HRH SA 2030

Human Resources for Health South Africa 2030

Draft HR Strategy for the Health Sector: 2012/13 – 2016/17

Consultation Document

August 2011

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Human Resources for Health SA 2030

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Draft HR Strategy for the Health Sector: 2012/13 – 2016/17

1. PREAMBLE

The future character and culture of the South Africa health sector in 2030 will be determined by decisions and actions taken in the next five years. The claim that human resources are the most critical resource in the delivery of health services has to be borne out in succinct and coherent policy and practice. The investment that has to be made and sustained in developing the human resource capacity for health is substantial and every error or failure to act appropriately can take many years to rectify.

The process of developing a five year strategy, and implementing it, must unleash the huge potential of people working in the health sector. Many health cadres and workers, academics, managers, service practitioners, in the public and private sectors, have ideas on ways to improve Human Resources for Health and health outcomes. It is necessary to harness these ideas and transform them into action and a new Human Resources for Health culture and practice for 2030.

There are many existing policy and research documents and plans which provide insight and make recommendations for the way forward for Human Resources for Health in South Africa. This *Draft HR Strategy* has been developed through reviewing these policy and research reports and consolidating them in consultation with key informants. Health workforce planning is an iterative and complex process and joint decision-making by all stakeholders is essential. The *final HR Strategy* should be a 'living document' which develops and is refined on an ongoing basis, through evidence and experience, and improvements in which are reflected in Annual Performance Plans.

The approach to the HR strategy development process was set by the Director General in the following statement on May 5th 2011 at the National Health Council: *"We need to review what we have done and the impact. We need to identify problems, and what to do. We need to be bold and affirmative and provide solutions with an emphasis on strengthening human resources* (*to meet service demand) for the immediate future, and medium term. The introduction of new financing mechanisms, such as NHI, will demand a strong human resource capacity for the health sector."* The Director General emphasised the need for a strategy and process that would enable the work of the provincial departments of health.

Despite the consultation that has already occurred in reaching this point a range of issues requires discussion and decisions before this *Draft* HR Strategy can be finalised and adopted. These include issues of institutional capacity to scale up and meet future staffing needs, the model of skills mix (nurse based model), the scaling up and strengthening of the teaching and training environment, the need for greater equity and access to health professionals (particularly in rural areas), the need to improve quality (not just clinical knowledge and skills but also attitudes and behaviours which enable delivery with care and compassion) ,the need to deliver in a more efficient way (more service at a lower cost) and the need to impact on health outcomes and to measure these improvements.

2. EXECUTIVE SUMMARY

2.1. THE PROCESS FOR DEVELOPING THE DRAFT HR STRATEGY

In May 2011, the Director General for Health Ms Malebona Matsoso, initiated a process to develop a *Draft* HR Strategy. The process involved gathering information from key informants, collecting and reviewing policy documents, research and reports on Human Resources for Health in South Africa. The aim of the process was to develop an HR Strategy which is based on evidence and reflects the views of role players and stakeholders.

The consultation process from May 2011 to July 2011 involved establishing relevant structures in NDoH, consulting with provincial departments of health, structures in the NDoH, key national Health Consultative Forum partners, academics involved in education and training, other Government Departments, and reviewing international experience. A number of discussion documents with annexures of detail have been produced as part of this process.

Issues affecting HRH in South Africa were analysed as themes. These themes included: sectoral analysis by professional category and the costs, skills mix, level of human resources, equity and maldistribution, factors affecting shortages, provincial HR and STP plans and their use in workforce planning, the re engineered PHC approach and its impact on HRH, retention and recruitment issues, management and leadership, registrars, Academic Health Complexes, Community Health Workers and Mid Level Workers, gaps and targets for human resources, professional councils and bodies, research and innovation in the health sciences, and previous policy and evaluations. This Draft HR Strategy document provides a distillation of the ideas arising from the review of themes, followed by recommended strategic priorities and interventions, and forecast of modeling of the future requirement of the professions.

2.2. THE ECONOMIC CONTEXT

The development of the *Draft* HR Strategy is located in an economic context of 3.5% growth, the realisation that Government has competing demands and that significant increase in resources is not likely. Proposals to resource the HR Strategy include improved use of resources through changing staff mix for the long term, improving productivity, and investigating collaboration with the private sector. Overall a scaling up in production of health professionals and employment of clinical staff is proposed.

2.3. THE HEALTH POLICY CONTEXT

The health policy context is that the South African health system is failing to meet Millennium Development Goals and has health outcomes much worse that its peers. The Minister of Health has announced in his Budget Speech May 2011, major policy guidelines that inform the HRH priorities for the short and medium term.

The major short-term policy guidelines that inform the HRH priorities for the medium term relate to the re-engineering of the Primary Health Care System which will be according to 3 main streams to consolidate PHC as the primary mode of health care delivery focusing on prevention of disease and the promotion of health:

i. District-based service delivery model focusing specifically on maternal and child mortality. These teams will consist of five specialist clinicians deployed in each district.
ii. School Health Programme to deal with basic health issues such as eye care, dental and hearing problems, as well as immunisation programmes in schools. Contraceptive health rights, teenage pregnancy and abortions, HIV and AIDS programmes, and issues of drugs and alcohol in school will be part of this initiative.
iii. Ward based PHC model which will deploy at least 10 well-trained PHC workers per ward.

Improved management of health care institutions and health districts will be essential to facilitate the re-engineering of PHC.

2.4. HRH IN SOUTH AFRICA: THE PROBLEM STATEMENT

Number of professionals

In 2010 there were 150,509 registered health professionals in South Africa. From 1996 – 2008 there was a stagnation in growth of health professionals and a decline in key categories such as specialist and specialist nurses. There was a moderate increase after 2006 but this has to be planned and sustained. The slow growth is linked to poor retention of graduates in all health disciplines, unplanned and unfunded public sector posts, and inefficient management and recruitment processes.

Attrition and Migration

Attrition due to emigration is estimated to be about 25%, with further attrition of about 6% due to death, retirement and change of profession. The attrition of Community Service professionals is notable with about 23% not remaining to work professionally in South Africa. The primary reason given for this choice is poor working conditions in the public sector, and not personal circumstances. The high level of attrition is contributing to the shortage of health professionals.

Maldistribution

There is inequity in density of health professionals per 10,000 population between rural and urban areas, and between the public and private sectors. A province like the Eastern Cape has a density of less than half that of the Western Cape and Gauteng.

'Shortage' of professionals

Measuring for a 'shortage' in health professionals can be done in various ways. 'Vacancies' in the public sector are not an accurate method and are an unrealistic indication. Filling currently listed public sector vacancies would cost R40 billion. Making 'vacancies' realistic and manageable would be an important workforce planning exercise.

Bench marking with other countries

Benchmarking with other countries is one methodology for assessing whether South Africa has a 'shortage' of health professionals, how South Africa performs with its given staff and skills mix, and to determine 'the gap'. Other means to determine the gap are realistic ' vacancies' or staffing requirements based on service plans informed by norms.

It is evident that South Africa has a nurse based health care system with 80% of health professionals comprising nurses. *The evidence is that South Africa's performance in terms of health outcomes when compared with peer countries is extremely poor*, with much higher infant and maternal mortality. This reflects on poor productivity, poor design and poor management of resources and not necessarily only the number of available professionals in the health sector.

It is worth noting however, that South Africa does have considerably less doctors, pharmacists and oral health practitioners per population 10,000 population than the other comparable countries. Bench marking has limitations as each health system is different. But the results of such comparison should contribute future strategy.

Recruitment of Foreign Health Professionals

Current national policy is to limit recruitment of foreign trained health professionals to government-to-government agreements. The foreign recruitment process is reported to be inefficient and most offers from governments are not pursued. In the short term foreign recruitment will be necessary to ensure an adequate number of health professionals. The policy will need to be rewritten and effective management processes established. Foreign recruitment should be carefully managed with an emphasis on recruiting foreign academic clinicians and professionals willing to work in rural areas.

Education, Training and Research

Education output of most professions has been stagnant for the past fifteen years. Faculty output of MBChB graduates is not a full capacity for all faculties, and varies in quality for all professions. Budget cuts in the 1990s led to a reduction in academic clinicians and the freezing of academic clinician posts has been sustained. Specialist training in nursing has declined significantly and affects hospital service capacity. Registrar and subspecialist training posts are 30 percent and 75 percent unfilled respectively due largely to lack of funding.

The nursing profession held a Summit in 2011 which identified many strategic issues which need to be addressed to strengthen the nursing profession, especially given the central role they play in the HRH model for South Africa.

The Academy of Science for South Africa reports a decline in clinical research and has initiated a programme to revitalise clinical research and innovation in South Africa.

A constraining factor on education and research growth, and service growth, is the management, financing and organisational arrangements of the Academic Health Complexes and Academic Central Hospitals.

Public Health Leadership

The Minister has emphasises the need for a preventative approach to health care. Public Health Specialist training post are 50 percent unfilled. It is necessary to strengthen the role and career path Public Health Specialists and professionals to develop and implement public health strategies.

Leadership and Human Resources Management

The management of the health workforce is central to how health professionals and health workers perform, to quality of care, retention and health workforce development. A review undertaken for the Minister of Heath by the Development Bank of South Africa highlighted than many district and facility managers are not adequately competent for the job they occupy. 'Moonlighting' and RWOPS have been identified as issues which affect productivity and quality of care. The Occupation Specific Dispensation needs to be reviewed to ensure appropriate incentives are structured into the remuneration package in order to attract and retain health professionals. Provincial HR plans vary in relevance of data, and their functionality as tool for improvement in the working lives of the health workforce.

Information and Planning

There is no national information database for planning the health workforce. All information gathered for the Draft HR Strategy was 'once off' data. The data available coupled with limited planning structures and processes, has lead to health workforce planning not being prioritised. Given the central role of human resources in the health sector, workforce planning capacity and processes need to be strengthened. Provincial Strategic Transformation Plans need to be integrated with a national process, including financial and human resource plans.

HRH requirements for a re engineered health system

The proposed re engineered PHC approach will require 'scopes of practice' of key health professionals to be reviewed, referral patterns details, training and career paths developed. The challenges of the future however require a review of most of the professions for improving both productivity, and delivery of accessible, appropriate, quality care, in the context of limited human and financial resources.

2.5. A STRATEGIC APPROACH FOR 2030

A vision to improve access to health care for all by 2030, makes it is necessary to develop and employ new professionals and cadres to meet policy and health needs, to increase workforce flexibility to achieve this vision, to improve ways of working and productivity of the existing workforce, to improve retention, increase productivity and revitalise aspects of education and training.

Achieving this vision requires the organisational infrastructure for education, training and service development, namely effective and efficient Academic Health Complexes. It also requires improved management of health professionals and cadres and improvement in their working lives.

Realising the vision for 2030 requires firm, accountable and consultative leadership, well informed by information with the planning capacity, processes and tools to deliver.

The thematic areas have informed the development of eight strategic priorities, with strategic objectives and interventions. The table below summarises the 8 Strategeic priorities and objectives.

Table 1: Strategic Priorities and Objectives HRH SA 2030

STRATEGIC PRIORITY	STRATEGIC OBJECTIVE & MILESTONE 2016/17
1.Leadership and Governance for HRH	1.1 NDoH HRH Leadership & Governance Structures 1.2 HR Strategy Implementation 1.3 Institute for Leadership & Management 1.4 NDoH Recruitment & Retention Unit 1.5 NDoH HRH Financing Committee 1.6 International collaboration
2.Intelligence & Planning for HRH: Centre for Health Workforce Intelligence	2.1.Electronic database 2.2. Data analysis & reporting 2.3. Information for oversight & leadership 2.4. Information on Academic Health Complexes 2.5. Develop Health Workforce Committees 2.6. Develop the Centre for Health Workforce Intelligence
3.A Workforce for New Service Strategies Ensuring Value for Money	3.1. Workforce for re engineered PHC 3.2. Public Health Units 3.3 Develop productivity studies & norms and standards & enhance the *Minister's Talent Strategy for a Re engineered Health System* 3.4. Improved provincial STP & HR planning 3.5. Norms and standards for hospitals with adjustments & benchmarking for training sites

4.Upscale and Revitalise Education Training and Research	4.1.Develop and implement *Minister's Talent Strategy for a Re-engineered Health System* 4.2.Growth of HEI's in consultation with stakeholders, including rural campuses 4.3.Refine and develop HRH SA 2030 strategy scenarios for all categories of professions and cadres 4.4. Implement strategy on the nursing profession and form Nursing Workforce and Education Committee 4.5. Institutionalise training for MLWs and CHWs 4.6. Revitalise clinical research & innovation 4.7. Ensure financing of health professional training & development 4.8. Plan training of health professionals outside SA 4.9. Plan growth of academic clinicians in HEI's 4.10. Minister's communication intervention on the value of health cadres

STRATEGIC PRIORITY	STRATEGIC OBJECTIVE/ MILESTONE
5.Academic Training and Service Platform Interfaces	5.1. Policy and governance framework for AHCs 5.2. Minister's National Advisory Committee and oversight regulatory structures on AHCs 5.3. Management infrastructure of AHCs – IT and academic staffing conditions 5.4. Five Flagship Academic Central Hospitals being developed 5.5. Nursing Colleges revitalised
6.Human Resource Management	6.1. Strengthen HR function at all levels 6.2. Implement compulsory accreditation of HR function 6.3. Performance Management frameworks implemented 6.4. Minister's '*Improving the Working Lives of Health Care Workers Initiative'* designed and implemented 6.5 Review and implement remuneration and OSD
7.Quality Professional Care	7.1. Improve and maintain professional standards 7.2. Accredit academic training sites 7.3. Continuing Professional Development
8.Access to Health Professionals in Rural and Remote Areas	8.1. Short term strategies to recruit & retain 8.2. Educational strategy in for rural areas 8.3. Regulatory strategies on scopes of practice 8.4. Financial incentive scheme 8.5. Personal and professional support

2.6. FORECASTING GROWTH IN THE HEALTH PROFESSIONS

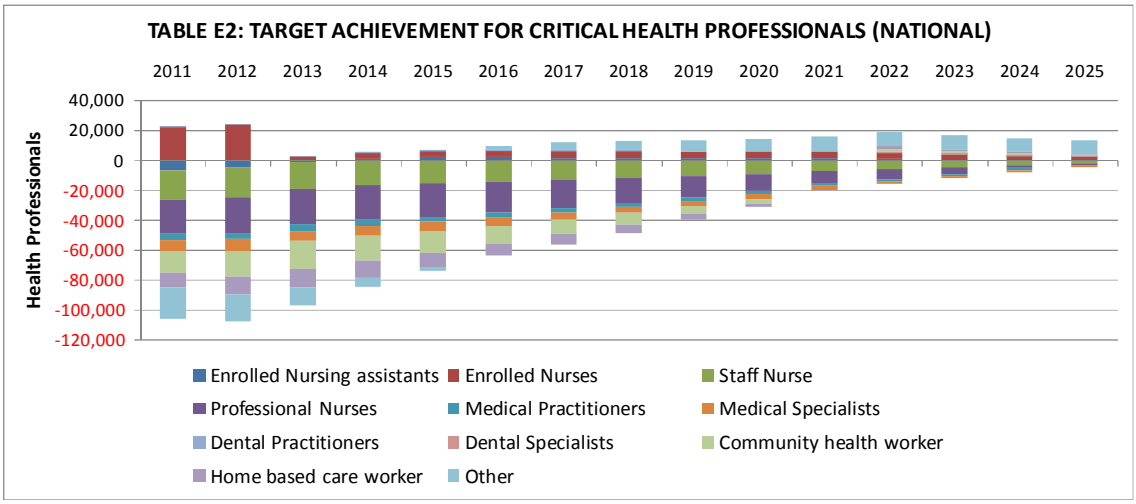
The NDoH Workforce Planning model was developed in 2008. For the HR Strategy planning process the model was updated and used as a tool for planning and forecasting. It is proposed that the SA HRH design to improve health outcomes will have six key foundations:

- CHW at community level
- Predominantly nurse-based system
- Introduce and expand mid-level workers
- Expand general medical doctors
- Expand selected specialist doctors
- Expand public health specialists

Based on this expected high-level policy and a mass of variables a set of prioritised realistic scenarios are presented. They contain timelines for action, short, medium and long term outcome and impact expectations and sequencing proposals to address financial constraints. It must be noted that only Scenario 3 is presented in this Draft HR Strategy document for consultation, and detailed in Annexure B. The NDoH HR Planning Model with the other scenarios is available for review.

The model provides projections for over 100 registerable health professions and is designed to be interactive with the option to adjust baseline data and several assumptions for each profession[1].

The scenario assumptions shows that at a constant GDP growth rate, with concerted investment for the next five years (3% to 5% annual growth rate in personnel spending) it is possible to close the gap in the realistic numbers in a fifteen to twenty five year time frame. Operational implications of the targets need to be examined and evaluated. The table below shows the results of planned change towards professional targets over the next fifteen years.



[1]Annexure B: NDoH HR Planning Model

3. CONTEXT

3.1. INTRODUCTION

Workforce planning for the health service is challenging and complex. The future workforce is difficult to predict. Social and technological changes mean that some skills will become redundant while demand for others will suddenly increase. Basic staff numbers are hard to forecast and problems are exacerbated by the time required to train staff. It takes at least three years to train for many professions, and up to fifteen or twenty years for some senior doctors.

Nonetheless, workforce planning is a vitally important process. *The health workforce comprises about 65% - 70% of expenditure,* depending on the service delivery setting, in most countries. This does not include the substantial investment to train and educate health professionals. It is important that this massive investment in training and employment of the health workforce is well planned, appropriately targeted and properly managed if health outcomes are to be improved. South Africa's health system and its human resource capacity is the product of a complex context which needs to be understood in order to visualise and implement improvements.

Health is all about people. The unique encounter between the health professional and person who needs care is what the health system is about. There is ample evidence that health professional numbers and quality are positively associated with immunisation coverage, successful outreach in primary health care, infacnt, child and maternal survival, impact on communicable diseases and enhancing quality and length of life.

3.2. THE EPIDEMIOLOGICAL CONTEXT

Health indicators pose the challenge for the development of a human resource strategy, and have defined the new policy intervention of the Minister of Health. Data indicates that the *under-five mortality, infant mortality and maternal mortality* in South Africa are high and increasing. The under-five mortality rate has risen from 59(1998) to 104(2007) per 1000 live births, a far cry from the 2015 target of 20. The infant mortality rate has remained virtually static at 54(2001) to 53(2007)per 1000 live births, which is equally far from the 2015 target of 18. But perhaps most distressing is that the maternal mortality ratio has risen from 369 (2001) to 625 (2007) per 100,000 live births, almost doubling and almost 20 times higher than the 2015 target of 38.[2]Only 43.7% of this figure can be attributed to AIDS.

HIV/AIDS, interpersonal violence, TB and road traffic injuries were the leading causes of people seeking health care in 2000. The multiple burdens of disease are characterised by the co-

[2]Third progress report on the Millennium Development Goals (MDGs).StatsSA, UNDP (2010)

existence of diseases associated with under-development such as diarrhoea and malnutrition, as well as chronic non-communicable diseases such as diabetes and stroke. These are compounded by a high injury burden and the HIV/AIDS epidemic.[3,4]

There has been a *rapid increase in infectious diseases, with tuberculosis* becoming the leading registered cause of death, and the proportion of the deaths due to infectious and parasitic causes has increased from 13.1 per cent to 25.5 per cent from 1997 to 2006.

At least 7.3 per cent of the total population are ≥60 years[5], amongst the highest in Africa, and there is indication that the *population is ageing further*.

The 2000 South African National Burden of Disease Study[6] and the Comparative Risk Assessment[7] highlighted the inclusion of *non-fatal outcomes in the measurement of the burden* results, specifically in *mental health problems, such as unipolar depression and alcohol depen*dence ranking amongst the leading causes. In addition, other non-fatal health problems such as adult-onset hearing loss and cataract-related blindness feature among the leading single causes of health loss.

While the National Burden of Disease Study highlighted the need for the provision of a wide range of health services, it brings into sharp focus the *need to promote health and prevent disease*. The risk factor assessment shows that the loss of health in South Africa is dominated by sexually transmitted diseases resulting from unsafe sex. Interpersonal violence and alcohol harm are other risk factors from the social sphere. These are accompanied, on the one hand, by risk factors related to poverty and under-development, such as under-nutrition, unsafe water, sanitation and hygiene and indoor smoke from solid fuels, and on the other hand by risk factors associated with an unhealthy lifestyle related to tobacco, diet and physical activity.

3.3. STRATEGIC IMPLICATIONS OF THE BURDEN OF DISEASE

The extensive and changing burden of disease in South Africa has several implications for human resource development and planning:

i. Health professional training and development must provide for a wide spectrum of conditions

[3]Bradshaw D, Norman R, Schneider M. A clarion call for action based on refined DALY estimates for South Africa. *S Afr Med J*. 2007;97(6):438-40.
[4]Dorrington RE, Johnson L, Bradshaw D, Daniels T. The Demographic Impact of HIV/AIDS in South Africa: National and Provincial Indicators for 2006. Cape Town: Centre for Actuarial Research, South African Medical Research Council, Actuarial Society of South Africa; 2006.
[5]2001 Population Census
[6]Bradshaw D, Norman R, Schneider M. A clarion call for action based on refined DALY estimates for South Africa. S Afr Med J 2007;97(8):438-40.
[7]Norman R, Bradshaw D, Schneider M, Joubert J, Groenewald P, Lewin S, Steyn K, Vos T, Laubscher R, Nannan N, Nojilana B, Pieterse D; South African Comparative Risk Assessment Collaborating Group. A comparative risk assessment for South Africa in 2000: towards promoting health and preventing disease. S Afr Med J 2007;97(8 Pt 2):637-41.

ii. The priority is to improve maternal and child health and maternal mortality

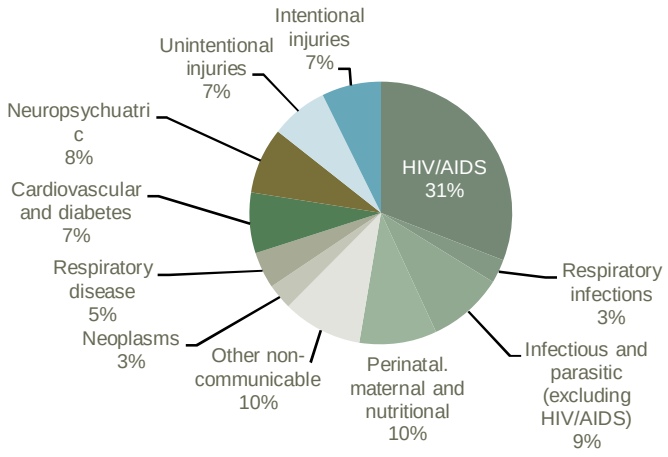
iii. Innovative HR approaches and interventions are needed, in particular for the high AIDS and TB burden, the emerging cardiovascular and diabetes burden and mental health problems

iv. Addressing health inequalities and the social determinants of health needs to be high on the agenda

v. The ageing trend in the population also calls for training and services to meet the needs of older people

vi. Strengthening public health, building the evidence base and improving surveillance data are needed to promote health and prevent disease.

Figure 1: Proportions of leading categories of causes of death 2010



Source: D Bradshaw, MRC Burden of Disease Unit, 2010

3.4. MINISTER'S STATEMENT AND COMMITMENT

Indicators above show that South Africa's health system is failing, but the human resources for health are only a part of the problem. Nonetheless, a change in policy direction needs careful and deliberate redirection of, and investment in, HRH as a part of the whole health system reform.

The Minister of Health has signed a National Service Delivery Agreement 'for a Long and Healthy Life for All South Africans' with the President, to realise this strategic objective. In this document the Minister of Health and the NDOH are committed to four strategic outputs that the health sector must achieve:

Output 1: Increased life expectancy

Output 2: Decreased maternal and child mortality

Output 3: Combated HIV and AIDS and decrease in the burden of diseases from Tuberculosis

Output 4: Strengthened Health System Effectiveness

The policy guidelines that inform the HRH priorities for the short to medium term relate to the re-engineering of the Primary Health Care system, in the context of the implementation of National Health Insurance. The Minister, in his Budget Speech in May 2011 announced that the re engineering will be according to three main streams to consolidate PHC as the primary mode of health care delivery focussing on prevention of disease and the promotion of health. The three main streams are:

A district-based service delivery model focusing specifically on maternal and child mortality. These teams will consist of five specialist clinicians, and advanced midwife and PHC nurse deployed in each district.

School Health Programme to deal with basic health issues such as eye care, dental and hearing problems, as well as immunisation programmes in schools. Contraceptive health rights, teenage pregnancy and abortions, HIV and AIDS programmes, and issues of drugs and alcohol in school will be part of this initiative.

A Community Outreach PHC Team which is ward based and will comprise at least 10 well-trained PHC workers per ward.

