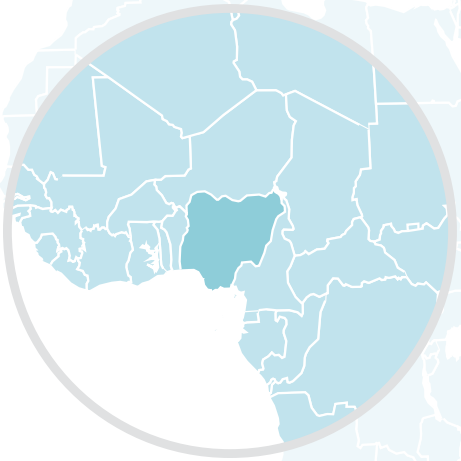
CASE STUDY | NIGERIA

SURGICAL WORKFORCE IN NIGERIA

Stock and flow of medical and dental practitioners in Nigeria, with special focus on health workforce training in Cross River state



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NIGERIA

BRAIN DRAIN TO BRAIN GAIN

Case study on the stock and flow of medical and dental practitioners in Nigeria, with special focus on health workforce training in Cross River state

1. Background

1.1 Human resources for health characteristics and challenges, Nigeria

Nigeria has one of the largest stocks of human resources for health in Africa. Yet, it is still inadequate to meet the country's needs. In 2006, an inventory of health care personnel indicated 39 210 doctors (0.3 per 1000 population), 124 629 nurses (1.03 per 1000 population), 88 796 midwives (0.67 per 1000 population), 2482 dentists (0.02 per 1000 population) and 12 072 pharmacists (0.05 per 1000 population) for the year 2004, less than the minimum recommended by the World Health Organization (WHO) *(1)*.

The main factors underlying human resources for health challenges in Nigeria include (a) insufficiently resourced and neglected health systems; (b) poor human resources planning and management practices and structures; (c) unsatisfactory working conditions characterized by heavy workloads, lack of professional autonomy, poor supervision and support, long working hours, unsafe workplaces, inadequate career structures, poor remuneration, poor access to needed supplies, tools and information, and limited or no access to professional development opportunities; and (d) internal and international migration of health workers. These challenges have contributed to inequitable distribution of the existing health workforce with lower levels of care in rural areas, with the northern parts of the country particularly disadvantaged *(2)*.

In addition to challenges related to internal human resources for health mobility and inequities, Nigeria is also one of several major health workforce-exporting countries in Africa. Recent Organisation for Economic Co-operation and Development (OECD) data identified Nigeria as the leading African source of foreign-born nurses practising in OECD countries; and one of the three leading African sources for foreign-born physicians *(3)*. Inadequate infrastructure, poor working conditions and poor compensation packages have contributed to the emigration from the country of a sizeable number of surgeons, physicians, nurses and other medical professionals. For example, health workers in Nigeria typically earn about 25% of what they would earn if they were working in North America, Europe or the Middle East *(4)*. The sustained trend in "brain drain" from the health system in Nigeria has in particular contributed to acute shortages of specialized and experienced health professionals in the country.

Related to the problem of brain drain is the problem of geographical distribution of health care professionals.

There is a disproportionate concentration of medical professionals in urban areas. While access to medical personnel is readily available in cities, rural dwellers often have to travel considerable distance in order to get treatment. Doctors and nurses are reluctant to relocate to remote areas and forest locations that offer poor communications with the rest of the country and few amenities for health professionals and their families. Urban areas in Nigeria are more attractive to health care professionals for their comparative social, cultural and professional advantages *(2)*.

1.2 Cross River state

Cross River state is situated within the Cross River basin in the south of Nigeria. Health indicators are generally poorer than for other southern Nigerian states; for example, while skilled birth attendance rates are over 75% in the southern states of Abai, Anambra, Ekti, Imo, Lagos, Ogun and Ondo, the skilled birth attendance rate for Cross River stands at only 45% *(5)*.

Cross River has 295 primary health care facilities, 15 general hospitals, 130 private hospitals and 2 tertiary health care facilities. The tertiary facilities – the University of Calabar Teaching Hospital and the Federal Neuropsychiatric Hospital, Calabar – are owned by the federal government, while the primary health care facilities and general hospitals are owned by the Cross River state government.

