pharmacy and Medicines Law, 2013