Improved management of health care institutions and health districts will be essential to facilitate the re-engineering of PHC.

The Minister also has announced the commissioning of *five Flagship Academic Hospitals* as part of the process to re engineer and strengthen the whole health system, and develop a balanced capacity for health care delivery.

The Human Resource Strategy of NDoH, HRH SA 2030, is directed to meeting these new health goals and service needs.

3.5. NDOH POLICY GUIDELINES[8]

Developments in HRH must also be guided by the Medium Term Strategic Framework (MTSF) for 2009–2014 and the national Department of Health's 10 Point Plan of priorities. The 10 Point Plan incorporates the priority of human resources, planning, development and management.

i. Strategic leadership and creation of a social compact for better health outcomes;
ii. Implementation of the National Health Insurance;
iii. Improving the quality of health services;
iv. Overhauling the healthcare system;
v. Improving human resources, planning, development and management;
vi. Revitalisation of the infrastructure;
vii. Accelerated implementation of HIV and AIDS, STI and TB and communicable diseases;
viii. Mass mobilisation for better health for the population;
ix. Review of drug policy; and
x. Strengthening research and development.

The fifth point in the 10 point plan, *"Improving human resources, planning, development and management"* has six documented strategic priorities:

i. Refinement of the HR plan for health
ii. Re-opening of nursing schools and colleges
iii. Recruitment and retention of professionals, including urgent collaboration with countries that have an excess of these professionals
iv. Focus on training of PHC personnel and mid-level health workers
v. Assess and review the role of the Health Professional Training and Development Grant (HPTDG) and the National Tertiary Services Grant (NTSG)
vi. Manage the coherent integration and standardisation of all categories of Community Health Workers

The Human Resource Strategy of NDoH, HRH SA 2030 builds these priorities.

3.6. THE LEGISLATIVE MANDATE

The development of the HR Strategy for NDoH is governed by The Health Act paragraphs 51 and 52. In terms of the act the Minister:

i. May establish Academic Health Complexes
ii. Must ensure education and training of the health workforce to meet requirements of the health system, and adequate resources for this purpose

[8]Medium Term Strategic Framework (MTSF) (2009–2014)

iii. Create new categories of health workers and ensure sufficient skills, competencies and expertise
iv. Identify shortages and find ways to fill them through local and foreign recruitment
v. Prescribe strategies for and retention
vi. Ensure human resource planning development and management structures
vii. Ensure institutional capacity at national, provincial and district levels to develop and manage human resources
viii. Ensure clarity on roles and functions of the NDoH, provincial departments and municipalities with regard to planning, production and management of human resources.

A numbers of other aspects of legislation impact on the management of human resources by the NDoH. These include the Higher Education Act 1997 which structures higher education as a national competence of the Department of Higher Education and Training; and the Public Service Act 1994, and Labour Relations Act 1995, both of which govern conditions of employment for public servants and remuneration.

The legislative and operational framework of developing and managing human resources for the health sector necessitates a close and ongoing working relationship with the relevant Ministries.

3.7. THE ECONOMIC CONTEXT

Competing demands on the national fiscus make substantial increases in the 9% of the budget spent on health unlikely. The health sector must demonstrate allocative and operational efficiency (optimal spending between different categories of health workers and productivity of the existing workforce) in the management of human resources before additional spending can be motivated.

The national commitment to the establishment of a National Health Insurance (NHI) delivery model may provide potential positive financing changes for the health sector that may result in an increasing percentage of the GDP being spent on health services over the next 15 years. No commitment to an increase has been formally announced but, if there is any increase, it is not likely to be massive, given the other competing demands in society.

The assumption has to be made in planning for HRH SA 2030 that spending will be aligned to growth in GDP. The percentage of GDP spent (or even the public budget) on human resources for health may be increased, but this implies one or more of the following:

- an increase in health workforce financing as a share of GDP
- revenue generation by the public sector
- a shift in public spending towards health
- a shift in public health spending towards human resources for health
- additional private sector financing towards human resources for health

4. NATIONAL HR STRATEGY - OVERVIEW

HUMAN RESOURCES FOR HEALTH IN SOUTH AFRICA: THE PROBLEM STATEMENT

4.1. INTRODUCTION

South Africa has a well-developed hospital and clinic system, is well resourced in terms of technology and medicines, and is internationally recognised for excellence in clinical academic medicine. At a policy level, the first decade post-apartheid has seen numerous policies and legislation enacted and a new health service delivery framework put in place. Opinion of health professionals is that in fact, health outcomes have declined and the capacity of the health system has deteriorated.

The general consensus is that the failure of health services to deliver is due to constraints and bottlenecks in human resources. An integrated set of problems and constraints that affect the capacity of HRH in South Africa have been identified by role players and need to be addressed for HRH to be strengthened and to improve health outcomes.

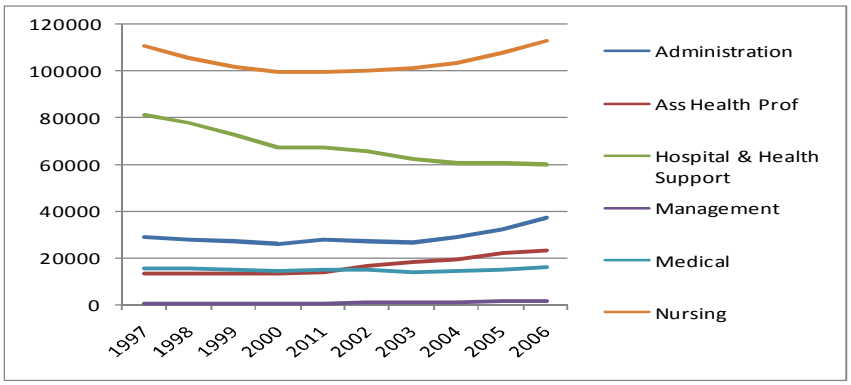
4.2. HISTORICAL PATTERN IN HRH NUMBERS

In 2010 there were 150,509 registered health professionals in the health sector (see Annexure A Table 1 Registered HPCSA Professionals). In 2010 there were in the region of 290,000 cadres in the health workforce.

Human resources for health have not been growing at a planned rate to meet health needs. From 1996 – 2008 there was little growth of health professionals in the public sector (See Figure 2). Administrative and management personnel expanded at the expense of clinical appointments. Specialist medical staff declined in number by 25%, from 3782 in 1998 to 2928 in 2006. Most of these staff would have left, or been retrenched, as a result of posts frozen in Academic (Central) Hospitals. Nursing numbers declined by 10,000, levelling off just above the 1997 level in 2006. This was due to the closure of Nursing Colleges. There has been a significant decline in nursing specialist staff.

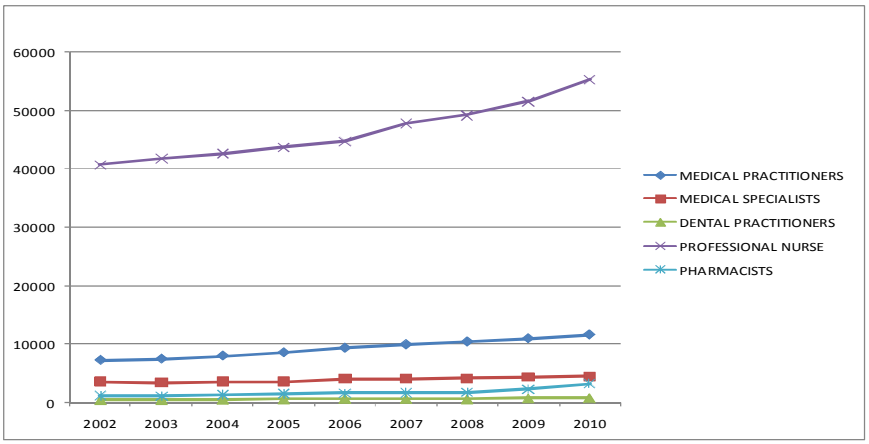
From 2006 the situation improved with a moderate growth in all the professions (see Figure 3).

Figure 2: Health Professionals Employed in the Public Sector 1996 - 2008



Source: NDoH 2008

Figure 3: Health Professionals Employed in teh Public Sector 2002 - 2008



Source: National Treasury 2011

4.3. RETENTION AND ATTRACTION IN THE PUBLIC SECTOR

Slow growth of health professionals in the public sector is linked to a number of variables. The first variable is a *lack of funded public sector posts*. It is evident that the growth of output of graduates significantly exceeds the growth in employment in the public sector. Seventy percent of new graduates produced in the key professions over 10 years were not absorbed into the public sector. Over a ten year time frame, for example, 11700 MBChB's were trained yet only 4403 medical practitioners were employed over the same time in the public sector. In the same period 2104 dentists were trained and only 248 employed in the public sector. Over 80% of Physiotherapists and Occupational Therapists were not retained in the public sector (see Table 2 Annexure A). There is a need to increase the availability of funded public sector posts for all the health cadres, and expansion in output of health professionals from training institutions needs to be carefully managed so as not to exceed absorptive capacity and affordability.

The second variable which is a contributor the lack of growth of health professionals in the public sector is a *lack of proactive planning* for requirements in the public health sector and management action to achieve planned targets and goals. This includes ensuring sufficient funding for clinical posts.

A third variable, is the *poor recruitment management process* which fails to attract health professionals to the public sector. The process of mass advertisement of provincial vacancies, lack of a professional website and information about post location, exceedingly slow processing of applications, all lead to a negative employment process and the loss of the potential professional to the public sector. Once employed the negative management process of meeting health professionals working needs and expectations continues, contributing to a negative work environment.

4.4. ATTRITION OF COMMUNITY SERVICE PROFESSIONALS

The attrition of Community Service professionals leads to a notable loss of trained professionals to the health system. Surveys report that in 2009 23.1% of medical Community Service Professionals were reported to plan to leave the country. Even though this is less than the 43% of 2001[9], this is equivalent to the output of one medical school, each year, planning to leave the country.

Another study undertaken by HEARD for the International Migration project 2011, revealed that approximately a third of the student respondents were intending to work or specialise abroad, and that the majority would leave South Africa early on in their careers. These findings highlight the critical period early on in the careers of health professionals during which they are open to the possibility of leaving the country. The reason for leaving was conditions of work in the public sector and not personal circumstances[10]. The NDoH and provincial departments of health do not sufficiently value and try to attract the Community Service employee.

4.5. MIGRATION

A range of issues affect the *attrition rate* of health professionals from South Africa which is *conservatively estimated at an annual rate of 25%* [11]. Factors affecting migration are: HIV &AIDS, working conditions, workload in the public sector, workplace security, relationship with management in the public sector, morale in the workplace, risk of contracting TB,

[9]Wolvaardt G, A review of doctors experiences over the first 10 years of CS, Foundation for Professional Development, 2010

[10] Reardon C and George G, personal communication

[11] Econex Notes on Health Reform Number 8, 2010; CMSA Report 2010

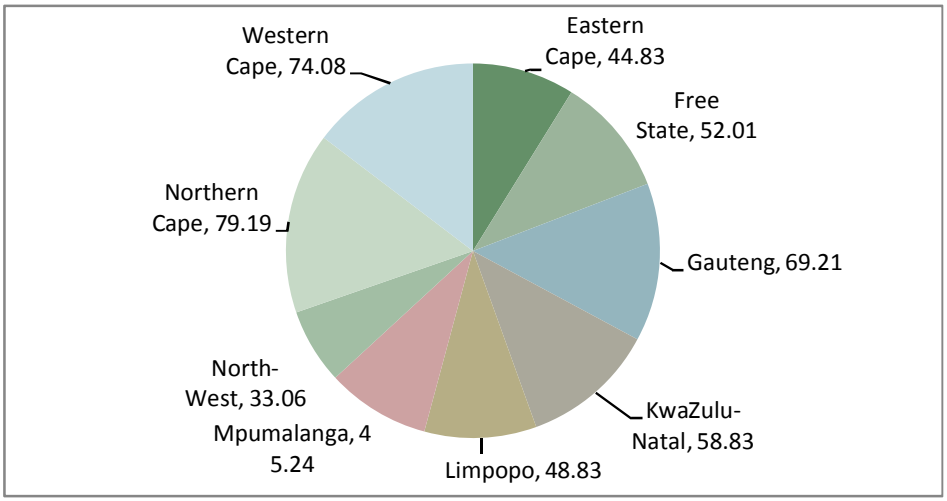
personal safety. Lifestyle and income were not the most significant factors.[12] The working environment and management relationships are critical factors affecting why health professionals leave. The high level attrition of health professionals from South Africa is creating a shortage of health professionals in the country, despite the number being trained.

4.6. DENSITY AND DISTRIBUTION OF HRH

Of the professionals employed in South Africa, it is evident that there is *inequity in density between the public and private sector for each profession, and between 'urban' and 'rural' areas*, and wealthier and poorer provinces. The density per 10,000 population for the 27 key professions for all provinces is detailed in Annexure A Table 3.

While Gauteng had the largest number of HRH in 2010, the Northern Cape had the highest ratio of total HRH per population – as can be seen in the Figure 4 below. The figure shows a large variance between the provinces. For example, the ratio of HRH per 10,000 population (33.06) in the North West is less than half of the ratios in Gauteng, the Northern Cape and the Western Cape. The Eastern Cape has about half the density of health professionals per 10,000 compared to that of Gauteng and the Western Cape.

Figure 4: Total (public & private) HRH per 10,000 population per province, 2010



4.7. ACCESS TO HEALTH PROFESSIONALS IN RURAL AREAS

Providing health services to rural communities presents complex challenges in every country. In South Africa rural areas, are home to 43,6% of the population but are served by only 12%

[12] Wade Pendelton et al, The Haemorrhage of Health Professionals from South Africa: Medical Opinions, South African Migration Project, IDASA, 2007

of the doctors and 19% of nurses. Of the 1200 medical students graduating in the country annually only about 35 end up working in rural areas in the longer term. About 21.3% of households in metropolitan areas belong to a medical aid, but only 5,4% of households in rural districts so access to private care is low. However access to PHC needs to be seriously improved in rural areas because the Infant Mortality Rate is 32.6 urban areas compared to in 52.6 on average in rural areas (some areas are as high as 70 in the Eastern Cape).

There is an urgent need for the health departments to focus on how to recruit, retain and support senior health care professionals in rural hospitals for the long term and the HRH plan needs to be relevant to the rural health care context[13] National, district and facility level leadership need to be committed to ensuring that rural recruitment and retention strategies work. [14]

4.8. "VACANCIES" IN THE PUBLIC SECTOR

'Vacancies' are regularly used as an indicator of the 'shortage' of health professionals in South Africa. In Annexure A Table 3 the vacancies for the 27 professional categories are reviewed and the cost of filling the vacancies is detailed, by province. In determining the 'gap' between the number of HRH SA currently has and what it should have to achieve reasonable/better health outcomes, this could have been a valuable source. Unfortunately there are various concerns with the public sector vacancy data which make its use problematic. The 'vacancies' are not based on a planned balanced health care system. Correcting the 'vacancy' situation and making it real and accurate is an important task for the short term in improving the management of the health workforce.

To illustrate the point, Table 2 below shows the population ratio of all filled and vacant positions for doctors (GPs & specialists) in the public sector for each of the provinces in 2010. The implied norms differ greatly between the provinces with that of the Western Cape at almost 9 doctors per 10,000 of the uninsured population, while the North West has an implied benchmark of only 1.91 doctors per 10,000 uninsured population. In Limpopo for instance, more posts are vacant than filled. It is recognised that no adjustments has been made for location of tertiary hospitals. However, there is no coherent strategy or goal between the provinces or nationally to develop a reporting framework for HRH that is informative.

In Annexure A Table 4 the costs of filling the vacancies for the 27 key professions is detailed by province, based on the average cost per professional in the public sector (OSD). As is

[13] Rural Health Advocacy Project Position Paper (2011) and letter to the Minister of Health
[14] See Discussion Document Draft HR Strategy 4th August 2011 Annexure B6 for Rural Health Strategy proposed by the Rural Advocacy Group

evident, it would cost almost R 40 billion to fill all listed vacancies for this handful of positions only. This is clearly not a realistic target and suggests that the establishments are not based on both need and available resources.

Table 2: Total filled and vacant positions per 10,000 uninsured population for doctors in the public sector, by province, 2010

Region	Uninsured population	Filled (per 10,000 population)	Vacant (per 10,000 population)	TOTAL (per 10,000 population)
Eastern Cape	6,611,246	2.43	0.88	3.30
Free State	2,594,485	3.51	1.23	4.73
Gauteng	6,921,958	5.99	0.86	6.85
KwaZulu-Natal	8,841,171	4.01	1.27	5.28
Limpopo	5,314,492	2.01	2.19	4.19
Mpumalanga	2,949,627	2.58	0.40	2.98
North-West	3,457,127	1.83	0.08	1.91
Northern Cape	765,716	4.37	0.78	5.16
Western Cape	3,539,627	7.51	1.21	8.72
South Africa	40,995,447	3.82	1.08	4.90

Source: Persal 2010

4.9. BENCHMARKING WITH OTHER COUNTRIES TO DETERMINE 'SHORTAGE'

Benchmarking with other countries is one methodology for assessing whether South Africa has a 'shortage' of health professionals, and how South Africa performs with its given staff and skills mix, and to determine 'the gap'. Other means to determine the gap are realistic ' vacancies' based on establishments calculated on assessed need not historical standards, or staffing requirements based on service plans informed by realistic assessments of caseload and productivity.

South Africa was compared with peer countries, namely countries similar to South Africa in the following dimensions:

- Population (size of the administrative challenge)
- per capita GDP (available money in the country to spend per person)
- Gini coefficient (economic inequity)

– GDP growth (indication of national productivity)

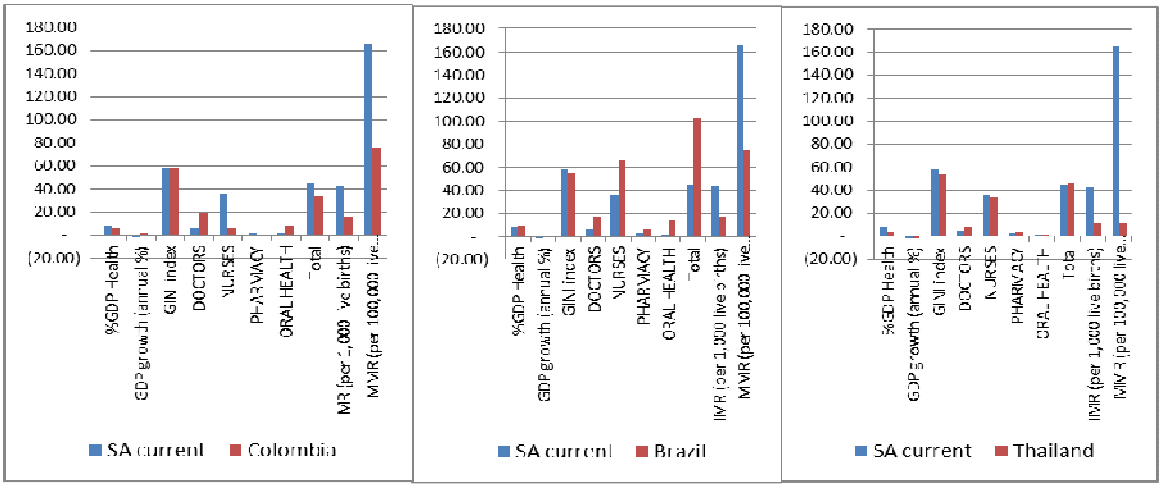
Six middle income emerging economy peer countries were identified (Brazil, Chile, Costa Rica, Colombia, Thailand, and Argentina). Data on professional numbers (doctors, nurses, pharmacy and oral health) in the whole country (different public/private arrangements were not disaggregated) were compared. The ratio of these four main categories of professionals provides insight into the 'shape' of the health systems in these countries. The peer countries were also compared for health outcomes, specifically, IMR (measure of infant mortality) and MMR (measure of maternal mortality).

Table 3: Comparative benchmarks for staffing and health outcomes

	International benchmarks												SA current	
	Brazil		Chile		Costa Rica		Colombia		Thailand		Argentina			
Population	193 733 795		16 970 265		4 578 945		45 659 709		67 764 033		40 276 376		49 320 150	
GDP per capita (USD)	4 399		6 083		5 043		3 102		2 567		9 880		3 689	
%GDP Health	9.05		8.18		10.47		6.42		4.31		9.53		8.51	
GDP growth (annual %)	-0.64		-1.53		-1.50		0.83		-2.25		0.85		-1.78	
GINI index	53.9		52.06		50.31		58.49		53.57		45.77		57.77	
DOCTORS	17.31	17%	15.71	42%	20.42	39%	19.43	58%	8.72	19%	31.96	62%	5.43	12%
NURSES	65.59	64%	10.45	28%	22.19	42%	5.83	17%	33.21	71%	4.87	10%	36.1	80%
PHARMACY	5.81	6%	3.72	10%	5.34	10%	0	0.0	2.92	6%	5.08	10%	2.29	5%
ORAL HEALTH	13.69	13%	7.44	20%	4.85	9%	8.26	25%	1.73	4%	9.28	18%	1.2	3%
Total	102.39		37.32		52.8		33.52		46.59		51.19		45.02	
IMR (per 1,000 live births)	17.3		7.0		9.6		16.2		12.0		13.0		43.1	
MMR (per 100,000 live births)	75		18.2		26.7		75.6		12.2		40		165.5	

It is evident that South Africa has a nurse based health care system, similar to Thailand and Brazil in shape while Colombia and Argentina have a doctor based system and Chile and Costa Rica have more balanced doctor/nurse design.

Table 4: Comparison of South Africa with Colombia, Brazil and Thailand, staff, IMR & MMR



The evidence is that South Africa's performance in terms of health outcomes when compared with peer countries is extremely poor, with much higher infant and maternal mortality. This reflects on poor productivity, poor design and poor management of resources and not only necessarily on the number of available professionals in the health sector.

This does not mean that South Africa does not need more health professionals. It merely changes the focus of the challenge. Management (accountability), design and productivity must be the focus and production and engagement of additional professionals only a second priority.

It is worth noting however, that South Africa does have considerably less doctors per 10,000, pharmacists and oral health practitioners per population than the other comparing countries. Once could conclude from this comparison that South Africa has a shortage of doctors and other health professionals, but not necessarily a shortage of nurses. It does depend however on competence and type of skills the nurses have and the management of health needs in relation outcomes. South Africa would need 60,000 more doctors to have the same doctor to 10,000 population ratio as Brazil.

Bench marking has limitations as each health system is different. But the results of such comparison should inform future strategy.

4.10. RECRUITMENT OF FOREIGN TRAINING HEALTH PROFESSIONALS[15]

Current national NDOH policy is to limit recruitment of foreign doctors for a maximum of 6% of the medical workforce and only to use country-to-country agreements. There are currently are 3004 foreign doctors in South Africa or 10% of the medical workforce (See Annexure A Table HPCSA 2011). The shortage of doctors, nurses and other health professionals in the short term requires a 'new look' at the policy on foreign recruitment. Countries such as the UK and Australia have used the 'importing' of doctors and nurses as a purposeful and essential part of their policy to ensure required numbers of professionals. South Africa has been one of the primary sources for these 'imported' doctors.

A number of strategic issues form part of the problem statement on foreign recruitment:

- Existing and potential country-to-country agreements for the recruitment of doctors for South African public service;
- Legislation governing the recruitment of health workers for the SA public sector;
- Existing management processes for the recruitment of foreign health workers.

A rewriting of the legislation and new management processes on recruitment and retention of foreign trained health professionals are required.

4.11. EDUCATION AND TRAINING INFRASTRUCTURE AND OUTPUT

The *current source of supply for the health workforce is 22 Higher Education Institutions*. A total of 3173 students graduate each year on average (see Annexure A Table 6). Notable increase in graduates in the past fifteen years has not taken place. Medical graduate output has been stagnant and not all faculties are producing to full capacity, see Table 4 below. Further there are variations in quality of output of students in all the professions which suggests that accreditation of programmes requires more stringent regulation. The MBChB output in a number of institutions and programmes is low and requires strengthening.

[15] See Discussion Document Draft HR Strategy dated 4th August 2010 Annexure B4 and B5 for reports on foreign recruitment process in South Africa and more detailed recommendations

Table 5: Number of MBChB Graduates from 2000 to 2008 Source: DHE&T 2010

Institution	2000	2001	2002	2003	2004	2005	2006	2007	2008
UCT	134	162	167	155	159	150	185	160	164
UL	235	249	243	283	238	294	239	200	153
UKZN	90	116	132	165	178	298	201	189	224
UFS	110	115	109	88	167	106	105	129	109
UP	203	212	203	184	180	197	207	198	200
Stellenbosch	140	140	129	177	148	150	170	149	167
WSU	26	43	48	56	119	69	89	97	103
Wits	193	192	181	188	205	247	170	175	189
TOTAL	**1131**	**1229**	**1212**	**1296**	**1394**	**1511**	**1366**	**1297**	**1309**

Increasing supply of doctors is a slow process and reinforces the importance of retaining Community Service professionals after they complete their service. Retention scenarios for all professionals are shown in Annexure A Tables 7 and 8. To get 1053 extra MBChB graduates annually by only 2025, requires increasing enrolment of medical students from 8589 to 15,549 (a doubling of the current medical training platform). The retention scenarios also show that with 25% attrition, in fifteen years the numbers of doctors do not increase significantly in the population. *Improved retention* is absolutely necessary to accompany the growth in output from Higher Education Institutions.