1.3 Human resources for health policy environment in Nigeria

In order to address human resources for health challenges and constraints and achieve targets for Nigeria, the Federal Ministry of Health in 2006 developed the National Human Resources for Health Policy, followed in 2007 by the National Human Resources for Health Strategic Plan to guide the implementation of the policy at all levels. In 2010, the National Human Resources for Health Strategic Plan was incorporated into the National Strategic Health Development Plan (2010–2015). The human resources for health policy and plan include a range of strategies, approaches and interventions aimed at improving policies, systems, capacity, structures and processes for human resources for health at both the strategic and operational levels to ensure the production and distribution of adequate numbers of appropriately skilled and motivated health workers. State ministries of health are expected to use the federal policy and plan to develop their own human resources for health strategic plans that will address state-specific human resource issues and challenges and to incorporate the plans into the state Strategic Health Development Plan. As well as developing their own human resources for health strategic plans and annual implementation plans, the state ministries of health are expected to strengthen structures, systems and capacity to implement and monitor plans and to undertake specific activities, including:

- establish a multisectoral steering committee to promote, in the area of human resources for health, integrated planning, monitoring policy implementation and systems development, and fostering best practices and cross-learning at all levels;
- establish human resources for health divisions for planning, management, training and development;
- develop systems for routine information gathering, planning, and monitoring and evaluation for human resources for health;
- maximize training intakes and output capacity for the production of essential health professionals;
- implement interventions to recruit, deploy and retain health workers.

In October 2014 The National Council of Health for Nigeria approved the National Health Workforce Registry operational guidelines for adoption by all 36 states and the Federal Capital Territory. With that approval, Nigeria joined the list of countries that have now mandated the registration of all health workers and other health workforce production data in a single registry. Bauchi and Cross River states were selected to pretest application of the National Health Workforce Registry software, supported by the WHO Human Resources for Health Project, funded by Global Affairs Canada.[1]

There are presently 14 professional regulatory bodies charged with the responsibility of regulating and

1 Formerly the Department of Foreign Affairs, Trade and Development (DFATD).

maintaining standards of training and practice for various health professionals. However, they are limited by weak structures and institutional capacities to carry out statutory functions of effective monitoring and accreditation of training institution programmes.

2. Objectives of the case study

This case study on the stock and flow of medical and dental practitioners in Nigeria, with a special focus on health workforce training, aims to document and strengthen the evidence base on health workforce migratory flows in Nigeria and discuss associated policy implications, with particular reference to health workforce training in Cross River state. It specifically aims to support the objectives of the project Brain Drain to Brain Gain: Supporting the WHO Code of Practice on International Recruitment of Health Personnel for Better Management of Health Worker Migration.

The Brain Drain to Brain Gain project itself aims to generate momentum and accelerate progress in the implementation of the WHO Global Code of Practice on the International Recruitment of Health Personnel. The Global Code was adopted by the Sixty-third World Health Assembly on 21 May 2010, with the overall aim of achieving better understanding and management of health worker migration. Member States are encouraged to publicize and implement the Global Code in collaboration with all stakeholders, to incorporate the Global Code into applicable laws and policies, and to consult with all stakeholders in the decision-making process and involve them in other activities related to the international recruitment of health personnel. The requirements of the Global Code have given the issues of effective tracking of migration flows, in the broader context of strengthened national and global human resources for health data, added impetus.

The case study has two parts:

- presentation of national-level analysis on entry, stock (exist) and exit of medical and dental practitioners, as well as identification of the stock of specialized surgical health workers in Nigeria, including specific information on Cross River state (section 4);
- mapping of all pre-entry health workforce training institutions in Cross River state and analysis of trends in admission and graduation of surgical health workers (section 5).

3. Methodology

The data forming the body of analysis of the first portion of the case study are derived from the Medical and Dental Council of Nigeria, and focus on entry, exist and exit of the surgical health workforce at federal level. The analysis in based on five categories of registers kept by the Medical and Dental Council:

- **provisional register**, comprising all new entrants licensed into the system to enable them to undertake internships;
- **temporary register**, comprising expatriates wishing to practise in Nigeria;
- **full register**, comprising statistics on licences granted to medical or dental graduates who, having been provisionally registered, satisfactorily complete training in a hospital recognized (or accredited);
- **additional qualifications register** for all existing health workers acquiring additional qualifications;
- **certificates of good conduct register** for data on health workers intending to exit the system for further study or employment.

The key methods used in accomplishing the work related to the second portion of the case study were a review of secondary data, including reports from the councils; key informant interviews at federal and state levels; primary data collection and stakeholder engagement through meetings; and a workshop in Cross River state. Basic information on the number of admission and graduates was obtained from available records of institutions.

Specifically, a listing of all federal and state government health training institutions in Cross River state was carried out. The heads of the institutions were met and their support solicited. A template for data collection was used to

extract data. Because of the time frame and the poor record keeping in some institutions, the University of Calabar Teaching Hospital and the School of Midwifery, Obudu, were unable to provide the data requested. There was no integrated system in place to keep track of the entry, exist, exit, and gaps or excesses in the health workforce.

4. Results: national-level analysis on entry, exist, and exit

4.1 Entry

Provisional registration

In 2014, a total of 3204 provisional medical certificates and 190 provisional dental certificates were issued by the Medical and Dental Council of Nigeria. Of the provisional certificates, 537 (16.8%) were granted to foreign medical graduates and 9 (4.7%) to foreign dental graduates.

A total of 466 practising licences were issued to medical and dental practitioners in Cross River state alone, of which 456 were issued to medical doctors while only 10 were issued to dentists (Table 1). Female applicants accounted for only 26% of medical and dental practitioners.

Temporary registration

From January to December 2014, 114 temporary registration applications were fully processed. Table 2 shows the specialty areas of temporary registration licences.

Regarding the origin of the applicants for temporary registration, 50% were from Asia, 29% from African countries other than Nigeria, 14% from Europe, 4% from America and 3% from other areas.

Full registration

The number of processed full registration medical and dental applications in 2014 for which full registration certificates were issued was 1779. These practitioners therefore joined the pool of practitioners that have completed medical and dental internships; their internship training completion certificates were verified and they were licensed to carry out independent medical or dental practice.

4.2 Exist

In 2014, a total of 28 139 doctors and 1375 dental surgeons were issued with practising licences, which constitutes the current total stock of 29 514 medical practitioners in Nigeria.

Overall, females constituted 33% of all licensed practitioners in 2014. Women accounted for 28% of medical doctors and 38% of dental surgeons.

TABLE 1. PRACTISING LICENCES ISSUED TO MEDICAL AND DENTAL PRACTITIONERS IN CROSS RIVER STATE, 2014

	Male	Female	Total
Medical	337	119	456
Dental	6	4	10
Total			**466**

TABLE 2. SPECIALTY AREAS OF PRACTITIONERS ISSUED WITH TEMPORARY REGISTRATION

No.	Specialty	Number
1	General surgery	20
2	Obstetrics and gynaecology	10
3	Ophthalmology	8
4	Cardiology	6
5	Emergency medicine	5
6	Orthopaedics	5
7	Anaesthesia	3
8	Dentistry	3
9	Plastic surgery	2
10	Neurosurgery	2
11	Ear, nose and throat/ otorhinolaryngology	1
12	Neurology	1
	Total	**66**

4.3 Exit

Requests for certificates of good standing[2] provide the nearest possible (proxy) indicator for exiting health professionals in Nigeria. A total of 656 registered practitioners requested certificates of good standing to go to 29 different countries as of December 2014. The countries for which most requests were submitted were the United Kingdom, Canada, South Africa, Australia, Ireland and the United Arab Emirates. In terms of region, almost half of registered practitioners requested certificates of good standing to emigrate to Europe. The number of requests by continent is shown in Table 3.