Training of health professionals is inequitably distributed. Annexure A Tables 9 and 10 shows how few students are in training in the Eastern Cape, Limpopo, Mpumalanga and the North West. There are almost no allied health professionals in training in these provinces. The student training platform of HEI's enables service development and it is essential that rural campuses are created to build services in rural provinces so as to improve access to health professionals in these areas. Conditional grant mechanisms must be used to ensure the appropriate incentives and accountability for achieving this change. There must be an active dialogue between service providers and training institutions to ensure that supply of graduates meets demand and available funding. Training in urban and rural areas must be accompanied with the development of funded posts to absorb the graduates in all professions, and especially in rural areas.

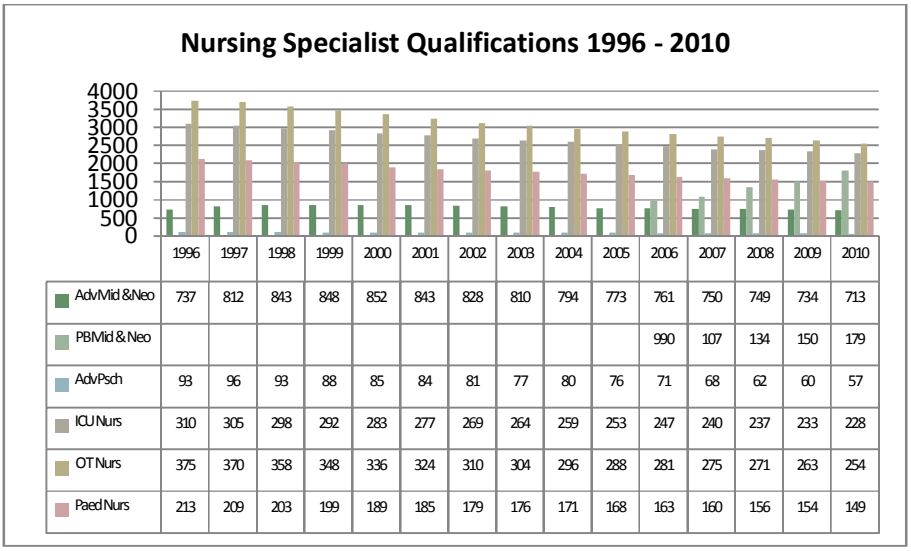
4.12. THE TRAINING OF SPECIALIST AND SUBSPECIALISTS DOCTORS

The *training of specialists and subspecialists has contracted in the past fifteen years* with an average 30% of accredited HPCSA registrars training posts unfilled, and 75% of subspecialist training posts unfilled. National Treasury allocated in March 2011 R100m, R200m and R300m for the MTEF 2011/12 – 2013/14 to fill unfilled posts. It is necessary to track new funding, in general to establish a national planning and accountability process for funding of registrar posts, and prioritising specialities and subspecialities. Annexure A Tables 11 and 12 show filled and unfilled specialist and subspecialist training posts by speciality and institution. The contraction of specialist and subspecialist training impacts on the capacity of the health system as a whole. Planned growth in specialists is essential to meet the Minister's plans for specialist teams at district level, and to provide the staffing for the 'Five Flagship Academic Hospitals' project.

4.13. SPECIALIST NURSES

Table 5 illustrates that the specialist qualifications (except the post basic midwifery and neonatal care) registered by the SANC for the period 1996 to 2010 appear to be gradually declining since about 1999 and 2000. The data indicates that there is a gradual decline in the number of nurses with specialist qualifications on the register especially intensive care, operating theatre, advanced midwifery and psychiatry. This data is confirmed by reports from specialists in hospitals who indicate that operating theatre time is constrained by lack of available specialist nurses. There are many specialist qualifications registered by the SANC however the names and titles are confusing and outdated with current nomenclature. The nursing SGB undertook an extensive review of the existing specialist qualifications registered by the SANC and prioritised and consolidated the specialist qualifications after an extensive consultation process. A mechanism that supports and facilitates providers of nursing education to align their education and training programmes to meet the requirements of the specialist qualifications that are registered on the NQF is required, as well as an increase in output of specialist nurses and meet assessed needs for patient care.

Table 6: Nursing Specialist Qualification 1996 - 2010



	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
AdvMid &Neo	737	812	843	848	852	843	828	810	794	773	761	750	749	734	713
PBMid & Neo											990	107	134	150	179
AdvPsch	93	96	93	88	85	84	81	77	80	76	71	68	62	60	57
ICU Nurs	310	305	298	292	283	277	269	264	259	253	247	240	237	233	228
OT Nurs	375	370	358	348	336	324	310	304	296	288	281	275	271	263	254
Paed Nurs	213	209	203	199	189	185	179	176	171	168	163	160	156	154	149

4.14. ACADEMIC CLINICIANS

The trend of vacant (generally frozen) academic clinician posts in HEI's has accompanied the contraction in medical and nursing specialist training, lack of growth in MBChB training, and lack of growth in allied and nursing professions undergraduate and specialist training. Of 2361 accredited HPCSA academic specialist medical and surgical clinician posts, 591 or 30% are unfilled (generally unfunded). See Annexure A Table 13 for the detail of filled and unfilled HPCSA academic clinician posts by faculty and speciality. It is also evident that the number of posts filled with employed specialist academic clinicians in some campuses is extremely low and requires urgent attention. *For example Walter Sisulu has only 6 registrars in training and 12 full time academic clinicians employed* (HPCSA 2008).

4.15. THE NURSING PROFESSION

The nursing profession[16] *plays the key role in the health workforce in South Africa's health system design*. Strengthening the nursing profession is central to the country's HRH model.

The overall growth of registered[17]professional nurses from 1996 to 2010 was 28%, for enrolled nurses 59% and nursing auxiliaries 23%. SANC 2010 age profile for professional nurses reveals that nurses are an ageing workforce. Almost 46% of the workforce is over the age of 50 years while 16 % have already reached the retirement age of 60 years. It is

[16] See Discussion Document Draft HR Strategy August 4th 2011 Annexure B10 for report on the current status and strategies for strengthening the Nursing profession.
[17] SANC

estimated that up to 51,200 professional nurses will need to qualify over the next 10 years to replace those retiring and leaving the profession and to sustain the current ratio to population.

The trend in *the decline in output of specialist nurses* (advanced midwives, operating theatre nurses, ICU nurses, advanced psychiatry, paediatric) has already been noted.

A *range of strategic issues require addressing to strengthen the nursing profession*, including regulation implementation, nursing education, growth of nursing colleges, growth of nursing education in HEI's, human resource planning and improved professionalism and quality of care[18]

4.16. CLINICAL RESEARCH AND INNOVATION

The *Academy of Science of South Africa has documented the decline of clinical research* and the importance of revitalising the culture of clinical research in South Africa[19].The ASSAf identified the following barriers to revitalising clinical research in South Africa:

- Inadequate public engagement with clinical research
- Government does not promote clinical research sufficiently in the public domain
- Researchers do not engage sufficiently with issues of importance to research participants and policy-makers
- Lack of research planning, regulation and coordination
- Inadequate capacity for clinical research (human resources and infrastructure)
- Lack of adequate and appropriate funding
- An absence of monitoring and evaluation

ASSAf[20] recommended "raising the status of clinical research, both within the broader domain of scientific research and within government programmes funding science; creating a strong public service and benefit ethos based on better programmes promoting public engagement with clinical science and better risk-benefit analyses that inform prioritisation of clinical research in the country; and working towards a concerted and coordinated effort by government, industry and research institutions to promote and develop clinical research capacity at the highest level possible level."

[18] See Discussion Document Draft HR Strategy August 4th 2011 Annexure B10
[19] Report of the Academy of Science of South Africa, Revitalisation of Clinical Research (ASSAf) in 2009
[20] Report of the Academy of Science of South Africa (ASSAf) in 2009

4.17. FINANCING HEALTH PROFESSIONAL DEVELOPMENT AND HEALTH SCIENCE EDUCATION

Financing for health professional development currently occurs through a number of funding streams including:

- Clinical Training Grant and the Block Grant from DHET
- Health Science Programme of provincial health budgets
- Health Professions Teaching and Development Grant (HPTDG) and the National Tertiary Services Grant (NTSG), which are allocated to provinces from the NDoH budget.

The financing of health professional training and development is complex. The several funding streams are designed to achieve different purposes but collectively they do not adequately support the optimal planning and implementation of health professional education. Key role players agree that without resolving the financing issues the expansion of health professionals will be extremely difficult because these grants fund clinical academic personnel posts, the related training costs, and service platform costs, and the appointment of staff is dependent on management of these funds. The key parties, National Treasury, NDOH, provincial DOHs, Deans of Faculties of Health Sciences, DHET, and the NHLS need to be part of developing a solution.

The review of the grant structures should result in the following:

- the grants (HPTDG, CTG and Block Grant) need to be aligned so the same functions are not funded twice
- the NDoH grants should become specific purpose grants which match the costs of the function
- the grants should be measurable against output and outcome (numbers and grade attainment)
- registrar salaries need to be ring fenced considered in the new grant framework
- the provincial health science education programme funding and outputs should also be specified in the final grant framework (this programme currently funds Nursing Colleges, Ambulance Colleges and other issues)
- all grants from DHET and NDoH which finance health professional development should be based on a single strategy
- The extra service costs of training (i.e. not direct training costs) should be calibrated and a funding mechanism established.

Table 5 provides a rough estimate on spending on health sciences by Higher Education institutions. In total approximately R7 billion a year is being spent on health science education and training. Historically there has been relatively poor coordination between provinces and universities in this area. New proposals for the Health Professions Training and Development grant have been developed and are being negotiated.

Table 7: Expenditure: Health Sciences and Training

Programme	6. Health Sciences and Training								
	2007/08	2008/09	2009/10		2011/12	2012/13	2013/14		
Subprogramme	Audited			Adjusted appropriation	Medium-term estimates			Change pa 07/08-10/11	Change pa 10/11-13/14
6.1 Nurse Training Colleges	1,065,782	1,409,742	1,610,983	1,802,741	1,930,748	1,956,757	2,047,846	19.1%	4.3%
6.2 EMS Training Colleges	41,344	55,877	61,251	119,408	118,225	138,307	144,970	42.4%	6.7%
6.3 Bursaries	185,176	319,407	319,877	353,246	394,472	422,827	448,905	24.0%	8.3%
6.4 Primary Health Care Training	266,037	322,641	315,587	405,234	390,322	411,304	430,920	15.1%	2.1%
6.5 Training Other	379,553	478,497	646,523	799,039	859,169	915,847	971,043	28.2%	6.7%
Total	**1,937,893**	**2,586,164**	**2,954,222**	**3,479,668**	**3,692,936**	**3,845,042**	**4,043,683**	21.5%	5.1%
Other related									
Health Professions training and development grant	2,076,920	1,970,144	1,563,175	1,865,387	1,977,310	2,076,176	2,190,366		
Higher Education institutions	1,832,528	2,134,000	2,350,040	2,503,042	2,653,225	2,812,418	2,981,164		

Source: National Treasury 2011

4.18. ACADEMIC HEALTH COMPLEXES

Currently Central Hospitals and most other facilities in what should be constitutes as Academic Health Complexes are run by the Provincial Departments of Health. There is little uniformity between the various provinces' Academic Health Complexes, little co-ordination between them, levels of funding are inconsistent and training and service outputs differ markedly. Posts have been frozen or abolished and skilled specialist and sub-specialist staff lost to the country. Plant and building maintenance of the facilities has been poor and equipment and technologies not kept pace with global trends. The complexity of managing Academic Health Complexes, partly owing to the multiplicity of stakeholders, has been underestimated. Human resource planning is exclusively based on service requirements while academic needs have been ignored and this has negatively impacted on availability of scarce expertise. CEOs do not have fully delegated authorities and are not personally accountable for the effective and efficient management of these centres and their outcomes. Central hospitals should be autonomous national assets and funded and managed as such.

Academic Health Complexes roles of service, training and research are important to the development of health care and the health system, the need to integrate the missions of teaching, research and service, and to create the optimal organisational and financing framework within which the health sciences can grow and thrive. Creating Academic Health Complexes to deliver on these goals requires a clear policy and is essential to the growth of the health professions and the health system.

The CMSA Report 2010[21] proposed that NDOH implement a policy development initiative for strengthening Academic Health Complexes with the intention to:

Elaborate the policy definition of academic health complexes

- Define organisational and governance models including public accountability
- Develop accreditation framework for devolved organisational AHCs
- Streamline staffing policy and academic conditions of service
- Develop standard for IT design and reporting in large academic hospitals using clinical and procedural coding
- Define the various financing streams for health professional development, specialist/ tertiary services and core financing by national global budgets.

4.19. THE PRIVATE SECTOR ROLE IN HEALTH PROFESSIONAL DEVELOPMENT

The policy of the NDoH is to harness all resource towards a balanced health care system, using National Health Insurance as a primary financing mechanism. South Africa has a private health sector which covers the health care of about 35% of the population's health care needs, and has world class specialist units and general clinical care. Many public sector patients (not on medical aid) pay out of pocket to use the private sector when public sector services are unavailable to them. 47% of medical professionals work in the private sector (12,827 out of a total of 27,641). 53% -73% of GPs work in the private sector, 65% of specialists and around 40% of nurses. The public sector budget however accounts for only 40% of total health expenditure. 60% of total health expenditure is spent in the private sector, and this spending is driven in large and significant part by medical professionals. These private sector health professionals are trained in the public sector.

The general economic principle of financing for the health sector is to make best use of all health sector resources. The sector in South Africa that has received significant budget cuts over the past 15 years is the academic health sector. It is in the interests of public and private sector health care to make sure that the academic sector grows, is sustainable and produces quality health professionals and academics. Mechanisms by which the private health sector could contribute to health professional development is being evaluated by the National Department of Health.

[21] The Colleges of Medicine South Africa Report , 2010, Section 2.2 Strachan B, The Strengthening of Academic Health Complexes, also Discussion Document Draft HR Strategy 4th August 2011 Annexure B7.

4.20. PUBLIC HEALTH LEADERSHIP

The *role of the Public Health Specialist and Public Health professionals in leading health strategy* and monitoring service delivery has not been institutionalised. Further, part of the planning and management problem is that many of the officials charged with the work are not appropriately trained in epidemiology, planning and statistical analysis. Countries such as Cuba and Brazil, where there has been significant impact on health outcomes, place training in Public Health and leadership by professionals qualified in Public Health at the forefront of health system and health service management[22]. Training more Public Health specialists and professionals and creating structures, Public Health Units, and career paths is necessary to impact on population health.

4.21. LEADERSHIP AND HUMAN RESOURCE MANAGEMENT

The *management of the health workforce* is central to how health workers perform, quality of care, retention and health workforce development. The issue of management in the health sector is a frequent topic highlighted in the media. Health system performance requires effective management of human resources[23]. There is evidence that suggests that "good" or "high commitment" human resources management is associated with better performance[24] but just what those practices are, and how performance is measured, is not always so clear or consistently measured[25].

The influence the effectiveness of management practices related to human resources together with improved environmental factors such as working conditions, organizational climate and internal consistency of the health system should not be under estimated. Poor operating environments or excessive work-loads, fatigue owing to moon-lighting, lack of clinical policies and procedures which are evidence based, lack of necessary competence (including attitudes), lack of supervision, leads to widespread poor quality issues in the health services, both public and private. These quality issues can be either clinical quality (measured objectively as clinical performance) or patient satisfaction (quality measured subjectively as perceived by patients).

[22] See Discussion Document Draft HR Strategy 4th August 2011 Annexure B15 Public Health Specialist and Professionals in the New PHC Model
[23] Martineau & Martinez, 1997; Buchan, 2004
[24] Buchan, 2004
[25] Gould-Williams, 2004

Some of the key issues to be addressed with regard to management of the workforce are listed below. Many more exist and will be incorporated as part of the consultation process into the final HR Strategy document.

a. *Provincial Human Resource Plans.* Provincial Human Resource Plans are developed in a template format prescribed by DBSA. In some provinces they are documents used for the operational process of planning and managing human resources and in others they are merely documents which meet DBSA requirement and are not a management and workforce development tool used by the NDOH and provincial health departments. UKZN Department of Health made the recommendation that the format of the HR plans should be reviewed and aligned for purpose with Strategic Transformation Plans, and other provincial and national planning and budgeting processes. A review of HR Plans was not able to provide meaningful information on the HR 'gap', and how it should be filled to provide adequately staffed service establishments, due to data weaknesses and different time frames of HR Plans.

b. *Staff turnover and absenteeism.* Staff turnover for health professionals in most provinces is significantly high, in some provinces as high as 80% per annum. This is linked to retention and attraction of health professionals in the public sector and is an issue to address in order to develop a stable and well capacitated health workforce. Absenteeism is a reported problem which needs investigation.

c. *The Occupation Specific Dispensation Adjustments to Pay and Careers.* Besides addressing annual general salary adjustments and restructuring a range of benefits the new Occupational Specific Dispensation (OSD)[26] had as its objectives:

   - To introduce revised salary structures per identified occupation that caters for career paths, pay progression, grade progression, seniority, increased competencies and performance with a view to attract and retain professionals and other specialists.
   - To replace the existing Scarce Skills Framework for the public service with the introduction of the revised salary structures.

   Groups of professionals were to commence the OSD in 2007, 2008 and 2009. The theory agreed to is progressive, flexible and intended to address specific occupational needs. *Unfortunately the health OSDs were under-budgeted and poorly implemented, with some negative consequences.* The opportunity to differentiate inhospitable working locations was lost and scarce skills are no longer recognised and reimbursed better. Authorities to conduct RWOPS were not re-evaluated after the increases, resulting in more public remuneration without adjustments for private work.

[26] Public Service Coordinating Bargaining Council Resolution 1 of 2007 (signed 05th July 2007)

d. *Moonlighting and RWOPS. Moonlighting and RWOPs pose a challenge to the productivity of the health workforce*. It is common knowledge that public sector professionals 'moon-light', with or without permission, and that this reduces their productivity significantly and is a contributor to poor quality care[27]. There is evidence that doctors, in particular, use official service and teaching time to conduct their RWOPS private practices. '*Ghost workers'* are another problem where administrative creativity results in a fictitious employee receiving a salary and also giving the impression that the numbers of employees are higher than they are.

   Section 30 of the PSA provides for any public servant to undertake *"Other remunerative work"*. This is known as RWOPS (Remunerative Work Outside of the Public Service). The law prevents every employee from performing or engaging to perform *"remunerative work outside his or her employment in the relevant department, except with the written permission of the executive authority of the department."* The executive authority is required *"at least take into account whether or not the outside work could reasonably be expected to interfere with or impede the effective or efficient performance of the employee's functions in the department or constitute a contravention of the code of conduct contemplated"* in the Act. This statutory provision is also being widely abused and should be much more closely managed. Private work performed in official hours definitely interferes with or impedes the effective or efficient performance of the employee's functions.

e. *Productivity and performance management.* Most private employers have performance management systems. The Public Service Regulations provide for performance management too but they are generally poorly implemented:

   > *"Departments shall manage performance in a consultative, supportive and non-discriminatory manner in order to enhance organisational efficiency and effectiveness, accountability for the use of resources and the achievement of results. Performance management processes shall link to broad and consistent plans for staff development and align with the department's strategic goals. The primary orientation of performance management shall be developmental but shall allow for effective response to consistent inadequate performance and for recognising outstanding performance. Performance management procedures should minimise the administrative burden on supervisors while maintaining transparency and administrative justice."*[28]

   *The implementation of performance managemen*t in the health workforce is essential to improving efficiency, productivity and quality of care. Productivity studies need to be

[27] Rispel L, et al, Centre for Health Policy, University of Witwatersrand, The Nature and Health System Consequences of Casualisation, Agency Nursing and Moonlighting in South Africa, Technical Report, December 2010

[28] Part VII A: Public Service Regulations

regularly undertaken for key service activities in order to make comparisons and highlight best practice to guide expansion in staffing establishments and ensure growth in graduate output is related to need.

*Productivity i*s the relationship between inputs and outputs and is concerned with how effectively outputs are produced and the value created by the production process. It is about creating high-value products and services in terms of quality, cost, pricing and timelines and is concerned with productive capacity building of people. In short it is about working smarter not harder. *There are a number of specific issues that undermine productivity and create a demand for more, rather than more efficient, personnel*. The dynamics are complex and need to be addressed. Addressing the productivity issues is complex and will be time consuming, some are politically sensitive, others are difficult because professionals are in short supply so it is difficult to clamp down for fear of losing the staff.

The real productivity measure is unknown and most of the known problems have not been researched or quantified. It is possible to conduct studies into workplace productivity and the National Productivity Institute offers a range of a service to assist employers to work smarter not harder.

f. Agreed competence frameworks developed/ reviewed for all health cadres

The starting point for performance management is to make sure that the employer and the employee have the same expectations. It cannot be assumed that a job title or professional rank will automatically express a common understanding of the 'scope of practice' of the employee. However if the competence framework is statutory or regulated by a single regulator (professional council) then it is easier to understand what can be expected of whom. *The challenge in the changing PHC and health system reform environment is to review the spread of depth of expected competencies across professions to ensure that there are no gaps and minimal overlaps (to avoid poor productivity).* The immediate need is for CHW, all MLW, nurse (staff/enrolled and professional) and doctor competence frameworks to be reviewed and adjusted appropriately.

g. *There is a need to introduce incentives for acquisition and demonstration of new prioritised competences (skills, evidenced based knowledge and attitudes/ behaviours).* The reward system needs to recognise performance and not qualification, which is the predominant current practice. Rewards can be any amongst a range from token recognition, through performance certificates, to promotion and remuneration improvement.

h. *Continuing Professional Development*. To enhance skills and competencies and reward them, requires i*mplementing comprehensive ongoing training and development at all levels in line with agreed national competence framework.* The objective must be to determine the national priority competencies and to focus reward on those contributing to these priorities. In that way the reward system will contribute directly to addressing

priorities. Of course the training and development must be available and accessible to staff. It is necessary to link reward to performance as a result of gaining competencies.

i. *Management competency*. *The Minister of Health has highlighted a management and leadership competence as a major reason for the problematic performance of districts and hospitals.* A recent study by the DBSA demonstrated that only a small portion of district and hospital mangers are measurably competent for their jobs. Clinicians report that they find doing their job difficult as they have managers responsible for facilities who do not understand the task.

There are not the necessary competency requirements for appointment to management posts in the public health sector. In the Human resources domain, all public sector health care human resource managers should have the following at least have the following in addition to general health care management skills:

- possess formal general management qualifications, including training in best practice human resource (HR) management
- undergo training in specific government policies and procedures relating to HR, recruitment, induction, procurement and finance
- have competencies in soft leadership skills fostered through mentorship and training, and assessed through upward feedback mechanisms
- be managed against performance targets that include key performance indicators in HR
- Ensure clear succession planning for managers who are successful and who are, consequently, promoted in order to ensure sustainable services

Levels of HR Management Interventions in the Health System[29]:

Stewardship of HRH (Macro)

• Senior management of public sector HRH

• Engagement with the private and NGO sector

Public sector context (Macro)

• Decentralization of human resources functions

• Other specific initiatives on human resources

Core administration of human resources management (Meso)

• Job descriptions, performance review

[29] WHO, Assessing Financing, Education, Management and Policy Context for Strategic Planning of Human Resources for Health.ThomasBossert, Till Bärnighausen, Diana Bowser, Andrew Mitchell, GülinGedik.World Health Organisation 2007

• Career path (job classification system, promotion)

• HRH deployment (recruitment, transfer, discipline, grievances, termination)

• Personnel records (Persal) improvement

• Health management information system

Institutional environment (Micro)

- Working conditions (adequate supplies, equipment)
- Intra-system communication

Facility organizational practices (Micro)

• Teamwork

• Vision, high standards, clear expectations

4.22. PROFESSIONAL REGULATION AND QUALITY

Health professions are regulated by the Health Professions Council of South Africa (HPCSA), South African Nursing Council (SANC) and Pharmacy Council of South Africa (PCSA).The Professional Boards are co-ordinating bodies for all the healthcare practitioners registered. HPCSA has a wide range of 26 professions so uses a system of twelve boards that are each established for a specific profession to deal with any matters relating to that specific profession. These boards consist of members appointed by the Minister of Health, educational institutions and nominated members. They were established to provide better regulation over the training, registration and practices of practitioners of health professions, and to provide for matters arising with the professions.