TABLE 3. DESTINATION CONTINENTS OF EXITING HEALTH PROFESSIONALS BASED ON CERTIFICATES OF GOOD STANDING ISSUED

No.	Continent	Number of requests in 2014
1	Africa	124
2	Asia	31
3	Europe	312
4	North America	131
5	Oceania	57
6	South America	1
	Total	**656**

TABLE 4. CERTIFICATES OF GOOD STANDING ISSUED 2008–2014

Year	No. of request/ letters issued
2008	624
2009	691
2010	637
2011	749
2012	864
2013	699
2014	656
Total	**4920**

2 A certificate of good standing is document providing evidence that the doctor is fit to practise and has not been found guilty of unprofessional conduct, and that there are no pending or previous disciplinary orders or criminal proceedings against the doctor.

Between 2008 and 2014 a total of 4290 requests for certificated of good standing were requested countrywide from the Medical and Dental Council of Nigeria. The trend showed significant peaks in 2011 and 2012, declining marginally in 2013 and 2014 (Table 4).

Using requests for certificates of good standing as a proxy, the attrition rate of medical practitioners from the health system in Nigeria averages 702 annually. Considered against the national stock of 29 514, this indicates that the country is losing up to 2.4% of its highly trained medical workers every year.

4.4 Specialist surgical health workforce in Nigeria

The Royal College of Surgeons of England lists the following specialties as branches of surgery: cardiothoracic surgery, general surgery, neurosurgery, oral and maxillofacial surgery, paediatric surgery, plastic surgery, trauma and orthopaedic surgery and urology *(6)*. The definition of "surgical health workforce" in this study is informed by the surgical specialties as recognized by the Royal College of Surgeons.

There were 2272 registered practitioners with specialist training in various branches of Surgery in Nigeria as of 2014 (Table 5). Of these, 1823 were in category A; 322 in category B; 123 in category C; and 3 in category D.[3] The shortages of health workers in Nigeria are even more glaring in the available surgical health workforce; out of 28 139 doctors licensed to practise in 2014, only 8.1% had specialist training in a field of surgery.

3 Category A: A Fellowship of the National Postgraduate Medical College of Nigeria or a qualification equivalent to it in content, duration and status; category B: A sub-fellowship qualification or any other qualification, not being equivalent to the qualifications in (i) or (ii) above, but definitely demonstrating that the holder has acquired further skill and knowledge in a special area, subsequent to his/her basic medical or dental degree; category C: A qualification not being equivalent to either of (i) or (ii) above, but definitely demonstrating that the holder has acquired further skill and knowledge in a special area, subsequent to his/her basic medical or dental degree; category D: A postgraduate qualification in the basic medical or clinical sciences at the level of a doctorate degree obtained after the basic medical or dental qualification. Source: Medical and Dental Council of Nigeria: Annual Statistical Report 2014.

TABLE 5. SPECIALISTS IN SURGERY IN NIGERIA AS AT DECEMBER 2014

No.	Specialty /subspecialty	Categories				Total
		Category A	Category B	Category C	Category D	
1	Surgery	1122	243	0	0	1366
2	Obstetrics & gynaecology	465	56	2	2	525
3	Anaesthesia	99	11	95	0	205
4	Orthopaedics	99	5	16	0	120
5	Neurosurgery	18	7	0	0	25
6	Cardiology	8	0	4	1	13
7	Plastic surgery	7	0	0	0	7
8	Neurology	0	0	6	0	6
9	Oral pathology	5	0	0	0	5
	Total	**1823**	**322**	**123**	**3**	**2272**

It is important to note that these data only reflect personnel that tendered their documentation (which is voluntary) with the Medical and Dental Council of Nigeria for registration as additional qualifications. As such, they are a rough indicator of total specialists in this area of the workforce in the country. Furthermore, these additional qualification certificates are registered only once and are not renewed or revalidated, and it is therefore not clear if the practitioners with additional qualifications were available for service within Nigeria in 2014.

5. Results: health workforce training in Cross River state

5.1 Mapping and analysis of pre-entry health workforce stakeholders

The institutions involved in the training of human resources for health in Cross River state are:

- University of Calabar
- University of Calabar Teaching Hospital
- School of Nursing, Calabar
- School of Nursing, Ogoja
- School of Nursing, Itigidi
- School of Midwifery, Calabar
- School of Midwifery, Moniaya
- School of Midwifery, Obudu
- College of Health Technology, Calabar.

All the training institutions identified above were included in the study. The six schools of nursing and midwifery lost their accreditation to train in 2012 due to their inability to meet the minimum standard for training by the regulatory body, the Nursing and Midwifery Council of Nigeria. Consequently the schools were barred from admitting students from 2013. In a bid to address this, the Cross River state government planned to merge the schools into one School of Nursing and Midwifery.

5.2 Training of medical doctors

A total of 508 students were admitted in the College of Medical Sciences, University of Calabar, to read Medicine and Surgery between 2010 and 2015. The number who graduated within the same period was 571. This difference reflects the higher number at admission before regulation by the Medical and Dental Council, which has approved 100 as the admission for the Medicine and Surgery programme. While the number graduating shows some fluctuation, the number admitted into the programme shows little variation over the period 2010 to 2014 (Figure 1). The number graduating yearly is expected to drop to less than 100 in the next two to three years.

5.3 Surgical workforce

Data on postgraduate training (residency) from the University of Calabar Teaching Hospital were inadequate to track trends. Available data indicated the number under training as resident doctors and the number working as specialists (consultants) in the different surgical subspecialties (Table 6). A template needs to be developed to assist in tracking the trends in numbers training and the rate of production of specialists from the institution.

Surgical services are provided at the secondary level of care by general practitioners and in some instances by trained surgeons.

5.4 Training of nurses

There are presently five institutions training nurses in Cross River state. These are the Department of Nursing Science, University of Calabar; Schools of Nursing in Ogoja, Calabar and Itigidi; and the School of Nursing, University of Calabar Teaching Hospital. The institutions vary in the annual turnover of graduates from an average of 22 from the School of Nursing, Itigidi, to 40 in the School of Nursing, University of Calabar Teaching Hospital. The average number of nurses graduating from all nursing institutions is 115 yearly, for the period 2010 to 2014. Figure 2 presents the trends in the number of nurses graduating in Cross River state.

After the planned merger of the schools of nursing, an estimated 100 students will be admitted annually. No graduating student is expected from these schools in 2016 and 2017. If the present level of production is sustained by the various institutions, the University of Calabar will produce an average of 28 nurses with BSc annually, and the School of Nursing, University of Calabar Teaching Hospital, will produce an average of 40 nurses with basic nursing training annually. Given that the state schools of nursing have had an average turnover of 80 graduates for the past five years, which is about 50% of the yearly intake in the three schools, with a proposed intake of 100 per session, the turnover is expected to be 53 graduates yearly, and that will be for two of the five projected years on the assumption that the schools will be accredited to train from the year 2015.

Based on the assumptions from available data, the current and projected trends are presented in Figure 3.

FIGURE 1. TRENDS IN NUMBERS ADMITTED AND GRADUATING IN MEDICINE AND SURGERY FROM UNIVERSITY OF CALABAR

Source: Record from College of Medical Sciences, University of Calabar.

5.5 Training of midwives

Cross River state has three institutions for the training of midwives. However, information is only available from two institutions, as desk officers in the state Ministry of Health and the School of Midwifery, Obudu, were not available to provide the required information for that school.

Based on the data obtained from the two schools, average admission for midwifery is 75 yearly for the three institutions, and the average turnover of midwives is also estimated at 75 yearly. With the proposed merger of the three schools of midwifery, the expected number for admission is set at 50 yearly. If the prevailing graduation rate of 100% is sustained, the school will be graduating approximately 50 students yearly.

5.6 Training of medical laboratory scientists

Of the 562 students admitted to read Medical Laboratory Sciences at the University of Calabar over a period of five years (2010 to 2014), 550 graduated, indicating a graduation rate of 97.9%. The trend shows a steady increase in the number of students admitted into the programme for the past five years, with the exception of a drop in 2013 (Figure 4). It is anticipated that at least 110 medical laboratory scientists will be produced yearly from the University of Calabar over the next five years.