Regulatory responsibilities include determination of the scope of practice of professionals, quality of qualifications and competencies, aspects pertaining to registration, education and training, professional conduct and ethical behaviour, ensuring continuing professional development, and fostering compliance with healthcare standards.

Professional quality assurance

Professional councils have been accused of protecting errant practitioners and of siding with government or their professions instead of protecting the public from poor or unethical practices. This is a regular accusation all over the world and the Councils must increase transparency and remain autonomous and vigilant. The Consumer Protection Act will further hold professionals and these bodies accountable and there is to be an Ombudsman to investigate claims of prejudice against patients.

Continuing Professional Development (CPD)

CPD is meant to ensure that practitioners remain up to date with professional and clinical developments. It is an important way of making sure that practitioners do the right thing

based on evidence and approved practice. The aim must be to implement obligatory CPD for all professions in line with professional registration requirements.

To ensure quality of professional practice it is necessary that:

- Professional Councils must implement obligatory CPD for all professions as a part of their professional registration requirements;
- Councils must increase transparency and remain autonomous and vigilant.

4.23. INFORMATION ON THE HEALTH WORKFORCE

Information for planning and managing the health workforce is very problematic. The use of the public service information system, Persal, is not accurate and various professional categories, for example medical specialists by category are not captured. The HPCSA does not provide accurate information on the professions and this could be easily corrected with the required information being captured on an annual basis when professionals reregister. There is not a comprehensive source on all practitioners in the private sector. Medpages provides information on medical and dental practitioners but is not perceived accurate on the other professions. *All information gathered for the Draft HR Strategy is gathered as a 'once off'* and this is not adequate for future health workforce planning and management. There is the need for an agreed national data set with inbuilt quality assurance to ensure accuracy and timeliness. A reason for the significant health workforce problems identified in this HR Strategy development process is that trends in the workforce are not monitored, evaluated and acted on.

4.24. HEALTH WORKFORCE PLANNING

The leadership, structures, processes and data have not been in place for effective health workforce planning. The lack of planning results in an 'unmanaged' health workforce, where attrition, shortages, poor access, and dissatisfaction become part of the culture of health professionals in the South Africa health system.

Service planning is essential for effective workforce planning[30]. The Minister and NDoH are responsible for the stewardship of the entire health system and not only the public health services. This includes taking responsibility for service planning and the impact on workforce planning. Service planning is, however, a provincial competence and effective plans are needed at provincial level to integrate into a national planning framework and process.

The Integrated Health Planning Framework/Service Transformation Plan process in each province is an important step towards national service and workforce planning, but the results do not provide a basis which informs staffing requirements to meet the health

[30]See Discussion Document Draft HR Strategy Annexure B14 Review of STPs and HR Plans

workforce 'gap', or to plan developments in the health workforce. Provincial departments do not use the same reporting format or planning assumptions for determining the HR gap and needs, and hence data may be presented in different formats for the various provinces. Different data is also available on the HRH gap for a single province. A province may use vacancy data, developing country norms, IHPF gap data, or service needs data, and the methodology for use of these sources differs. This indicates the need for:

- National norms which would generate a NDOH approach for data source and methodology for determining the gap in HRH in South Africa, and financing the gap;
- The NDOH methodology should reflect achievable and ideal planned targets (current targets are often not achievable or funded);
- Development of an NDOH methodology or template for monitoring and evaluating HR planning, utilisation and development in provinces
- Development of a stronger HR planning and management human resource capability in all provinces;
- The need to align reporting on Human Resources for Health to World Health Organisation monitoring and evaluation, and information formats;
- Capturing and analysis of data in a format that enables the development of comparative national and international analysis.

HR Plans and STPs reviewed do not all fall within the same time frame and MTEF period. In some cases difficulty was experienced in securing an up to date plan for the MTEF 2011/12 – 2013/14. A number of the plans start from 2008. Annual updates of STPs and HR Plans were not available, following the development of the initial plan. Most figures produced are not achievable targets. Based on a review of provincial STPs and HR Plans the following is recommended in the first year of the national HR Strategy:

- To develop STPs which are updated and for the same MTEF period which indicate current and future staffing requirements and the costs implications
- Norms used for the STPs may be based on IHPF, adjusted province specific norms, or new national norms, as long as the norms are specified in the STP (it should be recognised that norms will change over time with the introduction of new technology and changes in skills mix
- To develop updated HR Plans (where these are not available) which develop in more detail a HR Plan to realise the STP and Treasury MTEF Strategic Plans (and are aligned to the latter plans)
- Detailed information, amongst other issues, for: current staff and the gap, workforce development initiatives, current bursaries and projected bursaries, provincial training and development programmes, current Community Service doctors and projected, current learner-ships for Mid-Level Workers
- The updated HR Plans and STPs should be informed by the NDOH HR Strategy.

4.25. A WORKFORCE TO MEET THE REQUIREMENTS OF NEW SERVICE STRATEGIES TO IMPACT ON HEALTH OUTCOMES

The PHC system is theoretically district based and delivered from clinics and health centres. It is still fragmented with some municipalities running some PHC services and with too much PHC being delivered in hospitals. There is insufficient focus on prevention and no systemic structure for engagement at community level.

An important deficiency in the community interface with the health system is in trauma management and emergency medicine. The frequent need for ambulance transport for maternity patients plus the high and sustained levels of violence in communities makes it critical that Emergency Medical Services (EMS) are addressed simultaneously with the PHC re-engineering including referral systems..

Whilst PHC services have been prioritised in provincial health budgets, they not delivered the necessary health outcomes. *The hospital sector at secondary and tertiary level has been de-prioritised leading* to reduced quality and capacity of this sector. It is important that there is agreement about the relative investment (money and workforce) in primary, secondary, and tertiary sectors so that there is a balanced health sector which ensures that patients are provided with accessible, quality good quality services at the appropriate level.

The proposed new PHC approach[31] will sharpen the focus on maternal, child and women's health, maintain the HIV and AIDS focus and be community based with a much stronger preventive focus. The service delivery model will still be district-based but with specialist clinician teams responsible for clinical governance in the district. The community base will be achieved through ward based community health workers. Between the two a School Health Programme will be aimed at eye care, dental and hearing problems, immunisation, teenage pregnancy, abortion, HIV and AIDS, and issues of drug and alcohol abuse.

Extensive work has been done on optimal structures and staffing for community engagement and for clinical and other support. The relations between the different service levels remain a challenge. Strengthened, accountable and auditable referral systems, amongst other things, will be essential to the success of the new PHC system. The critical issues that are receiving attention and that must be actively promoted to ensure that the new PHC model is implemented and sustainable are:

[31] For a more detailed description of the reengineered PHC model see Discussion Document Draft HR Strategy 4th August 2011 Annexure B1.

a. *Task shifting and defining new roles*

The 'scopes of practice' of all health care professionals need to be reviewed and revised with a view to shifting tasks to the category of worker that can most efficiently perform the work. In many instances this will mean providing in-service training and continuing professional development to ensure that competencies are developed appropriately. This includes redefinition and extension of the scope and roll of the current Enrolled Nurse (EN) and registration of a new "Staff Nurse" (SN) category for PHC, increasing competencies of pharmacy assistants and reaffirming the role of medical officers in clinical care (as opposed to playing a PHCN role and referring so much to specialists).

b. *Community Health Workers (CHWs)*[32]

Historically the role of the CHW has been varied and not defined in national HR policy. The role of the CHW is central to the PHC re-engineering initiative. The wide range of auxiliary workers trained and employed in vertical programmes need to be consolidated to a common core CHW set of competencies, predominantly focusing on maternal, child and women's health plus basic household and community hygiene. Most CHWs will be employed in the Public Service and organised as members of teams, supervised by professional nurses, responsible for pro-active community outreach at home and community level.

CHWs have been introduced into South Africa over recent years mainly through NGOs. They follow the international model whereby local people are recruited to take responsibility for working with a defined population, based on an agreed number of households. International evidence suggests that CHWs are best utilised to:

- Strengthen demand side (e.g.. increase the number of women seeking ante natal care and a skilled birth attendant)
- Promote health and prevent illness (e.g. advocating for immunisation and the use of bed nets where appropriate, for example.)
- Encourage appropriate referral to a health clinic for minor ailments and injuries

Roll out of CHWs as part of an extended primary care team will require the following actions:

- Agreement on a standardised scope of work
- Agreement on the competences required by CSWs
- Agreement on a training and supervision package

[32] For more detail on Community Health Workers and their role in the reengineered PHC model see Discussion Document Draft HR Strategy 4th August 2011 Annexure B2.

- Agreement on the terms and conditions of service (CSWs can either be employed on a part time basis or receive a stipend plus expenses plus equipment)

c. *Nursing Profession*
There are insufficient professional nurses, trained midwives and PHC trained nurses in the public health service to implement the re-engineered PHC system. Additional graduates must be trained and qualified nurses attracted back to the profession. Community based nursing as a career must be made more attractive by improving the working environment and creating incentives for specific jobs. There are existing vacancies on the staff establishments of every province which could be used immediately into which to recruit new staff. However the total staff establishments will need to be redesigned and posts redefined for the PHC model. It will be necessary to re-orientate many nurses to the new scopes of practice in the nursing categories and CHWs.

d. *Specialists in PHC family health and district support teams*
The principle is to employ a team of specialist in each district to provide clinical direction and oversight. Challenges will include the pure deficiency of numbers available plus the very clinical, hospital oriented insights of most clinicians. It is the historical tendency of many specialists to guard their domains rather than deliberately task-shift to other qualified professionals. Clinical competencies at a specialist level will not automatically translate to improved clinical outcomes. It will be necessary to re-orientate clinicians to community health thinking within which they can promote quality clinical care at the PHC level. A further challenge will be to encourage specialists to work in a team with the full PHC complement of staff from CHWs through the nursing ranks and medical officers to other specialists. Clinicians lose their clinical acumen if they are not able to actively practise in their chosen disciplines. There may be a tendency to gravitate to hospitals and to private sector attachments to fulfil this need, thus depriving the PHC system of the intended clinical support, and this will have to be guarded against.

e. *Pharmacy assistants and other mid-level workers*
The second largest expenditure item in the health system after staff is medicines (and pharmaceutical accessories). There are insufficient pharmacists to manage the supply chain to the PHC level (home-based medication for long term conditions, clinics and health centres). The solution that was used in the past was to establish a competent cadre of Pharmacy Assistants. Principal Assistants will be used as members of the new PHC specialist teams. This will mean training many more, reviewing the curriculum to fit an expanded scope of work and orienting the remaining team to the role of this cadre.

f. An important mid-level cadre of health professional to the new healthcare model is *the Clinical Associate*. This Clinical Associate (CA) will initially work in district hospitals to strengthen health care services in the district. The district hospital was felt to be the ideal setting for the CA due to its well-defined and manageable level of care where it is possible to be specific about the scope and practice limits for the CA. The CA will be part

of a team in different units in the district hospital (emergency unit, outpatient departments, medical and surgical units, and maternity). In operating theatres, the CA will assist the doctor in basic procedures like incisions, drainage and evacuations. The regulation of the CA will rest with the HPCSA. The scope of practice of the CA is intended to fill the gap that exists in district hospitals where a large proportion of the clinical work of doctors is related to emergency care, diagnostic and therapeutic procedures and in-patient care. This differs from the scope of practice of the PHCN practitioner at the clinic where first contact care, chronic care and prevention are most important.

g. *The Clinical Associate category is an important Mid Level Worker who can be used to address the shortage of doctors at district hospital and community health centre level. Clinical Associates* are currently being trained at Wits, Pretoria and Walter Sisulu faculties of health sciences. About 1350 are required for district hospitals (5 per district hospital). At current output rates it will take 17 years, until 2028, to train this quota to staff all district hospitals, which may indicate the need for a steep increase in Clinical Assiociates[33].

h. Several *other Mid Level workers* have been important members of the health care team in underserved areas in the past, including laboratory assistants and various rehabilitation assistants. The implication of developing assistant cadres is that they cannot be short-term stop-gap solutions because they too need career mobility and security. Termination of a cadre for replacement by a more qualified cadre can only be justified if there is provision for bridging courses to allow the mid-level worker to advance too, and supervision structures provided. An intensive period of review of new roles and scopes of practice is required to meet new health and service challenges.

i. Environmental Health Officers (EHOs)

Environmental health is defined as a municipal function in the Health Act. Many social and environmental determinants of health (refuse, sewage, food handlers, solid waste management, vector and vermin control, etc) are closely associated with preventable disease, especially communicable diseases such as diarrhoea and pneumonia. The fragmentation of EHOs from the remaining PHC team is detrimental to comprehensive community based PHC. The EHO will be a member of the new PHC team. This means that the policy and process for integration of this cadre into the district health system will need to be refined and implemented as the PHC model is rolled out.

j. General Medical practitioners/Medical Officers

[33] For more detail on Clinical Associates and their role in the reengineered PHC model see Discussion Document Draft HR Strategy 4th August 2011 Annexure B11.

Medical Officers (including interns, community service doctors and private general practitioners) are in short supply. They tend to be fully engaged in clinical services and have little time to become involved in the community services at clinics and health centres, let alone home-based care. The negative consequences are that they are often unaware of the patient in the home or workplace context and they fail to invest in improving the competence of the nursing and mid-level workers who are able to reduce their clinical workload. This becomes a vicious cycle, patients believe that they have to see the doctor, by-pass the clinics and exacerbate the doctor's workload, though often unnecessarily. Productivity and efficiency deteriorate and all concerned are frustrated. In the private sector, especially in urban areas where specialists are concentrated, the GP is frequently reduced to seeing minor ailments and does not perform the clinical work for which a medical degree is intended. Private GPs must be actively recruited to serve in the PHC system and district hospitals.

*There is a historical tendency in the public service to create the most senior MO posts in urban areas and big hospital*s. This is argued based on a hierarchy of numerous doctors needing a 'chief'. This is not sensible design and the most senior doctors should be employed where the staff numbers are few and the spectrum of clinical services is the most diverse owing to paucity of referral options. MOs in large centres and hospitals with specialist can be junior since they have a good support system.

The role of the generalist doctor must be re-established in the PHC team as an important clinical care and teaching role. The MO/GP (and Family Physician where available) is a key player in patient referral to the appropriate level of care, thus playing an important role in financial viability as much as in patient care and satisfaction.

k. *Emergency Care Workers*
Even in a well-functioning and staffed PHC system with optimal preventive activities there are always patients who require rapid transfer to a more sophisticated clinical care environment. Many are casualties in home or on the streets. The historical tendency has been to use nurses, often too junior to cope, to accompany critical patients in transit. The PHC system needs to know that it has a reliable ambulance and emergency service to back it up when the need arises. Properly trained personnel are indispensible. However it is essential that they have a smooth interface with the facilities (clinics, health centres and the hospitals) and the EMS cannot be a totally separate entity or part of a fire service. The role of a new cadre could be considered which is is a cadre skilled to meet emergency needs in the home. These skills include triage, stabalisation, CPR, maintenance of airways, pain relief etc..This was done in the UK very successfully and limits the transfer to hospital.

l. *Critical mass and minimum staffing norms in district regional and tertiary hospitals* are required to ensure hospital infrastructure is strengthened and not undermined. Similarly new and amended roles need to be introduced to strengthen hospital staffing in the context of limited numbers of doctors, and limited staffing budgets.

The policy and practical implications of development of new cadres, professions, roles and scopes of practice are many. They include:

- Professional associations and Councils must review scope of work
- Academic institutions must review curricula and capacity to improve competencies and contribute to the redefinition and development of new roles and scopes of practice for all health cadres
- CHW competencies must be agreed, curriculum must be standardised and services providers identified to provide re-training
- CHW posts must be created in the public service (provinces), budgeted for and CHWs absorbed
- Community based nursing posts must be incentivised
- Programmes for re-orientation of clinicians to holistic community health approach will be necessary
- Policy guidelines, incentives and management will be essential to prevent specialists gravitating out of the PHC environment
- Management and oversight of pharmacies will have to be included in the scope of practice of a Pharmacy Assistant
- Choice of PHC mid-level workers (notably pharmacy) will be a permanent policy direction
- Environmental Health Officers must be integrated into the district health PHC teams
- General medical officers (GPs) must be deliberately designed into the PHC team
- The most senior MO posts must be in the smaller and more peripheral hospitals in districts
- EMS personnel should be a part of the district health service and be trained with paramedical skills triage, first line treatment and stabilisation
- Staffing of hospitals must be reviewed and strengthened.
-

It is proposed that the South African HRH design to improve health outcomes will have five key foundations:

1. CHW at community level

There will be a large community based workforce with illness prevention/health promotion demand side strengthening competencies

2. Predominantly nurse-based system

The system will remain predominantly nurse-based with the following specific elements:

a) The bulk of Enrolled Nurses to be converted to a new category of Staff Nurse with a revised scope of work and increased community based clinical competencies for deployment in district teams with CHWs
b) Revised scope of work and increased clinical competencies of Professional Nurses
c) The numbers of Professional Nurses working in the system will be increased
d) Professional Nurses will be supervisory in community services and responsible for nursing care in all levels of hospitals

3. Introduce and expand mid-level workers

There will be a significantly increased reliance on MLWs, specifically:

a) The new cadre of Clinical Associates will be increased in number and competencies will be increased so that they can 'shift/share' some tasks performed by medical doctors

b) Advanced Pharmacy Assistants will be increased in number and competencies to manage medicines and pharmaceutical products in district facilities and services

4. Expand general medical doctors

There is a need for more general medical doctors at both PHC and hospital levels

5. Expand specialist doctors and nurses

There is a need for planned expansion of specialist doctors and a an increase in specialist nurses

6. Expand Public Health Specialists and appoint them to lead public health strategy

5. NATIONAL HR STRATEGY: 2012/13 – 2016/17 (HRH SA 2030)

5.1. SHORT, MEDIUM AND LONG TERM STRATEGIC HRH PLANNING

The HRH plan must be designed for the nation and it must be realistic and achievable to be useful. The strategic and operational plans of the various role-players, notably the NDoH which has the stewardship responsibility for the whole health system, will be far more detailed than the national HRH plan.

The lead time to develop and mould the human resources required to staff a health system that responds optimally to health needs is long. There is also a constantly changing environment and service needs are not always predictable in the long term. Because of this the strategic planning timetable really needs to begin with long term objectives that target the macro-form (design) of the system such as whether the system will be nurse based, general doctor based or specialist based, whether MLWs will form a substantial part of the design or be the exception to fill niche needs, public private provider mix, and whether scope of work and job design will be centralised or decentralised (task shifting and sharing), etc.

The medium term strategy should focus on sustaining and entrenching interventions that aim to support decisions on 'form', monitoring these interventions and evaluating whether they are achieving the desired outcome and making adjustments to competency frameworks, training, curricula, establishment structures, remuneration and incentive structures, etc. It is also a period for starting other more complex interventions that could not be addressed in the short term owing to capacity, economic and other constraints.

The short term strategy is the plan for immediate action in a relatively predictable environment. It is the opportunity to lay foundations for the medium and long term. This phase of the whole strategic process is likely to contain more planning and less M&E than the other phases. It will involve data gathering, improving planning systems, consultation, professional and technical regulatory amendments and 'quick-gain' interventions. Care must be taken not to implement these quick gains in a manner that will obstruct the longer term strategy. If personnel are trained and employed to fill a short term need but are not part of the long term plan they will become a costly albatross for the health system.

The time horizons need to be agreed upon but are generally much longer than anticipated. It is proposed that time frames should be:

SHORT	1 to 3 years	2011/12 to 2013/4
MEDIUM	3 to 5 years	2011/2 to 2015/16
LONG	10 to 20 years	2021/22 to 2029/30

The framework for a strategic plan is laid out as follows:

a) Strategic Priorities	Broad priority areas to focus on
b) Strategic Objectives	Several major focus strategies that will collectively realise the priority (with a stated indicator and target)
c) Interventions	Lists of actions that should be planned and executed to achieve the strategic objective (with responsible person and timeline)
d) Activities	These will follow and form a part of the operational or work-plan of the responsible persons To these must be added indicative budgets

The immediate aim should be to obtain national consensus with the major stakeholders regarding the Strategic priorities, Strategic objectives (with stated indicators and targets) and key interventions for the full period to 2030.

5.2. A STRATEGY FOR HUMAN RESOURCES FOR HEALTH FOR SOUTH AFRICA FOR 2030

The past fifteen years has been a period of health workforce redundancy and vacancy freezes, 'shortages', graduate unemployment and widespread cuts in education and training provision. Recently this trend has begun to reverse slightly. In this time frame health outcomes have worsened and in rural areas where access should have improved this has not been realised.

A vision to improve access to health care for all by 2030, makes it is necessary to develop and employ new professional and cadres to meet policy and health needs, to increase workforce flexibility to achieve this objective, to improve ways of working and productivity of the existing workforce, to improve retention, increase productivity and revitalise aspects of education and training.

Achieving this vision requires the organisational infrastructure for education, training and service development, namely effective and efficient Academic Health Complexes. It also requires improved management of health professionals and cadres and improvement in their working lives.

Realising the vision for 2030 requires firm, accountable and consultative leadership, well informed by information and planning capacity, processes and tools.

These eight thematic areas have informed the development of the HR Strategy and the strategic priorities:

5.2.1. Leadership, Governance and Accountability

Leadership structures, consultation accountability

The NDoH will play a consistent leadership role in workforce planning. It will provide information, direction and oversight for Human Resource for Health, enable provincial planning and ensure capacity and alignment with national priorities and outcomes. NDoH will provide the enabling framework to ensure the structures and processes for transparency, consultation and accountability, in Human Resources for Health. *The NDoH Health Workforce Secretariat* for planning, production and management of the health workforce, and the *Health Workforce Strategic Committee* will lead the national HRH and workforce planning process. The Health Workforce Strategic Committee will have working groups for:

HRH Workforce Planning, Minister's Talent Strategy for a Re Engineered Health System(professionals associations, care groups, education institutions on new roles, cadres and scopes of practice), Education & Training, Minister's Strategy for 'Improving Working Lives of Health Care Workers, Rural and Remote, Academic Health Complexes & the Private Sector.

Institute of Leadership and Management in Health Care

Leadership and management is required across the health workforce and at all levels. NDoH needs to provide direction and oversight, whilst facility managers and clinicians are also required to lead and manage at service levels. The development of an NDoH Institute of Health Care Leadership and Management in Health Care is proposed. The Institute will:

- Detail competency frameworks for leadership and management in the health sector at all levels
- Design and commission courses for in service training
- Design and commission courses for career development offered in Higher Education Institutions
- Collaborate with international institutional offerings in leadership and management in health care.

International Collaboration and the WHO HRH Workforce Alliance

Leadership requires keeping abreast of developments. There are international organisations and initiatives with which closer collaboration will be established. Methodologies and lessons will be applied in the South Africa context.

5.2.2. Health workforce information and health workforce planning

NDOH Centre for Health Workforce Intelligence

A reliable and live information capacity is necessary to inform health workforce planning and management. The development of a *Centre for Health Workforce Intelligence in* NDoH is proposed. The Centre will provide intelligence on the health workforce which informs evidenced based workforce planning and development; and empowers leaders to make meaningful and

implementable decisions with regard to the health workforce to achieve improved health outcomes.

National and Provincial Health Workforce Committees

The NDoH Health Workforce Secretariat for planning, production and management of the health workforce, and the *Health Workforce Strategic Committee* will be serviced by the Centre. The Health Workforce Secretariat will develop *provincial Health Workforce Committees* and ensure capacity in health workforce planning, and integration of national workforce planning initiatives, and information to manage HR.

Leadership skills for workforce planning

Workforce planning requires leadership skills to implement changes as well as technical skills to identify the requirements for change. Leadership skills therefore need to be developed within the provincial Health Workforce Committees, and within the HR functions at facility, district and provincial levels.

Integration of service, workforce and financial planning

Lack of integration of planning is evident HR and STP Plans. Future planning needs to involve integration of workforce, service, financial and staffing plans, and integration of professional groups, Care Groups, and health care interventions. Health workforce planning must be strategic and integrate all factors that affect the workforce. Heath workforce planning is not simply a number crunching modelling exercise.

Planning with a long term focus

Workforce planning requires short, medium and long term interventions. The long term perspective is especially important because of the complexity of the workforce and the long training periods for some health care professions. Education and training long term objectives do not always sit easily with the short term imperative of provincial health budgets. Hence the need for Heath Workforce Committees to undertake workforce planning with long term perspective, and appropriate stakeholder integration.

Figure 5 provides a diagram of the proposed structures for Health Workforce planning in NDoH.

Figure 6 a conceptual diagram of the tasks of health workforce planning to be under taken jointly with NDoH, provincial departments of health and other role players.