TABLE 6. RESIDENT DOCTORS AND CONSULTANTS IN SURGERY IN THE UNIVERSITY OF CALABAR TEACHING HOSPITAL

Cadre	Residents	Consultants
Obstetricians	28	18
Surgeons	28	20
Orthopaedic surgeons	7	7
Otorhinolaryngologists	7	5
Urologists	–	4
Ophthalmologists	15	9
Dental surgeons	2	3
Anaesthesiologists	18	7

6. Discussion

6.1 Nigeria

In Nigeria, as in many countries in the region, the scarcity of data on the availability, distribution and trends in human resources for health has been a barrier to effective planning. The human resources for health data-related challenge is particularly acute in Cross River state, where there is an absence of functional mechanisms for tracking stocks and flows of health workers.

Data that have been presented in this case study on the stocks and flows of medical and dental practitioners, with acknowledged limitations, confirm the acute shortages of qualified medical and dental practitioners. Only 28 139 medical doctors serve a projected national population of 178 million, a doctor:patient ratio of 1:6325. The shortage is particularly glaring in the available surgical workforce, with only 8.6% of those licensed to practise medicine receiving surgical training. Dental services are particularly constrained in the country, with an identified dentist:patient ratio of 1:123 808. The data presented also suggest that the overall stock of medical doctors has declined substantially in Nigeria over the last decade, from an estimated 39 210 in 2004 to 28 139 in 2014, all in the context

FIGURE 2. TOTAL NUMBER OF NURSES GRADUATING FROM TRAINING INSTITUTIONS YEARLY IN CROSS RIVER STATE, NIGERIA

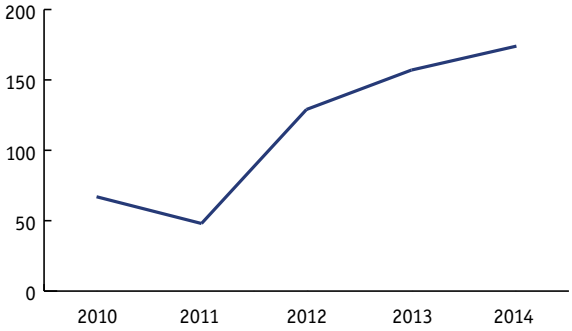
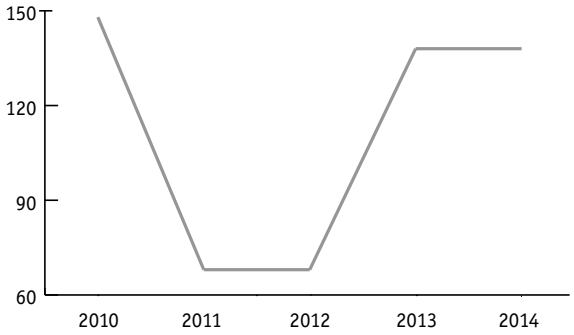
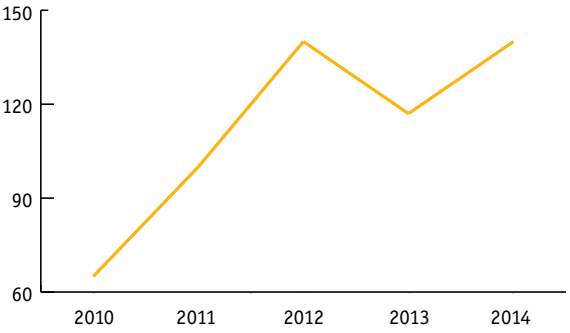


FIGURE 3. PROJECTED NUMBER OF NURSES TO BE TRAINED YEARLY IN CROSS RIVER STATE, NIGERIA



Source: Records from the five training institutions.

FIGURE 4. TRENDS IN THE NUMBER OF STUDENTS ADMITTED FOR THE MEDICAL LABORATORY SCIENCES PROGRAMME, UNIVERSITY OF CALABAR



Source: Admission record from the College of Medical Sciences, University of Calabar.

of a rapidly growing population. Notably, women remain underrepresented in the medical profession; only 28% of medical doctors in Nigeria in 2014 were female.

The rate of attrition, again mindful of data-related limitations, from the health sector in Nigeria is significant, with an annual loss of 2.4% of Nigeria's skilled health workforce. This further exacerbates existing shortages in skilled staff. The data presented also point to the importance of the European region as a destination for Nigerian medical and dental practitioners, with approximately half of the requests for certificates of good standing targeted towards Europe.