Figure 5: NDOH: Health Workforce Structures for HRH

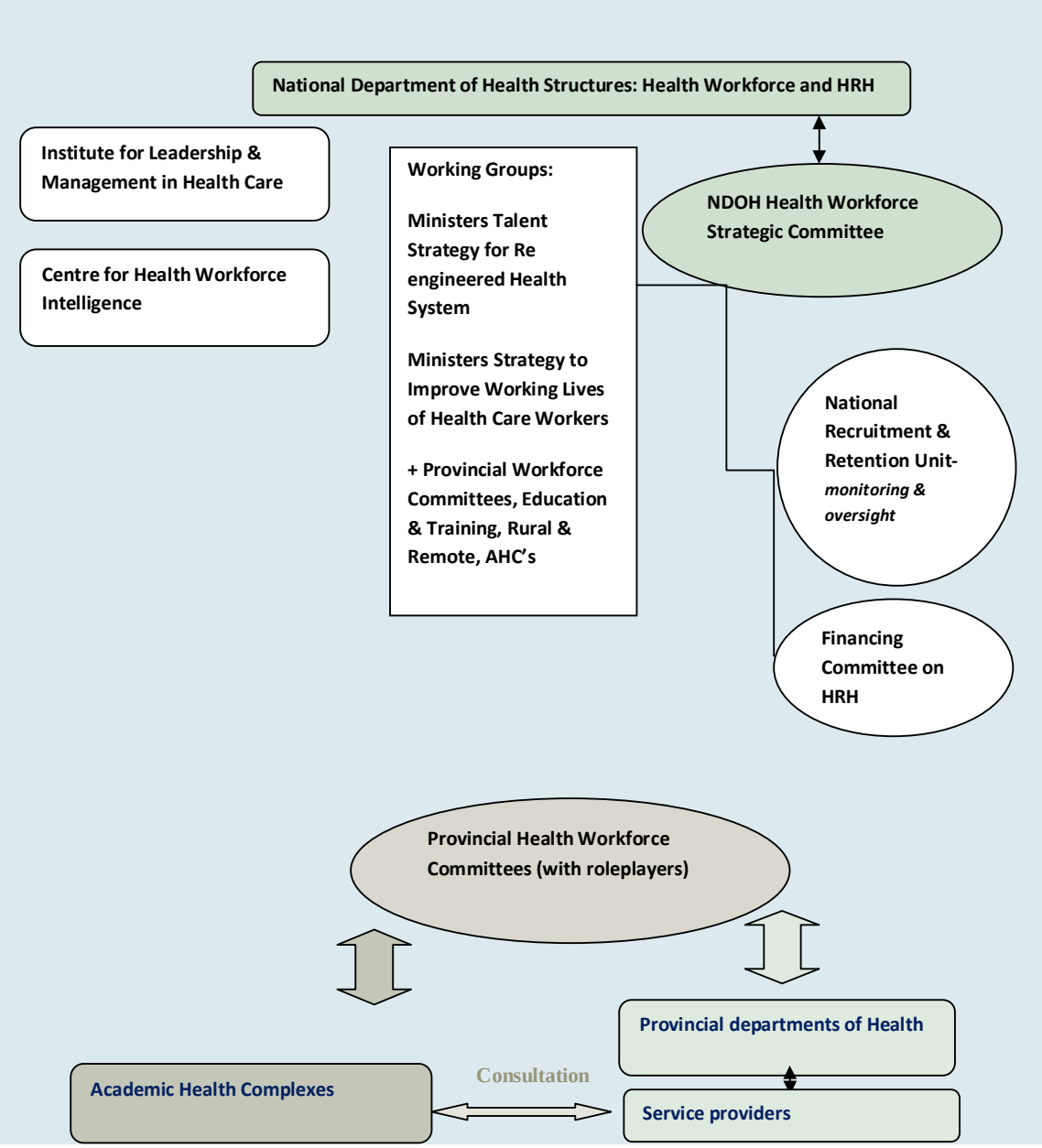
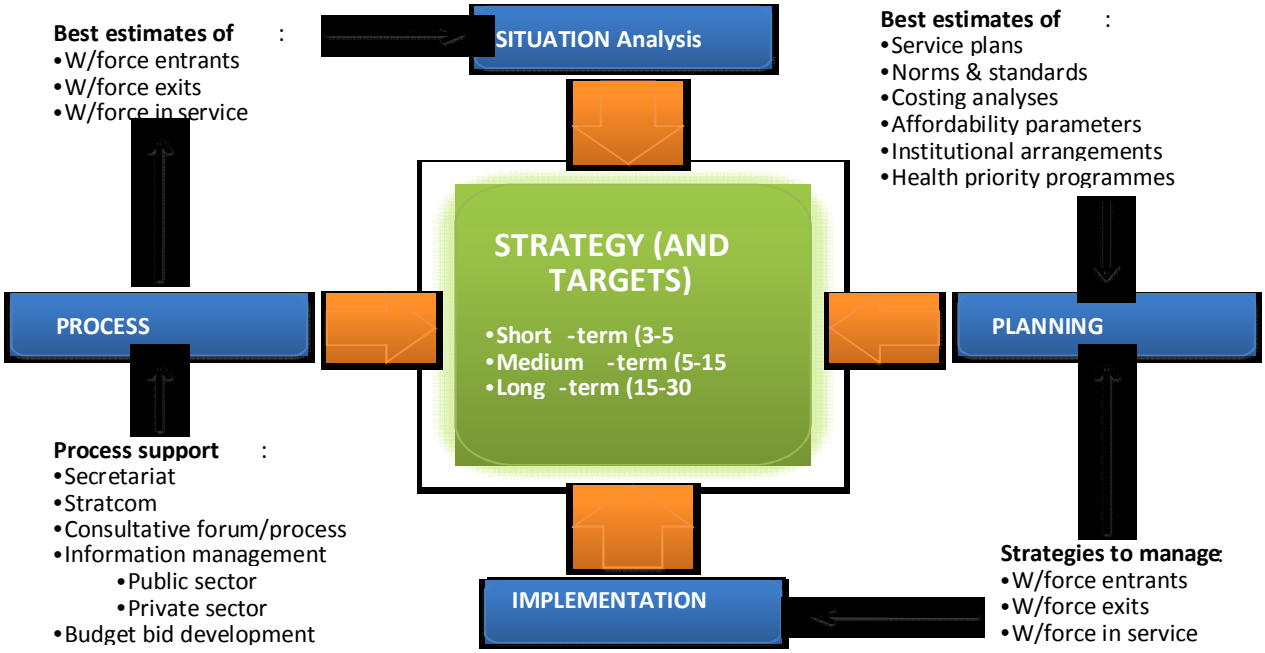


Figure 6: NDOH: Core elements for national workforce planning – a Conceptual Framework



5.2.3. A workforce to meet service needs for the re engineered PHC model and balanced health care system

The HR Strategy, HRH SA 2030, proposes transformation of the health workforce to provide care delivered by skilled health professionals and health cadres for the future, to incorporate new technology and clinical developments, and address health outcomes. Key features of the new health workforce are:

- *Flexible and new working relationships and roles* using a range of skills and knowledge to meet public health, PHC and hospital care needs (changes in skills mix and introduction of new and amended clinical roles)

- *Multi disciplinary team working with different health cadres* working in a complimentary way towards a common goal and to go beyond provision of service in professional silos:

  For example, new PHC Outreach and Specialist teams

- *To maximise the range of health cadres* and their contribution to care, moving beyond only doctors and nurses providing care:

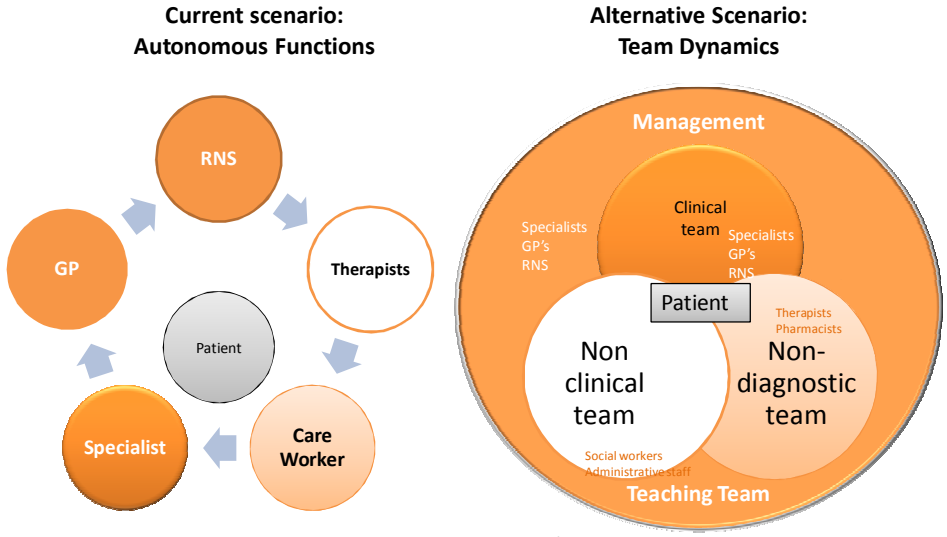
- Develop the Clinical Associate to assist doctors in District Hospitals and CHCs and thereby improve access to medical care

- Formalise the role of Community Health Workers as part of a team to provide access to community based Primary Health Care
- Incorporate the Principal Pharmacy Assistant in the PHC team to improve access to medication
- Consider complimentary/ support specialist medical, surgical and nursing roles in the hospital setting
- And this list needs to extend for all levels of the health service to develop new teams and new cadres, for Care Groups (e.g mental health and diabetes), health care interventions (e.g TB), public health strategies, changing professional roles, and levels of care (in clinic and hospital settings).

❖ *An expanded workforce to meet future demand* and ensure access for all. The current workforce is not accessible in all areas, for all of the population. Ways of efficiently expanding the workforce and improving access, for hospitals, and vespecially to rural and peri urban areas, will be investigated and realised.

Figure 7: Scenarios of collaboration of health professionals

Appropriate use of team work and different levels of health care workers can release capacity and produce more efficient use of resources.



•Non holistic/comprehensive care
•Autonomous/uncoordinated care
•Excellence self-referential not results driven
•"Limited" scope of responsibility

• Holistic/comprehensive care
• Joint/coordinated care
• Evidence Based & results driven
• JOINT Comprehensive responsibility
• Expand teams with new skills/careers

5.2.4. Upscale and revitalise education, training and research

Planned expansion must accompany evaluation of productivity

The health workforce is dedicated and hardworking, in many facilities overworked due to service demand and staff shortages. We need more staff and the *NDoH is committed to expansion of the numbers of doctors, nurses and other health professionals*. Alongside expansion must come *reform, to change the ways staff work and productivity*, the way they are trained and how they are educated. It is also necessary to retain the health professionals we have. Realising the potential of the existing workforce, and expanding where it is necessary, is the aim.

Expansion and recruitment must be carefully planned to avoid the 'boom and bust' scenario experience of the United Kingdom where expansion was followed by cuts. A concurrent activity to expansion is to ensure a meaningful working environment and the funds for employing professionals so that we are not training for 'export', as is currently the case.

Recruitment of foreign trained health professionals

In the short term to medium term, the next five years, it will be *necessary to selectively recruit health professionals, especially doctors from abroad*. The strategy must be carefully targeted and ensure transfer of skills and benefit to the South Africa health system and South Africa health professionals. Priority should be given to recruiting academic health professionals who will train, transfer skills, and develop innovative service and health care interventions; and clinicians willing to work in rural areas.

Expansion projections and improved career pathways

Expansion of most categories of the health professions and health cadres is required and a departure point on numbers proposed expansion proposed is described in the Section 6 on 'Forecasting and Modelling the Health Professions'. *Improved career pathways for the professions and health cadres must accompany the expansion and development process* to as to provide rewarding and motivating working lives, and working conditions.

Minister's Talent Strategy for a Re engineered Health System

To implement the requirement for transforming and expanding the workforce the Minister has proposed a *Talent Strategy for a Re engineered Health System* as an initiative. This will involve the development of a review a definition of roles and scopes of practice, task shifting and sharing, new professional categories and new cadres, new team relationships and new health interventions, to meet the challenges of a health system for 2030, change health outcomes and improve access to health care for all. It will involve defining how to expand the workforce and improve access in the most cost efficient and clinically appropriate ways.

5.2.5. Creating the infrastructure for human resource and service development: Academic Health Complexes

The Academic Health Complexes will be structured and financed to provide the platform for revitalising education, training and research, and expanding services to rural and peri urban areas of need. Academic Health Complexes are the 'pace setter' of the health system and a country which values its health care professionals and wants a responsive health care system cannot afford not to prioritise the development of these complex institutions.

The refurbishment of Nursing Colleges and expansion of nursing on the Academic Health Complex platform will be realised given the central role of nurses in the South Africa health system, comprising about 80 percent of the professional health workforce. There is good evidence that multi disciplinary teams working is improved if different disciplines are trained in the same location and share some base modules.

5.2.6. Strengthening the management of human resources

Minister's Strategy to 'Improve the Working Lives of Health Care Workers'

To drive the improvement in the working conditions and lives of health workers the Minister has proposed an initiative *'Improving the Working Lives of Health Care workers'*. This will involve NDoH working with provincial departments of health, and especially the facility managers, lead clinicians and Human Resource Departments to address working conditions and issues which influence motivation in the work environment. This initiative will be locally based and driven, but will feed into a national process to improve the working lives of health care workers and thus retention.

5.2.7. Providing quality professional care

Ensuring quality is central to the re engineering of the health care system. The professional associations will work to improve oversight, and Continuing Professional Development will be enhanced. This will be reinforced by strengthened clinical audit at all levels against agreed, evidenced based clinical policies and protocols.

5.2.8. A special strategy to improve to health professionals in rural and remote areas

Improving access to health professionals in rural and remote areas requires a special strategy which prioritises and integrates a set of interventions. The short term interventions include retaining Community Service professionals and changing the foreign recruitment policy and management process; education strategies, financial incentive strategies, and support for professionals in rural areas.

5.3. VISION AND MISSION OF THE HR STRATEGY

5.3.1. Vision

A workforce fit for purpose to meet the needs of the re-engineered health system and measurably improve access to quality health care for all by 2030

5.3.2. Mission

The mission is:

- To ensure adequate numbers of appropriately competent staff in all locations (primary, secondary and tertiary) as a result of increased employment, production, recruitment and reduced attrition and,
- To ensure that health care workers have an optimal working environment and rewarding careers and this increase retention

Through

- strengthened leadership and management structures in the health sector
- NDoH and provincial leadership in recruitment and retention strategies
- workforce intelligence and effective planning
- new roles and scopes for health cadres
- expansion of the health professions and service workforce innovations
- the growth of the institutional capacity for service and health workforce development in Academic Health Complexes
- And, collaboration with stakeholders and key players including the private sector

5.4. STRATEGIC PRIORITIES AND MEASUREABLE OBJECTIVES WITH MEDIUM TERM MILESTONES FOR LONG TERM OUTCOME, 2030

Table 8: Strategic Priorities and Objectives HRH SA 2030

STRATEGIC PRIORITY	STRATEGIC OBJECTIVE & MILESTONE 2016/17
1.Leadership and Governance for HRH	1.7 NDoH HRH Leadership & Governance Structures 1.8 HR Strategy Implementation 1.9 Institute for Leadership & Management 1.10NDoH Recruitment & Retention Unit 1.11 NDoH HRH Financing Committee

	1.12 International collaboration
2.Intelligence & Planning for HRH: Centre for Health Workforce Intelligence	2.1.Electronic database 2.2. Data analysis & reporting 2.3. Information for oversight & leadership 2.4. Information on Academic Health Complexes 2.5. Develop Health Workforce Committees 2.6. Develop the Centre for Health Workforce Intelligence
3.A Workforce for New Service Strategies Ensuring Value for Money	3.1. Workforce for re engineered PHC 3.2. Public Health Units 3.3 Develop productivity studies & norms and standards & enhance the *Minister's Talent Strategy for a Re engineered Health System* 3.4. Improved provincial STP & HR planning 3.5. Norms and standards for hospitals with adjustments for training sites
4.Upscale and Revitalise Education Training and Research	4.1.Develop and implement *Minister's Talent Strategy for a Re-engineered Health System* 4.2.Growth of HEI's in consultation with stakeholders, including rural campuses 4.3.Refine and develop HRH SA 2030 strategy scenarios for all categories of professions and cadres 4.4. Implement strategy on the nursing profession and form Nursing Workforce and Education Committee 4.5. Institutionalise training for MLWs and CHWs 4.6. Revitalise clinical research & innovation 4.7. Ensure financing of health professional training & development 4.8. Plan training of health professionals outside SA 4.9. Plan growth of academic clinicians in HEI's 4.10. Minister's communication intervention on the value of health cadres
5.Academic Training and Service Platform Interfaces	5.1. Policy and governance framework for AHCs 5.2. Minister's National Advisory Committee and oversight regulatory structures on AHCs 5.3. Management infrastructure of AHCs – IT and academic staffing conditions 5.4. Five Flagship Academic Central Hospitals being developed 5.5. Nursing Colleges revitalised
6.Human Resource Management	6.1. Strengthen HR function at all levels 6.2. Implement compulsory accreditation of HR function

	6.3. Performance Management frameworks implemented 6.4. Minister's '*Improving the Working Lives of Health Care Workers Initiative'* designed and implemented 6.6 Review and implement remuneration and OSD
7.Quality Professional Care	7.1. Improve and maintain professional standards 7.2. Accredit academic training sites 7.3. Continuing Professional Development
8.Access to Health Professionals in Rural and Remote Areas	8.1. Short term strategies to recruit & retain professionals 8.2. Educational strategy in for rural and remote areas 8.3. Regulatory strategies on scopes of practice 8.4. Financial incentive scheme to attract professionals to rural areas 8.5. Personal and professional support for health professionals in rural areas

STRATEGIC PRIORITY 1: LEADERSHIP & GOVERNANCE FOR HRH

STRATEGIC OBJECTIVE 1: To provide proactive leadership and an enabling framework to achieve the objectives of the NDOH HR strategy for the health sector: HRH SA 2030[34]

1.1. **ESTABLISH HRH LEADERSHIP AND GOVERNANCE STRUCTURES FOR RESOURCING, PLANNING, PRODUCTION AND MANAGEMENT OF HUMAN RESOURCES, AND ENSURE PROVINCIAL HRH STRUCTURES ARE ESTABLISHED**

[34] Note: dates for performance and milestones for all Strategic Objectives have not been put in this Draft Strategy document but will be after Strategic Objectives and Interventions have been agreed

1.1.1. Appoint an *NDoH Workforce Secretariat* for planning, production and management of the health workforce (NDoH working group) with terms of reference;

1.1.2. Establish *National Strategic Health Workforce Committee*:

1.1.2.1. draft *terms of reference and membership & procedure guideline*

1.1.2.2. draft and apply national, provincial municipal and district roles and functions for planning, production and management of HRH; and ensure capacity for these levels for their functions

1.1.2.3. establish the following *Working Groups* with terms of reference:

- HRH Workforce Planning,
- Minister's Talent Strategy for a Re Engineered Health System(professionals associations, care groups, education institutions on new roles, cadres and scopes of practice),
- Education & Training,
- Minister's Strategy for 'Improving Working Lives of Health Care Workers,
- Rural and Remote,
- Academic Health Complexes &
- the Private Sector

1.1.3. Enhance the *National Consultative Forum on HRH and* hold one conference annually: Draft terms of reference and membership, procedure guideline (identify role players and stakeholders in the public and private sectors)

Key performance indicator: Structures established and operational

Milestone: Structures appointed and operational

1.2. ENSURE IMPLEMENTATION OF THE NATIONAL HR STRATEGY: HRH SA 2030

1.2.1. Appoint and empower a *HRH strategy implementation project management team*

1.2.2 Develop and execute a *HRH communication strategy*

1.2.3 Develop and manage the process for *stakeholder engagement*

1.2.4 Manage the *HRH strategy document annual reporting, review and revision*

Key performance indicator: Monthly reporting to NDoH Health Workforce Secretariat on HR Strategy implementation

Milestone:'HRH SA 2030' Annual Reports

1.3. ESTABLISH AN *INSTITUTE FOR LEADERSHIP AND MANAGEMENT IN HEALTH CARE* TO ENSURE A SOUTH AFRICAN HEALTH SERVICE WITH WORLD CLASS LEADERSHIP AND MANAGEMENT

1.3.1 Develop a *national management and leadership competence framework for* the health sector based on a needs analysis

1.3.2 Undertake a competency assessment of key post holders (using existing assessments such as DBSA) and *develop a 'gap analysis' for* leadership and management development

1.3.3 Develop an *inventory of health leadership and management training capacity* within and outside the health sector

1.3.4 Define *training and development interventions/ programme requirements* for leadership and management for the health sector, for in service training and HEI professional/career training

1.3.5 *Accredit providers and commission providers* which can offer training in management and leadership for the health sector (these should include HEI's, DPSA's PALAMA , private institutions and organisations, international HEI's and organisations)

1.3.6 Ensure *competency requirements are implemented* for appointments to leadership and management positions in the health sector

1.3.7 *Monitor the outcome and impact* of commissioned in-service training and career programmes offered through HEI's

1.3.8 *Market leadership and management development*:

1.3.8.1 *Develop a Quarterly Bulletin 'Leadership in Health Care HRH SA'* which reports on and informs of developments and initiatives

1.3.8.2 *Contribute to the SAMJ and other local and international journal***s**

1.3.8.3 Hold an annual conference on Leadership and Management in Health Care

Key performance indicators:

i. National competency framework and 'the gap' defined, programme requirements detailed, and providers accredited

ii. Management and leadership competency requirements implemented by organisations

iii. Output of new programmes monitored and evaluated

Milestone: Institute for Leadership and Management in Health Care operational, competencies agreed and inventory completed

1.4. ESTABLISH A NATIONAL RECRUITMENT AND RETENTION UNIT TO ENSURE RECRUITMENT AND RETENTION OF SOUTH AFRICAN AND FOREIGN TRAINED HEALTH PROFESSIONALS FOR THE HEALTH SECTOR

1.4.1 Rewrite and implement a *new policy on foreign recruitment* for the South African health sector

1.4.2 Establish and coordinate a *national process to support recruitment* of South African and foreign trained health professionals to the public sector

1.4.3 *Engage with stakeholders*, especially provincial departments of health, to identify, develop and implement recruitment and retention interventions

1.4.4 *Develop a web based facility to enable 'Recruitment for HRH SA'* which is used to market and recruit, and provide information, and to track professional migration

1.4.5 *Develop a database* so as to provide planning information for recruitment and on migration

1.4.6 Nurture Community Service (CS) professionals:

1.4.6.1 Provide information on the web site *'Recruitment for HRH SA'* on where Community Service professionals work, and feedback from CS professionals

1.4.6.2 Monitor appointments in consultation with HPCSA

1.4.6.3 Develop an accreditation framework and accrediting body for CS locations

1.4.6.4 Provide support to sites where CS professionals work; accommodation, transport, professional outreach for professional development

1.4.6.5 Offer a career guidance service and management process to CS professionals on completion of their two year service

Key performance indicators:

i. Foreign recruitment policy redesigned and implemented

ii. Data base and website for CS professionals established

iii. Management process established and site accreditation implemented

Milestone:

i. Implemented new policy on foreign recruitment

ii. Implemented integrated intervention for retention of CS professionals

(Numbers of foreign recruits and reduction % in CS professionals to be agreed)

1.5. ESTABLISH A FINANCING COMMITTEE ON HRH TO MONITOR HRH RESOURCE USE AND ENSURE THE FINANCIAL RESOURCES FOR PRODUCTION OF THE HEALTH WORKFORCE

1.5.1. Monitor and evaluate the *expenditure on the health workforce*, and identify resourcing requirements

1.5.2. Monitor and ensure *adequate resources for education and training of the health workforce* to meet HRH requirements of the national health system; and monitor effectiveness and efficiency of expenditure (identified training resource requirements should include training by HEI's and nursing and ambulance colleges and use of Clinical Training Grant of DHET)

1.5.3. Refine and *improve the efficacy of costing and financing frameworks of funding streams for health professional development*

1.5.4. Investigate and develop *collaborative financing arrangements with private sector* health organisations, and other local and international organisations, for the financing health professional development

Key performance Indicators: i. Annual expenditure analysis reports on the health workforce

ii.Annual reporting on costs and financing of health professional development and health workforce training

iii. MTEF budget preparations for health professional development and health workforce training

Milestone: Annual report of human resource expenditure and MTEF submission for health professional development

1.6. DEVELOP INTERNATIONAL LINKS AND COLLABORATION WHICH ENHANCE NDOH RELATIONSHIP WITH INTERNATIONAL HRH INITIATIVES

1.6.1. Inform NDOH HRH Strategic Committee of international developments in HRH and apply international lessons to the SA context

1.6.2. Disseminate information about international developments to all units and delegates of the National Consultative Forum on HRH

Key performance indicator: Reporting on international developments in HRH

Milestone: Annual report on international developments provided to NDoH Health Workforce Strategic Committee

STRATEGIC PRIORITY 2: INTELLIGENCE AND PLANNING FOR HRH

STRATEGIC OBJECTIVE 2: Establish a Centre for Health Workforce Intelligence which will provide health workforce information and ensure oversight on health workforce planning across the health care system

Interventions and activities:

2.1. ENSURE A RELIABLE ELECTRONIC DATA BASE ON THE HEALTH WORKFORCE

2.1.1. Establish through discussion with partners, *an electronic database on the health workforce*

2.1.2. *Develop a methodology for data gathering and management* which has scientific rigour and which is long term

2.1.3. Develop the *appropriate information architecture and software solution* for health workforce data gathering, management and planning

2.1.4. Undertake a *health workforce surveys* on health workforce details and productivity

2.1.5. *Define requirements for health professional reporting* on Persal, for the HPCSA, and for the Council for Medical Schemes (CMS)

Key performance Indicators:

i. Electronic data base established

ii. Persal, HPCSA and CMS reporting adjusted

Milestone: Electronic data based established and operational

2.2. TO PROVIDE DATA ANALYSIS, REGULAR REPORTING AND COMMENTARY ON HEALTH WORKFORCE INFORMATION

2.2.1. *Develop a phase 1 analysis on overall situation with health workforce data from* the new database source

2.2.2. *Identify reports that should be provided on a regular and occasional basis on* the health workforce

2.2.3. *Develop HRH monitoring and evaluation framework* compliant with WHO reporting and international compatibility

2.2.4. *Undertake various scenario analyses* on health workforce development planning for South Africa for 3,5, 10, 15 & 20 year time frames

2.2.5. *Undertake horizon scanning* (environmental issues) which affect policy on the health workforce (such as budget trends, health care trends, Presidential policy, NHI policy and financial planning etc..)

2.2.6. *Enable the leadership in the health sector to be well informed* about health workforce issues by providing reports, especially to the National Department of Health, the Director General and the Minister

Key Performance Indicators:

i. ***Data analysis reports on the health workforce***

ii. ***Identified managers receive regular accurate timely reports and take action based on the data***

iii. ***Scenario analysis***

iv. ***Monitoring and Evaluation Framework established***

v. ***Ongoing information provision to the DG and the Minister***

Milestone: Data analysis report on the health workforce

2.3. TO PROVIDE INFORMATION FOR OVERSIGHT AND LEADERSHIP ON WORKFORCE PLANNING ACROSS THE HEALTH SYSTEM

2.3.1. Co-operate with the provincial departments of health to collate *health workforce needs for their service plans (STPs), align these to HR Plans*, and link these needs to planned supply of health professionals

2.3.2. *Identify the critical number of posts* that should be in place so as to ensure a critical mass in all hospitals at all levels of the system, how to address the gap, and the financial implications (see Objective 3)

2.3.3. Identify priority public sector *posts that should be opened in order to absorb new graduates,* develop career paths, improve access to health care, and to link this to the financial implications

2.3.4. *Provide information on private sector service providers* which can provide services in the public sector

Key performance indicators:

i. ***Provision of planning information for the health system***

ii. ***Identified critical posts***

Milestone: Realistic and integrated provincial plans on health workforce needs

2.4. TO MONITOR HEALTH WORKFORCE AND HEALTH PROFESSIONAL DEVELOPMENT INFORMATION ON ACADEMIC HEALTH COMPLEXES

2.4.1. *To collaborate with DHET to ensure monitoring* by the Centre of health professional training outputs

2.4.2. *To monitor registrar posts, filled and unfilled*; and ensure allocation of MTEF 2012/13 – 2014/15 to fill unfilled registrar training posts

2.4.3. To monitor *academic teaching and clinical posts* filled and unfilled

2.4.4. *To monitor graduates and their employment after Community Service* and registrar training

2.4.5. To meet with the *National and Provincial Working Groups of the Minister Minister's Talent Strategy for a Re Engineered Health System* (professionals associations, care groups, education institutions on new roles, cadres and scopes of practice) to identify in consultation ways of overcoming the shortage in supply of health professionals relative to need (task shifting, new categories of worker, new courses etc.) and the implications (see also Objective 4)

2.4.6. To monitor graduation numbers and in course wastage (drop and failure)

Key performance indicator:

Database on health professional output of Academic Health Complexes

Milestone: Annual report of health professional output plans and trends from Academic Health Complexes

2.5. TO ENSURE CAPACITY AT APPROPRIATE LEVELS FOR INFORMATION ANALYSIS AND HEALTH WORKFORCE PLANNING

2.5.1. To have *biannual workshops* which share approaches of the Centre to health workforce planning and information gathering

2.5.2. To develop with the NDoH National Health Workforce Committee, *Provincial Health Workforce Committees* with appropriate representation, have ongoing supportive activities in health workforce planning for provincial, district and municipal health services

2.5.3. To develop *international collaborative initiatives* and implement methodologies that enhance the capacity of the Centre

Key performance indicator:

i. ***Capacity of provincial, districts and municipalities for health workforce planning enhanced***

ii. ***International approaches applied***

Milestone: National workshop on health workforce planning and information gathering

2.6. ORGANISATIONAL DEVELOPMENT OF THE CENTRE

2.6.1. To plan and *implement the Centre* as an organisational structure of NDoH (mission, staff, location, infrastructure, budget)

2.6.2. *Develop a communication strategy* which ensures promotion and understanding of the role of the Centre, including use of a portal in the NDoH website

2.6.3. To develop a *stakeholder engagement* plan and implement

2.6.4. Develop a strategic plan for the Centre

Key performance Indicator: Centre for Health Workforce Intelligence Established

Milestone: Centre operational

STRATEGIC PRIORITY 3: WORKFORCE REQUIREMENTS FOR NEW SERVICE STRATEGIES

STRATEGIC OBJECTIVE 3: To meet workforce requirements of new and emerging service strategies and thereby ensure a health service which promotes health and provides value for money

3.1. ENABLE THE IMPLEMENTATION OF RE-ENGINEERED PHC SYSTEM THROUGH CREATING THE NEW STRUCTURES AND CADRES (CHWS, DISTRICT OUTREACH TEAMS, SPECIALISTS TEAMS, SCHOOL NURSES)

3.1.1. Develop *policies and interventions on task-shifting* and –task sharing for the re-engineered PHC system health cadres

3.1.2. Develop *policies and interventions on multi disciplinary working and a referral system* for the re-engineered PHC system health cadres

3.1.3. *Identify up skilling/broadening of skills training* required for health cadres in employment who will become part of the reengineered PHC system and commission the training

3.1.4. Establish a *process for all health professional associations and councils* to review their scopes of work to promote task-shifting for re-engineered PHC system

3.1.5. Develop *policies and interventions on private sector role* and engagement in the public health system at primary care level

3.1.6. Develop and *institutionalise job profiles, person specifications, competence frameworks*, terms and conditions and registration requirements for new and realigned jobs/cadres

3.1.7. Based on policy directives, *quantify* the numerical (competent people) and financial (remuneration, goods and support services) need for district outreach teams, school health nurses, CHWs, and specialist teams, and oversee the plan for implementation

3.1.7.1. Finalise and *implement national policy* on CHWs, medical specialists, nursing cadres, and other cadres of reengineered PHC system

Key performance indicator: Training and employment for health cadres for new PHC system implemented

Milestone: Pilot districts with reengineered PHC health cadres in place and operational

3.2. ESTABLISH AND SUSTAIN PUBLIC HEALTH UNITS AT DISTRICT AND PROVINCIAL LEVELS

3.2.1 *Set up NDoH Public Health Unit and* Public Health Units in provinces, and facilitate appointments of public health specialists

3.2.2. New Public Health Units to *develop public health strategies* for each province and districts

3.2.3. New Public Health Units to develop a monitoring and evaluation framework for the reengineered PHC system

Key performance Indicator:

i. Public Heath Strategies for provinces developed

ii. Performance reports provided on implementation of new PHC system

Milestone: Public Health Units established and specialists appointed

3.3. UNDERTAKE PRODUCTIVITY ANALYSES AND DEVELOP NORMS AND STANDARDS *AS GUIDELINES* FOR DEVELOPMENT AND FILLING OF STAFF ESTABLISHMENTS

3.3.1. Identify and apply *output and outcome measures for health personnel* which conform with WHO reporting and evaluation on HRH

3.3.2. *Develop workforce productivity measurement tools* and conduct productivity studies (public and private) and publish benchmark comparisons

3.3.3. To *work with the Minister's initiative of 'a Talent Strategy for a re engineered health system'* to identify cost effective staffing approaches at all levels of the health system

3.3.4. *Review and evaluate staffing establishments* at all levels against policies, trends, service demands and other needs

3.3.5. Develop *staffing norms and standards* taking into account existing norms and standards being used by provinces (IHPF and MTS etc…), applying caution to the role of norms and incorporating new professional categories (norms and standards will change over time)

3.3.6. Specifically design an intervention to ensure that *EMS personnel* are a part of the district health service

3.3.7. Specifically ensure that the most *senior MO posts* are created in the smaller and more peripheral hospitals in districts

3.3.8. Identify *critical professional posts* (clinics, district and hospitals) and quality filling these posts

3.3.9. Ensure that there is systematically *sufficient budget to employ graduates* and information on where they can get employment

3.3.10. *Correlate HRH demand requirements with supply* capacity and adapt accordingly

Key performance indicators:

i. ***Productivity studies undertaken***

ii. ***Norms and standards for the South African health system detailed as guidelines***

iii. ***Critical posts identified and quantified***

Milestone: Critical posts identified for filling

3.4. ENSURE IMPROVED HRH PLANNING FOR PROVINCIAL STP AND HR PLANS TO MEET SERVICE NEEDS

3.4.1. *Review norms being used t drive the STP* calculations & refine methodology

3.4.2. *Facilitate development of STP and HR plans* from provinces which are aligned and meaningful and reflect new professional categories

3.4.3. *Facilitate development of Health Workforce* plans for *hospitals, districts priority programmes and EMS*

Key performance indicator: Process for development of Provincial STP and HR Plans for 2013/14 - 2015/16

Milestone: STP and HR Plans published

3.5. DEVELOP STAFFING NORMS AND STANDARDS FOR ACADEMIC TERTIARY HOSPITALS, REGIONAL AND DISTRICT HOSPITALS TO ENSURE A BALANCED HEALTH SYSTEM

3.5.1. Develop the *service model for hospital services* and the staffing norms

3.5.2. Develop *adjusted norms for service sites* which serve as a training platform for health professionals

3.5.3. *Collaborate with relevant role pl*ayers in the development of these norms and standards for hospital services (Flagship hospital project, provincial departments of health etc..)

3.5.4. *Collaborate with the Minister's initiative of 'a Talent Strategy for a re engineered health system'* to develop team and role functions, and adjusted skills mix, in hospitals which enable cost effective staffing

Key performance indicator: Staffing norms being developed for hospitals with adjustments for training sites (subject to constant review and links to productivity)

Milestone: Service and staffing model (with adjustments for training)

STRATEGIC PRIORITY 4: REVITALISE EDUCATION, TRAINING AND RESEARCH

STRATEGIC OBJECTIVE 4: To ensure the revitalisation of the production of a health workforce with the skills mix and competencies, education and training, to meet health service demand

Interventions and Activities

4.1. DEFINE AND IMPLEMENT THE MINISTER'S TALENT STRATEGY FOR A RE-ENGINEERED HEALTH SYSTEM, & DEFINE AND MANAGE EFFICIENT (SHORT, MEDIUM AND LONG TERM) PLANS FOR THE DEVELOPMENT OF THE HEALTH PROFESSIONS IN COLLABORATION WITH HEI'S

4.1.1. *Define and implement with the Working Group, the Minister's Talent Strategy for a Re-engineered Health System, in collaboration with relevant role players*

4.1.2. *Develop plans for growth of HEI capacity and campus expansion, including rural campuses*

4.1.3. Develop a *database on Higher Education Institutions*: staffing, graduate enrolment and output and programmes

4.1.2 *Review curricula with HEI's* to achieve task-shifting in scope for improved productivity, and for implementation of reengineered PHC and a balanced health care system

4.1.3 Conduct feasibility studies into the options of increasing existing faculty and campus capacity or whether to establish *new campuses or faculties*

4.1.4 Develop *clinical training campuses in the rural provinces* specifically E Cape, Mpumalanga, Limpopo and North West

4.1.5 Monitor *quality of output of medical and other health professionals* from all campuses

4.1.6 Document existing *private production of health professionals* and make recommendations regarding expanded production

Key performance indicator: i. Engagement with DHET and HEI's on production of health professionals for reengineered PHC and a balanced health care system

ii.Elaborate 'Minister's Talent Strategy for Re-engineered Health System' which involves new roles, scopes of practice, cadres and professional categories

Milestone: Report on medium and long terms plans (5 year and 15years) for HEI production of health professionals

4.2 REVIEW HRH SA 2030 STRATEGY SCENARIOS AND CONSOLIDATE PLANS FOR SCALING UP GRADUATE OUTPUT IN LINE WITH PROJECTED SERVICE REQUIREMENTS AND BASED ON REVIEW OF THE PROFESSIONS AND NEW CATEGORIES

4.2.1. Medical practitioners and specialists

4.2.2 Nurses including priority new categories and specialist nurses

4.2.3 Allied health professionals

4.2.4 Public Health professionals

4.2.5 Support professionals

4.2.6 Management

4.2.7 Scarce skills

Key performance indicator:

i. ***Engagement with each profession and Care Groups (e.g. mental health) and refine of projections on NDoH Workforce Planning Model***

ii. ***Identification of scarce skills and a plan for production***

Milestone: Updated scenario in the NDoH Health Workforce Model with reports on plans for the professions

4.3 IMPLEMENT AN INTEGRATED STRATEGY TO STRENGTHEN THE NURSING PROFESSION[35]

4.3.1. Develop and implement an *effective regulatory framework for nursing practice* and education and training in accordance with the requirements of the Nursing Act, 2005.

4.3.2 Ensure that the *scope and level of competence of nurses* is adequate for the delivery of good quality and effective PHC services

4.3.3 *Promote and maintain professionalism* in nursing

4.3.4 Develop and implement a national and sector specific *plans (private and public) for requirements* for all key categories nurses to meet the health service needs

[35] See more detailed Nursing Strategic Objectives and Activities at the end of Strategic Objective 4

4.3.5 Strengthen the *capacity of nursing education institutions* to increase production and quality of graduates in accordance with the human resource plan for nursing

4.3.6 Ensure implementation of recommendations of the *Nursing Summit 2011*

4.3.7 *Develop the National Committee on Nursing Profession and Nursing Education*

Key performance indicators:

i. ***Regulations developed and implemented***

ii. ***Scope of practice and competency frameworks for PHC nurses refined***

iii. ***Activities to promote professionalism***

iv. ***Workforce Plan for the nursing profession (3,5 and 15 years)***

v. ***Strengthened training capacity for nurses***

vi. ***Implementation of the Nursing Summit 2011 recommendations***

Milestone: Report on progress on strengthening nursing (details to be agreed)

4.4. PLAN THE DEVELOPMENT AND INSTITUTIONALISED TRAINING OF MLWS AND CHW'S

4.4.1. Undertake an *audit of MLW's*, develop a plan for growth of specified categories competencies and scope

4.3.8 Identify the *training platform for MLW's* and ensure funding

4.3.9 Evaluate *Clinical Associate* training, and ensure capacity and institutionalised employment for projected growth

4.3.10 Assess national capacity to increase *Advanced Pharmaceutical Assistant* training and facilitate additional student intake according to modelled demand

4.3.11 Implement and monitor the training for *Community Health Workers for PHC* outreach teams

Key performance indicators:

i. ***Plan for the development of Mid Level Workers***

ii. ***Consolidation of growth of Clinical Associates***

iii. ***Implementation CHW training***

Milestone: report on growth plan for MLWs and CHWs

4.5. REVITALISE CLINICAL RESEARCH AND INNOVATION CAPACITY IN HEI'S

4.5.1. Implement *nationally prioritised clinical research programme* to improve research skills and develop service and clinical interventions

4.5.2. Support the *National Clinical Scholars Programme* to produce 10 PhDs and appoint 30 research 'Chairs' in 10 years

4.5.3. Enable *funding for clinical research*

Key performance indicator: Outputs of clinical research and academic medicine, relevant to issues faced by the South African health sector, and incorporated inot policy and practice

Milestone:

Report on improved clinical research output and appointment of research 'Chairs"
Research Priorities agreed

4.6. ENSURE THE FINANCING OF HEALTH PROFESSIONAL TRAINING AND DEVELOPMENT

4.6.1. Ensure *financing for all HEI's for the clinical training costs* of Health Science Education programmes

4.6.2. Ensure the *planned expansion of the Clinical training Grant and* inclusion of relevant professional and MLW programmes

4.6.3. Develop a reporting framework for '*ring fenced' funding of registrars posts*

4.6.4. Implement revised/amended/new professional education and training funding mechanisms

Key Performance indicator:

Process to ensure funding for production of the health workforce

Milestones:

i. ***Report on financing of Health Science Education 2012/13 - 2014/15 and financing of training of MLW's and CHW's***

ii. ***Operational reporting framework for registrars posts***

4.7. PLANNED TRAINING OF HEALTH PROFESSIONALS OUTSIDE OF SOUTH AFRICA

4.7.1. *Evaluate existing training programmes* outside of South Africa (e.g. Cuban training programme)

4.7.2. *Identify appropriate training* outside of South Africa for medical professionals (undergraduate and postgraduate)

4.7.3. *Review foreign graduate assessment* and accreditation system (foreign degree recognition)

Key performance indicators:

i. ***Evaluation of current training outside of South Africa (costs, outputs and outcomes)***
ii. ***Review of training opportunities for training South African health professionals outside of South Africa***
iii. ***Report from HPCSA on foreign graduate assessment and accreditation system***

Milestone:

i. ***Report of training of health professionals outside of South Africa 2012 – 2025***
ii. ***Report from HPCSA on foreign graduate assessment and accreditation system***

4.8. PLANNED GROWTH OF ACADEMIC CLINICIANS IN HEI'S

4.8.1. To develop a *plan for requirements and posts for academic clinicians* by HEI's, linked to scaling up of output of health professionals

4.8.2. T o encourage *collaborative initiatives between South African HEI's, and institutions recognised for excellence abroad,* to strengthen South Africa academic training capacity in the health professions for implementation of the NDoH HR Strategy: HRH SA 2030

Key performance indicator: Planning process for growth in academic clinicians

Milestone: Report on funded plan for growth in academic clinicians, including international collaborative arrangements with international centres of excellence

4.9. COMMUNICATION STRATEGY ON THE VALUE OF HEALTH CADRES TO SA

4.9.1. To initiate a sustained communication intervention by the Minister of Health on the NDOH HR Strategy: HRH SA 2030, and the value the Minister and South Africa attach to the role of health care workers.

Key performance indicator: Communication strategy on value of health professionals
Milestone: Report on communication initiatives on the value of health professionals to South Africa

STRATEGIC OBJECTIVES FOR STRENGHTHENING THE NURSING PROFESSION (FOR CONSULTATION)

(Addition to Objective 4.3)

1 Develop and implement an effective regulatory framework for nursing practice and education and training in accordance with the requirements of the Nursing Act, 2005.

Activities

1.1 Develop a detailed plan for implementing the provisions of the Nursing Act, 2005

1.2 Finalise and publish regulations required to implement key sections of the Nursing Act, 33 of 2005 w.r.t:

i. Scope of practice (professional nurse, staff nurse and nursing auxiliary)
ii. Education and training requirements to meet the new scope of practice and competence requirements for each category of nurse
iii. Accreditation of Nursing Education Institutions to offer the revised and new nursing qualifications
iv. Assessment, diagnosis, prescribe and supply treatment (section 56)
v. Professional Conduct
vi. Continuing professional development

1.3 *Develop a monitoring and evaluation mechanism for ensuring that the SANC fulfils its mandate and is held accountable for regulating the Nursing Profession in terms of the provisions of the Nursing Act, 2005* w.r.t. -

i. Maintaining safety and competence of the practice of nurses
ii. Developing standards for nursing practice and assessing quality of nursing
iii. Ensuring that nurses adhere to the code of conduct and ethical rules of nursing
iv. Promoting and maintaining the quality of education amongst providers of nursing education and training
v. Responding to the changes in the nation's health priorities and the health system

2 Ensure that the scope and level of competence of nurses is adequate for the delivery of good quality and effective PHC services

Activities

2.1 Finalise and publish regulations for nurses to assess, diagnose and prescribe and provide treatment

2.2 Develop guidelines, assessment tools and protocols for nurses to manage common health problems presenting at a PHC level (Chronic diseases, IMCI, TB HIV and AIDS, Maternal health)

2.3 Develop mechanisms for clinical supervision and mentorship for nurses working in PHC settings

2.4 Implement an effective clinical governance programme for nurse managed PHC services

2.5 Institute compulsory monthly clinical review meetings for nurses lead by specialist teams

2.6 Conduct a review and audit of midwifery services and develop a strategy for strengthening both practice and education of midwives

3 Promote and maintain professionalism in nursing

Activities

3.1 Review and amend the code of conduct and ethical rules for nurses

3.2 Conduct customer satisfaction reviews with a specific focus on services rendered by nurses, use findings for service improvement

3.2 Promote a nursing workforce that is caring and compassionate and one that promotes and advocates for the rights of those that they provide care to.

3.4 Develop leadership and mentorship programmes that promotes the development nurse leaders

4 Develop and implement a national and sector specific plans (private and public) for maintaining an adequate supply of nurses to meet the health service requirements

Activities

4.1 Determine nursing norms and skill mix required for the provision of all levels of services

4.2 Develop a human resource plan for nursing

4.3 Determine current and future nursing requirements and targets

4.4 Develop a recruitment and production strategy for securing all categories of nurses and specialist nurses

5 Strengthen the capacity of nursing education institutions to increase production and quality of graduates in accordance with the human resource plan for nursing

Activities

5.1 Assess and strengthen capacity to increase the production of nurses (public, private and FET and HET)

5.2 Resolve all outstanding issues affecting the delivery of nursing education and training especially w.r.t.

i. Location of nursing education (specifically regarding the future of nursing colleges)

ii. Role of public nursing schools, nursing colleges

iii. Accreditation of providers of nursing education to offer the revised nursing qualifications

5.3 Develop and monitoring and evaluation system for measuring the quality of nursing education institutions

5.4 Increase the training capacity of nursing education institutions training nurses for underserved and rural areas

STRATEGIC PRIORITY 5: ACADEMIC TRAINING AND SERVICE PLATFORM INTERFACES

STRATEGIC OBJECTIVE 5: To strengthen Academic Health Complexes to strategically manage both health care and academic resources and provide an integrated platform for service, clinical, research and education functions

Interventions and Activities

5.1. ELABORATE THE POLICY AND GOVERNANCE FRAMEWORK FOR ACADEMIC HEALTH COMPLEXES BASED ON AN ORGANISATIONAL MODEL WHICH INTEGRATES GOVERNANCE AND LEADERSHIP STRUCTURES TO STRATEGICALLY AND OPERATIONALLY MANAGE BOTH HEALTH CARE AND RELEVANT ACADEMIC RESOURCES[36] [37]

5.1.1. *Elaborate a policy*, in line with the Health Act Para 52, on the definition of Academic Health Complexes, and the organisation and financing of Academic Health Complexes. Stakeholders should be consulted.