The continual drain of health workers from Nigeria, combined with decades of harsh economic policies, has led to chronically underfunded health systems. Health workers are paid meagre salaries, often work in insecure areas, and have heavy workloads, yet they lack the most basic resources, including drugs and medical equipment, and have little chance of career advancement. Doctors complain of "brain waste", and seek opportunities for professional development in countries with better medical infrastructure. Yet, scores of Nigerian doctors currently overseas are willing to return to Nigeria, provided appropriate employment opportunities are available. Unfortunately, not only are such opportunities very scarce, there is growing unemployment among registered doctors in Nigeria. Furthermore, there is little enthusiasm among locally based senior medical staff to create openings for overseas-based doctors. Also, accreditation processes tend to be based on the principle of reciprocity, thus disadvantaging overseas-based doctors willing to return.

6.2 Health workforce training in Cross River state

Addressing human resources for health data-related challenges in Cross River state is of paramount importance. There are insufficient data to project the number of surgeons to be trained. Additionally, the training of resident doctors does not have a strict timeline, though it is guided by curricula from the national and West African postgraduate colleges. A format for collecting these data needs to be set up and a desk officer in the University of Calabar Teaching Hospital appointed to keep track of the entry, exist and exit of the health workforce in the institution, particularly for surgery.

It is worth noting that surgical services are provided in some secondary health facilities in addition to the University of Calabar Teaching Hospital. While resident and consultant surgeons deliver services in the University of Calabar Teaching Hospital, surgical services are also provided by general practitioners in secondary facilities in both general hospitals and private hospitals and clinics. The competences of general practitioners need to be reviewed, as the quality of surgical services depends to a large extent on the skills and availability of resources. Most of the surgical facilities are urban based, while the majority of general hospitals are rural based. Access to quality surgical care is severely limited by this maldistribution of service delivery points.

Loss of accreditation by the state schools of nursing and midwifery has negatively impacted the production of nurses and midwives. Consequently, production of nurses will drop by 54% by 2016 and that of midwives will be stalled until restoration of the accreditation of the schools owned by the Cross River state government. The planned merger of the schools by the state government will further reduce the production of nurses and midwives, even after restoration of accreditation of the schools. Restoring accreditation for the schools is critical, particularly for midwifery training, as most of the primary health care facilities have no midwives. In the interim there is an urgent need to recruit midwives from training institutions from other states, and government should ensure accreditation of the schools in the present year. Improvement in the infrastructure and provision of adequate numbers of qualified trainers will increase the chance of the regulatory body approving admission of higher numbers of trainees for training in the various institutions.

While the number of graduates in medical laboratory sciences has shown an increase over the years, the number of medical doctors produced in Cross River state is dwindling. With the regulation by the Medical and Dental Council of Nigeria, the number graduating will be reduced further in the next few years.

7. Recommendations and conclusions

The following recommendations are made to address the human resource challenges in the health sector in Nigeria and in particular in Cross River state:

- The two main regulatory bodies do not have structures at the state level. As part of its support to systems strengthening, the Brain Drain to Brain Gain project should work with relevant bodies to set up local structures to ease the process of licensure and tracking of their members at state level.

- Technical support should be provided to regulatory bodies to put in place mechanisms that are capable of tracking exits of health workers beyond the current reliance on certificates of good standing. Registers of the exiting health workforce should therefore capture migrating, retiring and deceased health workers, with data to be updated quarterly.

- Immediate technical support to the Cross River state Ministry of Health is required to functionalize human resources for health databases and tracking mechanisms of personnel in the public and private sectors in the state. Such support should first take stock of what has been done by other development partners and seek to build upon structures currently in place, avoiding the creation of parallel mechanisms.

- Human resources for health tracking and data management systems should be set up at the state ministries of health and linked to all the training institutions and service delivery points, including the private sector, to facilitate human resources for health planning.

- There is an urgent need to restore accreditation of the three schools of nursing, which have seen a halt in the training of midwives.

- While efforts should be made to ensure that training institutions maintain minimum standards for training in the short term, additional resources are needed for infrastructural and human capacity development in the longer term.

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