Key performance indicator:

i. ***Policy development process on Academic Health Complexes and agreement on policy by stakeholders***

ii. ***Policy on establishment of academic central hospitals as devolved / independent entities with national financing***

[36] See end of this Priority 5 for draft definition, accreditation criteria, organisational structure and financing flows

[37] For more detail on proposal on Academic Health Complexes see Discussion Document HR Strategy August 4th 2011, B7 Annexure

Milestone: Policy proposal and necessary regulatory recommendations on the organisation, governance and financing of Academic Health Complexes and Academic Central hospitals

December 2012

5.2. DEVELOP NATIONAL STRUCTURES FOR THE OVERSIGHT, PLANNING AND GOVERNANCE OF ACADEMIC HEALTH COMPLEXES

5.2.1. Establish a *National Advisory Committee* for the Minister of Health on Academic Health Complexes

5.2.2. Establish a *Secretariat to resource the National Advisory Committee* of the Minister

5.2.3. Establish an *Association of Academic Health Complexes* to provide peer support for the growth of AHC's and a forum for consultation and capacity development

5.2.4. Establish a *Finance Committee on Academic Health Complexes (reporting to the Minister)* to develop and monitor costing, financing and budgeting of AHCs and Academic Central Hospitals

5.2.5. Develop *an accreditation framework for Academic Central Hospitals and Academic Health Complexes implemented* through the Office of Standards Compliance

Key performance indicators: Governance and oversight structures established

Milestone: Operational Ministerial Advisory Committee, Secretariat, Finance Committee and Standards Regulator on AHCs and Academic Central Hospitals

5.3. DEVELOP THE POLICY ON MANAGEMENT INFRASTRUCTURE OF AHCS

5.3.1. National *policy on conditions of service for academic clinicians* employed in AHCs and Academic Central Hospitals

5.3.2. *Information technology policy* to standardise ITC in Academic Central Hospitals to enable financing, case mix analysis, revenue generation, grant monitoring for education and specialist services, service and performance management

5.3.3. Development of the *service planning model* incorporating staffing guidelines and adjustment o the training and research environment

5.3.4. Elaboration of *national tertiary and highly specialised service needs and planned units/centres of excellence*

5.3.5. Identify *other issues* on which policy is required for management infrastructure and elaborate it making recommendations to the Minister's Advisory Committee

Key performance Indicator: Policies on conditions of service and ITC developed for Academic Health Complexes and Academic Central Hospitals

Milestones:

i. Policies on conditions of service for academic clinicians and ITC in Academic Health Complexes and Academic Central Hospitals agreed

ii. Service and staffing model for tertiary and highly specialised services

iii. Other issues identified and addressed

5.4. DEVELOP AND COMMISSION THE ACADEMIC SERVICE PLATFORMS OF THE FIVE FLAGSHIP ACADEMIC CENTRAL HOSPITALS

5.4.1. *Advertise and adjudicate bids*, award and manage contracts

5.4.2. *Ensure policy on organisation and financing* of AHCs and Academic Central Hospitals informs the Flagship Project implementation

5.4.3. Develop a *phased plan for expansion of training* on the Flagship Project platforms

Key performance indicators: Flagship projects commissioned

Milestones: Flagship projects under development and policy on governance, organisational structures, financing and management agreed

5.5. REVIEW NURSING COLLEGE CAPACITY, & DEVELOP AND COMMISSION NURSING COLLEGES INTEGRATED INTO THE HIGHER EDUCATION AHC INFRASTRUCTURE

5.5.1. *Standards agreed and facility equipment. Gap analysis and Costin. Business plans on Nursing College* refurbishment submitted to Treasury

5.5.2. Develop *phasing in plans for teaching and training* expansion developed

Key performance indicators: Business plans submitted to Treasury

Milestone: Business plans agreed and implementation process started based on Treasury Budget allocation

DRAFT DEFINTION, ORGANISATION AND FINANCING FLOWS FOR ACADEMIC HEALTH COMPLEXES (FOR CONSULTATION)

1.Defintion

A *draft definition of the South African concept of an Academic Health Complex*, is:

Academic Health Complexes:

- *may consist of one or more health establishments at all levels of the national health system, including peripheral facilities,*
- *may take different organisational forms*
- *may include one or more educational institutions working together to educate and train health care professionals at under- and postgraduate level in health promotion, disease prevention, and curative and rehabilitative medicine at primary, secondary and tertiary levels*
- *have integrated governance and leadership structures that have assumed the role of strategically and operationally managing both healthcare and relevant academic resources*
- *undertake educational and research activities which increase knowledge and understanding of health and disease*
- *use knowledge and evidenced based research as the basis for treating illness and improving health*
- *design and test new models for improved clinical care, service delivery and improvement of population health*
- *advise government on population health and health care.*

2. Criteria for being accredited with Academic Health Complex Status

Academic Health Complex status should only be awarded to groups of institutions which have complied with specified criteria, or are in a process of reaching the required criteria.

Criteria for the 'accreditation' of Academic Health Complexes in South Africa should include strategic and operational criteria. Strategic and operational criteria are proposed below.

Possible criteria of Academic Health Complex status in South Africa:

Strategic Criteria:

- Integrated governance for the clinical and academic missions (this could range from delegated authority, to affiliations and through to full mergers).
- National recognised excellence in research and clinical practice
- International recognised excellence in research and clinical practice
- External research funds comprise 30% or more of the academic budget
- Integrated leadership and career paths in clinical and academic medicine
- Joint programmes which combine research and clinical work
- Benefits to the South African economy and health sector

Operational Criteria:

- Board (s) reflecting required Academic Health Complex governance structure
- Public entity status for all Academic (Central) Hospitals part of the Complex
    - Control of recurrent and capital budget
    - Full delegations to CEO

- Budget growth
- Financial operations run by accountants
- Staff contracted according to academic, service and research responsibilities
- Delegations to hire and fire all staff
- And many other elements necessary to be a public sector independent organisation

- Information system data collection and analysis which conforms to agreed national standard for Academic (Central) Hospitals and allows for case mix analysis
- Conformance to hospital quality accreditation standards by national, agreed accrediting authority
- Expansion/ growth in output of health professionals
- Growth in research output

2.Organisational structure

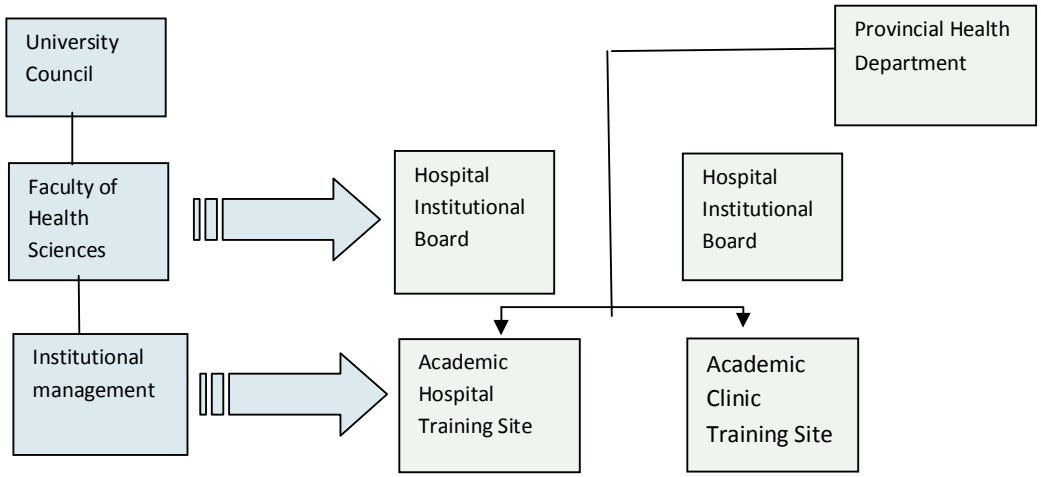
There can be various organisational options for achieving the benefits of governance and management of a joint mission of education, training, research and patient care. Two options are detailed. The status quo and a new scenario (which can have variations).

i. University Affiliation Model (The SA Status Quo)

This is probably closest to what exists in South Africa at present in the relationships between Faculties of Heath Sciences, Academic (Central) Hospitals, and other academic service sites. Affiliation agreements between a university, a hospital and other members potentially create an Academic Health Complex as a voluntary association where members agree on purposes in common. This model depends on good will, mutual respect and a desire to collaborate. This attitude is also required for model ii but it is more structured.

The disadvantage of this model is that there is not a necessary alignment in the clinical and academic missions of affiliated parties, and therefore related resources and organisational performance outcomes. The Board does not play an influential role, with the Provincial Department of Health being the main authority in financing and planning of the institutions and staffing which serve as accredited academic training sites.

Figure 8: University Affiliation Model (The SA Status Quo)

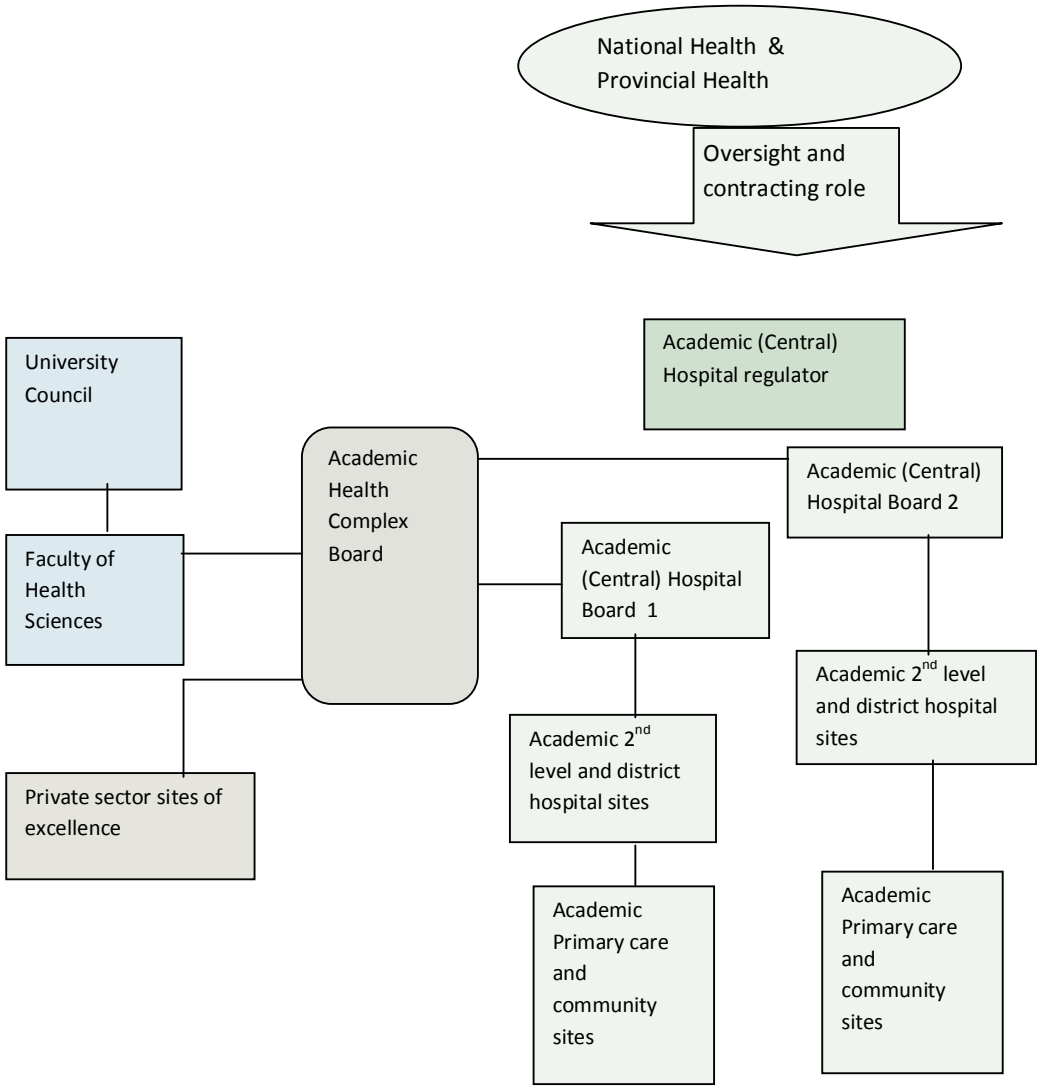


ii. *Consortium, Network or Joint Partnership Board Model*

In this model the institutions of the Academic Health Complex form a board as a vehicle for strengthening collaboration between partners while maintaining separate funding and accountability mechanisms for the academic and clinical missions. Some autonomy is ceded to the common body, in which the participants share in decision-making, but authority remains with the individual institution's board of governors. For this model to work in the South African context the Academic (Central) Hospital should have formally engaged in the path towards independent public entity status so that the institution has control over financial, staffing, other resource and strategic decision making processes.

The absolute non-negotiable, for any new governance model, is the alignment of the academic and clinical missions of the university and teaching hospitals and other training sites. This idea must have the support of the political leaders, specifically support of the Ministers of Higher Education and Training, and Health.

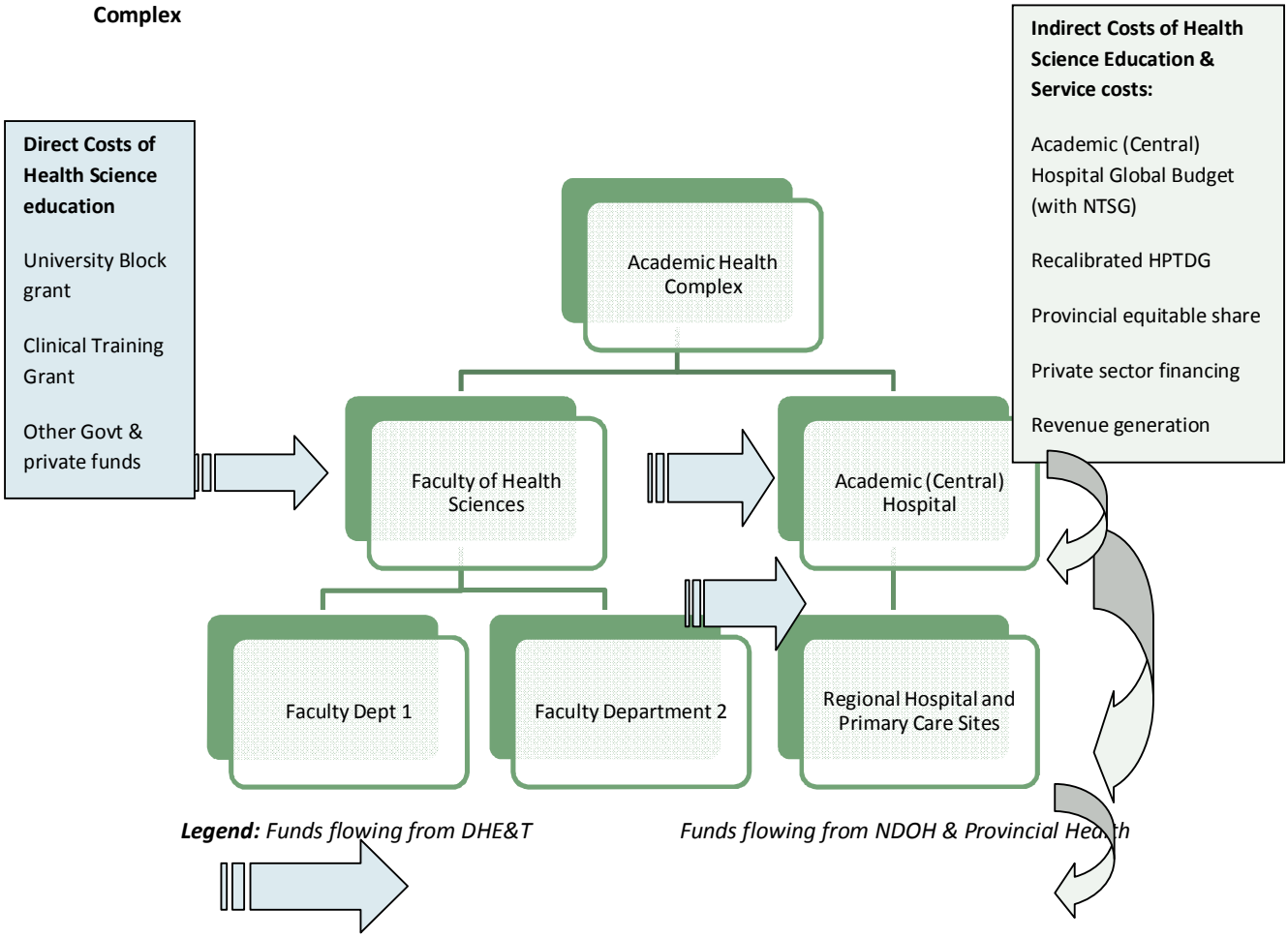
Figure 9: Consortium, Network or Joint Partnership Board Model



3. Financing Flows

The financing of Academic (Central) Hospitals, Academic Health Complexes and health professional education and development needs to be recalibrated and is currently under discussion by the National department of Health and National Departments of Higher Education. Possible financing sources and flows for the Academic Health Complex are proposed for discussion in the diagram below.

Figure 10: Model for Financing of Academic Medicine, the Health Sciences and the Academic Health Complex



STRATEGIC PRIORITY 6: HUMAN RESOURCE MANAGEMENT

STRATEGIC OBJECTIVE 6: To effectively manage human resources in a manner that attracts, retains and motivates the health workforce to both the public and private sectors in an appropriate balance

Interventions and Activities:

6.1. STRENGTHEN CAPACITY AND EFFECTIVENESS OF THE HR MANAGEMENT FUNCTION

6.1.1 *Decentralise more HRM functions* to district and facility level

6.1.2 Revise *reporting framework of provincial HR plans* to link to STP's (Strategic Transformation Plans) annual plans and MTEF

6.1.3 Develop HRM modules in association with *Institute for Leadership and Management in Health Care*

6.1.4 Phase in *HRM training for all HRM related practitioners* and general managers in public service

6.1.5 *Engage with Persal unit* of National Treasury to assess ways of improving functionality and objectivity of Persal

6.1.6 Provide continuous *Persal user training* for all HRM practitioners

Key Performance Indicator: Decentralised HR functions and In service training according to Institute requirements

Milestsone: Strengthened HR function

6.2. DEVELOP AND IMPLEMENT ACCREDITATION SYSTEM FOR OF THE HRM FUNCTION

6.2.1. Develop *regulations and guidelines* and implement primary indicators for core administrative components of Human Resources Management (HRM)

6.2.2. *Implement policy on accreditation for human resource function* in all health facilities

Key performance Indicator: HR standards agreed for accreditation purposes Milestone: Accreditation of HR function in place

6.3. IMPLEMENT A PERFORMANCE MANAGEMENT FRAMEWORK IN PUBLIC SERVICE

6.3.1. Customise *DPSA performance management tools and process* to the requirements of the health workforce and performance requirements of health services; especially how to measure clinical, service and academic productivity.

6.3.2. Design, implement and monitor a *programme to improve productivity* by *monitoring abuse* of *RWOPS and stopping moonlighting*

Key performance indicator: Performance management tools and improved contracts developed

Milestone: Measures of performance and productivity including control of moonlighting and abuse of RWOPS

6.4. MINISTER'S '*IMPROVING THE WORKING LIVES OF HEALTH CARE WORKERS*' INITIATIVE*:* IMPROVE PLACEMENT, IN SERVICE TRAINING, SUPPORT, WORK ENVIRONMENT AND RETENTION OF HEALTH PROFESSIONALS:

6.4.1. Design and implement Minister's '*IMPROVING THE WORKING LIVES OF HEALTH CARE WORKERS INITIATIVE*' incorporating issues below

6.4.2. Implement *website and social marketing networks* for especially Interns and Community Service professionals to find vacancies, exchange experiences, understand work environments at vacancies, and make applications

6.4.3. *Re-examine agreements, policies and implementation of incentive structure*: viz

a. Incentivised pay for inhospitable posts (flexibility of OSD models
b. Child and family care support for working parents
c. Flexible working hours esp. for mothers who are professionals
d. Succession planning for key positions to avoid service vacuums
e. Career planning and pathways
f. Access to CPD opportunities esp. in remote postings

g. Accommodation and transport especially in remote postings

h. Appropriate clinical supervision

i. Supported and incentivised learning and development

j. Bursaries for scarce skills/competencies jobs

k. Access to information technology especially in remote postings

l. Access to employee wellness programme

6.4.4. Facilitate a systematic improvement of HR and *general people management*:

a. Monitor and take action on HRM issues (absenteeism, turnover, discipline, recognition for going the extra mile,

b. Improve and enable the physical working conditions (hygiene, crowding, recreation space, equipment, etc) etc)

c. Facilitate an enabling organisational leadership culture

d .Systematic improvement of management competence and attitude through regular in-service training and development, & e learning

e. Systematic reinforcement of the multidisciplinary team

6.4.5. *Ensure 'living' HR Plans are developed which include*:

- Leadership and Organisational Development
- Ensuring workforce performance is optimised in the public health system
- Equality and Diversity Management
- Learning and Development
- Reduced absenteeism
- Communications and Involvement
- Employee Wellbeing, Reward and Recognition
- Health workforce planning

- ***Key performance Indicator: Minister's 'improving the working lives of health care workers initiative' planned and operationalised***
- ***Milestone: Measured improvement in lives of health care workers***

6.5. REVIEW AND IMPLEMENT OCCUPATION SPECIFIC DISPENSATION

6.5.1. *Review OSD* with a view to attracting and retaining health professionals whilst ensuring productivity

Key performance indicators: OSD review initiated. Milestones: OSD implementation in process

STRATEGIC PRIORITY 7: QUALITY PROFESSIONAL CARE

STRATEGIC OBJECTIVE 7: To develop a health workforce that delivers an evidenced based quality service, with competence, care and compassion

Interventions and Activities

7.1. IMPROVE AND MAINTAIN PROFESSIONAL STANDARDS

7.1.1. Facilitate collaboration between all health service providers (public and private) with *professional associations*

7.1.2. Establish effective and transparent *oversight of professional indiscretion* and intervene when required

7.1.3 Establish, review and maintain requirements and a processes for *peer review activities* for medical, dental, nursing and pharmacy professionals to be implemented in public and private facilities and services

7.1.4 *Integrate CPD* into performance management contracts

7.1.5 *Collaborate with academic institutions* to review curricula and capacity to improve key competencies

7.1.6 Establish and maintain a routine *reporting process for monitoring professional performance*

- *Improve clinical supervision competencies*
- *Provide training and development and evidenced based clinical policies and procedures*
- *Introduce comprehensive clinical audit against agreed standards and care pathways*

7.2. ACCREDIT ACADEMIC TRAINING SITES

7.2.1 Facilitate and maintain a process of *accreditation of all professional training sites* (service platforms, public and private) by the respective professional councils

7.2.2 Monitor reports and establish a means of *responding where requirements are not met*

7.3. REPORTING ON PROFESSIONAL QUALITY IN HEALTH CARE

7.3.1. Develop a *public reporting approach and process* on professional quality of care

Key performances indicators: Engagement with associations on ensuring quality professional care
Milestone: Continuing Professional Development enhanced

STRATEGIC PRIORTY 8: ACCESS TO HEALTH PROFESSIONALS IN RURAL AND REMOTE AREAS

STRATEGIC OBJECTIVE 8: To promote access to health professionals in rural and remote areas[38]

Interventions and Activities

8.1. INSTIGATE *SHORT TERM STRATEGIES* SPECIFICALLY:

- Plan, support and *nurture Community Health Service professionals*
- *Revise foreign and local recruitment and retention policies* and processes (see also Strategic Priority 1)

8.2. *IMPLEMENT* AN *EDUCATIONAL STRATEGY* (BASED ON WHO GUIDELINES FOR RURAL AND REMOTE AREAS) WHICH INVOLVE

- Targeted admission policies
- Location of undergraduate and post graduate clinical training outside major cities at rural sites and campuses (each faculty should have at least one rural campus)
- Match curricula with rural health needs
- Continuing Education development programmes for each district

8.3. TO DEVELOP *REGULATORY STRATEGIES* INCLUDING:

- Enhanced scope of practice for all health professionals in rural areas in district hospitals
- Develop MLW's with specific skills to meet rural needs
- Enhance development and placement of Clinical Associates
- Provide rural scholarship schemes which encourage return of service

[38] For a more detailed proposal on strategy for health professionals in rural and remote areas see Draft HR Strategy Discussion Document August 4th 2011 Annexure B 6.

8.4 SKILLS MIX AND SCOPE OF PRACTICE

To develop *enhanced scope of practice* for professionals rural district hospitals, mid level health workers, and enhance CAs.

8.5 FINANCIAL INCENTIVES

To use *financial incentives* to attract rural health care professionals specifically the OSD, rural health allowance and sabbatical leave, and postgraduate development

8.6 PERSONAL AND PROFESSIONAL SUPPORT

To provide *personal and professional support to health professionals* working in rural areas specifically, outreach support, improved living conditions, safe and supportive working environment, career development programmes, CPD programmes

Key performance indicators:

i. ***Adopt rural health strategy***
ii. ***To agree a definition of rurality which informs policies on rural OSD allowance and other policies (this exists in other countries)***
iii. ***Increase uptake of suitably qualified foreign health workers***
iv. ***Develop rural scope of practice for relevant professions***
v. ***Negotiate with HEI's on curriculum and admission policies***
vi. ***Provide support and incentives for professionals in rural areas***

Milestone: ***Implementation of rural health strategy for the health professions***

6. PROFESSIONS AND STAFFING FORECAST MODELLING

6.1. MODELLING ASSUMPTIONS

Models are intended to provide a clearer picture from a wide range of interrelated and interactive data. Of necessity they use assumptions and variables to drive formulae and calculate numerical outputs. They are a reflection of the 'truth' but do not claim to be the truth. There is no substitute for critical analysis, even of the most rigorous model.

The accuracy and predictability of the model is clearly dependent on the validity of the baseline data, the assumptions made and the mathematics of the model. The more variables the more complex and the greater potential for poor predictability, especially if there are compounded variables. Averaging and rounding off also affect the accuracy of the outputs. The caution approach is therefore to always regard results of modelling with health suspicion and to interpret their outputs tempered with practical experience.

The model that has been used to generate numerical and financial expectations or predictions for health care professionals is built on previous work done in 2007 by NDoH. It is interactive and variable and assumptions can be changed in the MSExcel spreadsheet 'dashboard' to ask 'what if' questions that will generate new answers. What is presented in this text is extracts of the results of the HR Model Scenario 3. *Annexure B* details the model and Scenario 3. The Annexure B is a compilation of one-page reports for Scenario 3, with tables and graphs, for each professional category (about 100 'registerable' health professions in the current format of the model).

6.1.1. Baselines used for modelling

Some baseline data used is poor:

- **Population** data is adjusted mid-year estimates and the last census was 5 years ago
- The source of data on existing **professionals** is not accurate. Many researchers have attempted to clean the data and to use different sources (professional councils, private data sets, Persal, Colleges, faculties, etc) to obtain the most accurate set but there are unknowns
- **Salary** data used is the (un-weighted) average OSD and general salary scales
- **Costs of academic courses** have been estimated from research work as there are no accurate figures from training establishments
- **Economic indicators** such as GDP and growth are best estimates
- **Retention, retirement, death, etc** figures are averages based on research

6.1.2. Benchmarking

For setting targets for the professions a range of benchmarks can be used:

- International Benchmarks
- Official and unofficial service planning benchmarks
- Care Groups – for example mental health

International benchmarks were used to compare South Africa with peer countries. This exercise is reported in Section 4.

However, it is also important to look at the South African context, and take into account previous work done to determine the optimal number of health professionals required. Ideally we should have a South Africa model that determines HR requirements. **A refined SA model to guide HR requirements does not exist as yet**. As a proxy guide we looked at STP norms based on the Integrated Health Planning Framework[39], and also examined work done by the MRC/W Cape/NDoH team on a SA S*ervice Model*[40]. In this model, staffing requirements are indicated for both PHC as well as acute hospital services. The staffing requirements for the SA *Service Model* are below the SA current staffing ratios and the IHPF which is only for public sector staffing norms. A summary of staffing benchmarks for some of the categories of health professionals is given in the table below, for the six peer countries, STPs and the 'SA Service Model'. The current figures for South Africa are also shown.

Finally, these requirements are placed within the context of the budget constraint, which may mean that some key health personnel categories are prioritised, in order to deliver the maximum impact on health outcomes possible. **For the development of Scenario 3 international and all SA benchmark data was taken into account, but no one benchmark was used for all HR categories. Target decisions were made for each profession based on a variety of data sources. These target decisions need to be refined in consultation with , provincial departments of health, academics, the professions and care groups and associations.** The current target benchmarks, used to determine the gap in health professionals, are normative and are presently under discussion. As such they can be seen as a starting point for further refinement.

[39] Sourced from the IHPF v108.
[40] *SA Service Model* developed by C Hongoro, W Van Rooyen & Moremi Nkosi

Table 9: Summary of staffing benchmarks, ratios per 10,000 population

Staff category	Brazil	Chile	Costa Rica	Colombia	Thailand	Argentina	STPs*/ IHPF	Service Model	SA current
Medical practitioners		5.91	8.59	11.74	2.43		3.21	2.60	3.63
Medical specialists		4.90[41]	4.65[42]	2.57	2.93[43]		0.52	2.53	1.96
Physicians	17.31	10.81	13.24	14.30	5.36	31.96		5.13	
Medical assistants			2.53		0.43		0.7		
Professional nurse							13.93	10.49	18.61
Staff nurse							5.63	5.44	6.28
Nursing assistant							9.62	9.01	11.21
Nursing personnel	65.42	6.27	9.24	5.83	27.16	3.77			36.10
Midwifery personnel	0.17	4.18	0.06		0.25	1.10			
Personal care workers			12.90		5.80				
Dentists	11.56	4.23	3.73	8.26	1.17	9.28	0.26		1.07
Dental technicians/ assistants	2.13	3.21	1.11		0.56				
Dental specialist							0.05		
Pharmacists	5.48	1.62	2.91		2.10	5.08	1.52	0.78	2.29
Pharmaceutical technicians/ assistants	0.33	2.10	2.43		0.82			0.98	
Other health workers	1.98	29.44	16.24		1.84	20.73			
Environment and public health workers	9.59	0.26	3.22		0.35				0.63
Laboratory scientists	0.80					5.12			
Laboratory	4.35								

[41] http://www.ncbi.nlm.nih.gov/pubmed/17130996
[42] http://www.nacion.com/2010-11-15/ElPais/NotasSecundarias/ElPais2577856.aspx
[43] http://www.thaivisa.com/forum/topic/416153-severe-shortage-of-medical-specialists-in-thailand/

technicians/ assistants									
Health management & support workers	48.19		46.82		18.83				
Allied health prof & technical staff							4.54		
Managers, administrators and logistics							29.48		

*Public sector only
Sources: World Health Organisation and other sources, Northern Cape STP IHPF V108, Hongoro et.al, Econex calculations

6.1.3. Targets

The important consideration is that the target number, skills set mix and range of competencies must be based on service demands and epidemiological priorities and not on other countries exclusively.

The targets chosen from modelling against these priorities and the economic and other environmental realities discussed in this document all present significant challenges. The interventions need deliberate sequencing across and within professional categories. The lead times for some interventions are long and they need immediate intervention to produce desired outcomes in many years' time. Others have the potential to be implemented immediately but may have political (labour, professional or macro-political) constraints, etc.

It is critical that long-term output/impact decisions are not forgotten after implementation and that the capacity to absorb the product is properly planned to coincide with the end of the intervention. For instance increase on production of specialist paediatricians, or clinical associates, will take several years to yield graduates and it is necessary in the intervening period to create posts, create career paths and to fund the vacancies into which to employ them.

6.1.4. Realistic scenarios

It is proposed that the SA HRH design to improve health outcomes will have six key foundations:

- CHW at community level
- Predominantly nurse-based system
- Introduce and expand mid-level workers
- Expand general medical doctors
- Expand selected specialist doctors
- Expand public health specialists

Based on this expected high-level policy and a mass of variables a set of prioritised realistic scenarios are presented. They contain timelines for action, short, medium and long term outcome and impact expectations and sequencing proposals to address financial constraints. It must be noted that only Scenario 3 is presented in this Draft HR Strategy document for consultation, and detailed in Annexure B. The NDoH HR Planning Model with the other scenarios is available for review.

The model provides projections for over 100 registerable health professions and is designed to be interactive with the option to adjust baseline data and several assumptions for each profession[44]. What is presented in this document is a suggested preferred scenario based on the following assumptions.

Assumptions in Scenario 3

Fiscal space - generated by GDP growth	**3.5%pa**
Prioritised personnel	
Target staff/population ratios	
Achieve target in 10-15 years	
Non-prioritised staff	
Maintain staff/population ratios	
Prevent any deterioration in staff-population ratios	
Scenarios differentiated by alternative targets	

General assumptions	
Year for constant prices	2011
Staff base year	2010
Population base for target staff norm	2010
Start year for changes in enrolment	2011
Population growth: overall	0.9%
Population growth: public sector	0.9%
Population growth: private sector	0.9%

[44]Annexure Section C: NDoH HR Planning Model

Salaries as a percentage of total provexp	55.0%
Percentage of total staff costs estimated (Prov)	73.7%

6.2. MODEL OUTPUTS

The scenario assumptions shows that at a constant GDP growth rate, with concerted investment for the next five years (3% to 5% annual growth rate in personnel spending) it is possible to close the gap in the realistic numbers in a fifteen to twenty five year time frame. Operational implications of the targets need to be examined and evaluated.

6.2.1. Model refinements

Because the models are huge and are fed by so much data it has not been possible to examine every possible detail in the HRH arena. The start has been at a single consolidated macro (national) level. However there is room to improve the model to split the results into levels of care, Care Group, and to look separately at regions of the country or provinces. The new catgegories proposed so far as part of the Draft HR Strategy have been incorporated (CHWs, new Staff Nurse, Clinical Associate)and old categories phased out e.g enrolled nurse. These details can be built into subsequent versions of the model and used to refine decisions in the future.

6.2.2. Routine data from source

The modelling tool is really most useful if it has full-time operators trained to improve data sets, to examine the outputs very cautiously and to follow up on implementation with monitoring and evaluation of impact. A medium term challenge must be to establish a routine reporting system from the modelling and M&E of the HR Strategy implementation. While Persal is primarily a personnel management system it has the largest data set available in the country for planning. Relatively minor data definition and standardisation can be automated in Persal to enhance the accuracy and therefore value of the data tremendously. Accurate private sector data and NGO sector data must form part of a composite data set. **Developing a reliable data base on the health workforce for the public and private sectors is short term urgent priority. The modelling scenarios proposed are only as good as the data on which they are based.**

6.3. RECOMMENDATIONS

The targets that have been estimated are based on a range of peer countries, South Africa ratios, and on a set of identified priority professionals for fast-tracking.

The costs of the proposed model have been estimated and a scenario set in the model that appears to be reasonably economically viable.

It is recommended that:

1. Stakeholders engage with the methodology, assumptions and targets within the context and challenges and issues outlined (NDoH to facilitate consultation with stakeholder groups)
2. Once the assumptions are agreed in principle the modelling can be adjusted to establish the impact on numbers and cost
3. The targets generated by the STP's should be interpreted with caution and used mainly to provide another, 'distributive', target between provinces, which each have different service environments
4. Norms and standards should be avoided where possible because of the serious limitations that they have as described in this text (undermines productivity and new decisions)
5. Vacancies in the public sector should be totally ignored for targeting and planning purposes because their basis and available data are flawed. The only value is to establish whether the posts exists on the personnel administration system (a requirement for filling a post).
6. Improving existing establishment at all levels of the system is a totally separate management exercise which should be correlated with the short, medium long-term strategic plan.

The numbers are indicative of the size of the challenge but are only a part of the challenge! The rest of the challenge is implementing the myriad of challenges, most importantly changes in roles, categories and scopes of practice, to achieve the staffing levels calculated to be feasible.

The following tables summarise the results of scenario 3. Table 10 summarises the 'Headline Results of Scenario 3'.

Table 10: Headline Results: Scenario 3

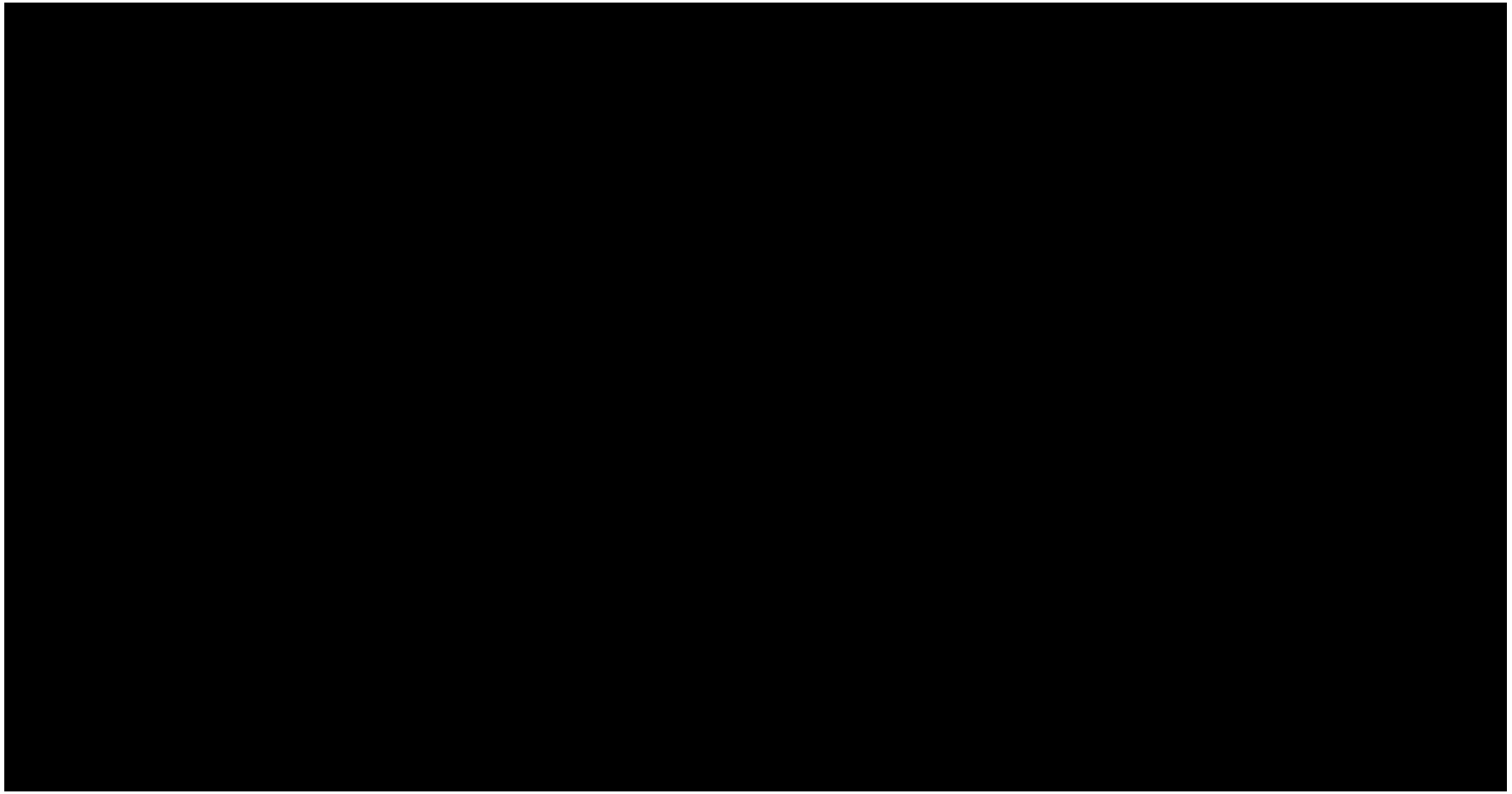


Figure 10: Scenario 3 resultant narrowing of identified 'gap'

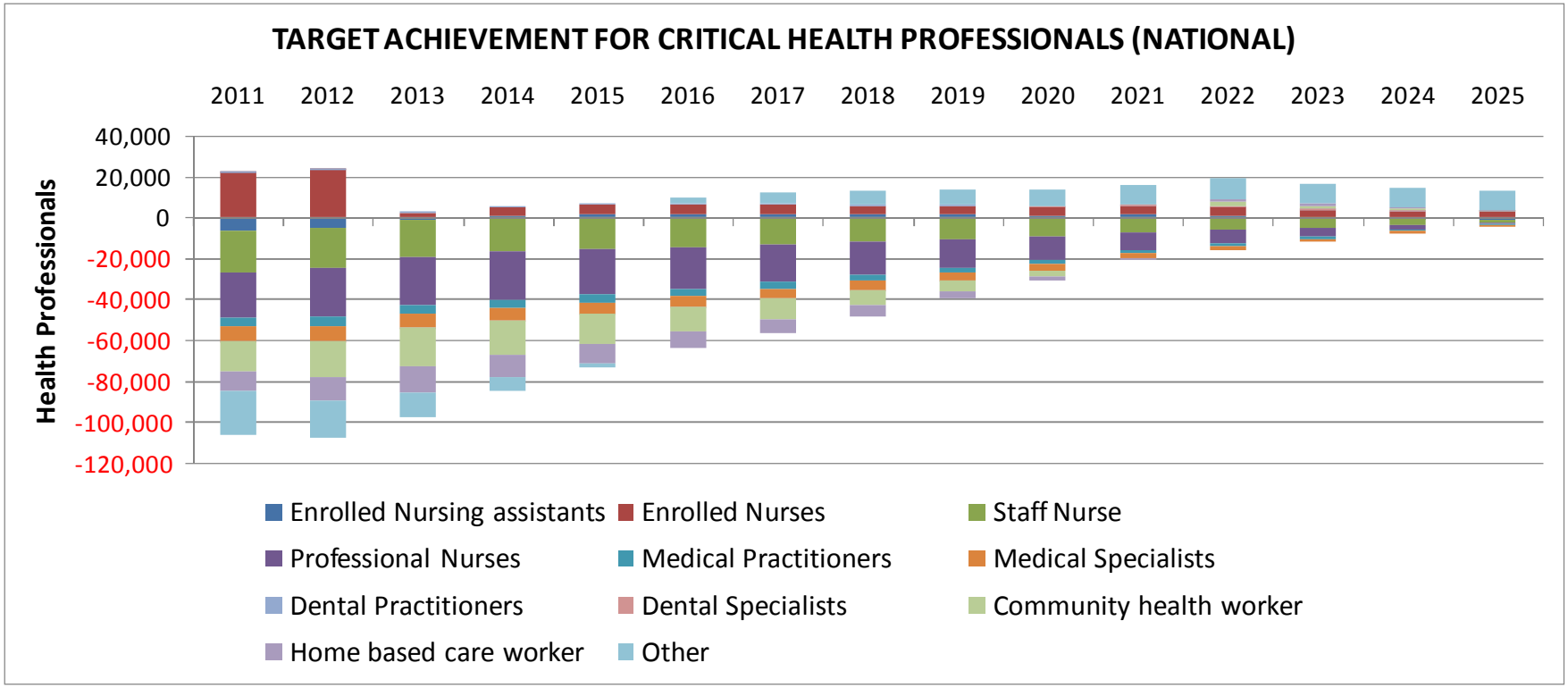


Figure 11 : Scenario 3 resultant cost of narrowing of identified 'gap'

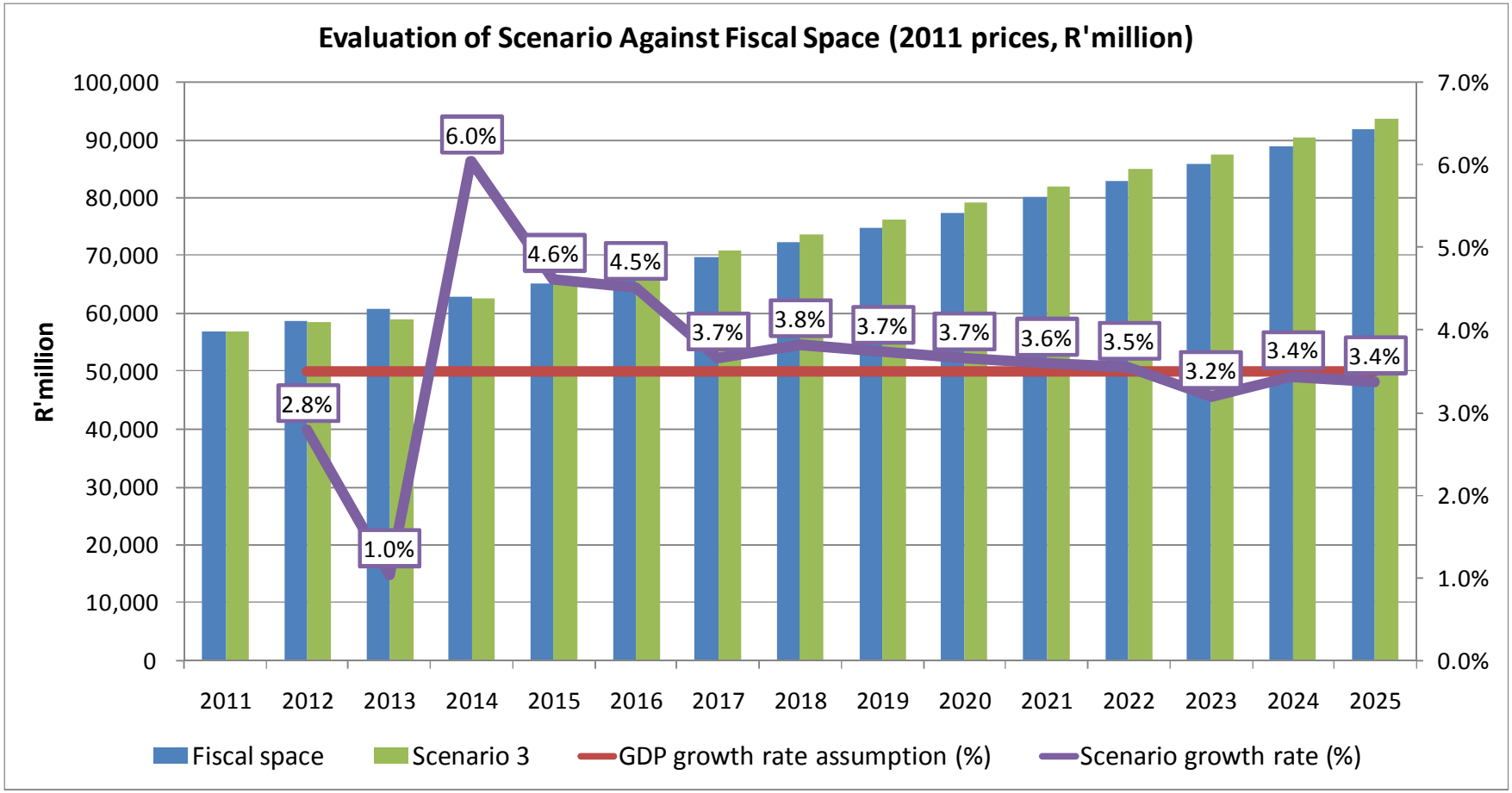


Table 11: Scenario 3 Summary of gap for all health professionals, 2011-2025

	GAP IN CRITICAL HEALTH PROFESSIONALS					
StaffName	base year	2011	2012	2015	2020	2025
Audiologists	-142	-21	89	221	79	112
Biokineticists	-33	-41	-48	-26	7	4
Environmental assistants	-88	-108	-127	-52	56	58
Environmental health practitioners	-900	137	1,076	1,299	219	720
EMS practitioners	-3,753	-4,914	-5,986	-3,650	583	254
Nutritionists/Dieticians	-181	-33	101	268	98	139
Occupational Therapists	-297	-95	89	349	127	179
Optometrists	-142	8	142	280	76	114
Medical Orthotist/Prosthetist	-47	-36	-25	12	13	16
Pharmacists	-778	-557	-360	254	307	378
Physiotherapists	-345	-58	201	515	160	231
Podiatrists	-7	8	21	5	23	23
Psychologists	-71	239	519	99	631	625
Clinical Psychologists	-21	-39	-55	6	-27	-29
Radiographers	-270	-137	-19	135	329	326
Social Workers	-1,777	-407	832	2,426	801	1,145
Speech Therapists	-23	-40	-54	12	-2	-0
Dental assistants	-59	76	199	-67	55	104
Oral Hygienists	-23	5	30	9	44	52
Dental practitioners	0	168	320	480	603	519
Dental Technicians	0	3	5	17	73	103
Dental therapists	0	8	15	24	45	52
Medical practitioners	-4,145	-4,294	-4,447	-3,800	-2,109	-525
Enrolled Nursing assistants	-8,381	-6,434	-4,707	1,993	1,304	-723
Enrolled Nurses	21,010	22,471	23,792	4,470	4,061	3,046
Professional Nurses	-14,932	-16,675	-18,319	-17,131	-8,752	-913
Professional Nurses: PHC	-4,146	-4,270	-4,392	-4,128	-2,404	-16
Professional Nurses: Adv. midwife	-1,658	-1,407	-1,183	-863	-371	32
Staff Nurse	-20,138	-19,805	-19,522	-15,380	-8,990	-1,357
Medical Physicist	-9	-18	-25	-27	1	-5
Anaesthesiology	-1,312	-1,299	-1,289	-1,006	-578	-99
Cardiology	-68	-69	-70	-57	-36	-7
Community Health	-122	-108	-95	-52	-20	-3
Critical Care	-154	-158	-163	-137	-83	-15
Dermatology	-139	-136	-133	-100	-57	-10
Endocrinology	-31	-33	-36	-33	-21	-3
Gastroenterology	-21	-22	-23	-20	-12	-3
Genetics: Human	-10	-9	-8	-6	-4	-0
Genetics: Medical	-17	-18	-19	-16	-10	-1
Haematology: Clinical	-17	-13	-9	-1	1	-1
Medicine	-488	-405	-331	-121	0	4
Medicine: Emergency	-87	-80	-74	-49	-25	-3
Medicine: Family	-888	-853	-822	-593	-314	-52
Medicine: Geriatric	-87	-88	-90	-74	-44	-8
Neonatology	-4	-5	-7	-8	-5	-2
Nephrology	-3	-6	-8	-11	-9	-2
Neurology	-16	-13	-10	-3	4	1
Nuclear Medicine	-8	-3	3	14	13	3
Obstetrics and Gynaecology	-409	-416	-424	-350	-199	-33
Occupational Health	-107	-82	-59	-3	21	5
Oncology: Medical	-33	-36	-39	-36	-20	-3
Oncology: Radiation	-33	-27	-22	-7	2	1
Ophthalmology	-86	-83	-82	-61	-29	-5
Orthopaedics	-525	-528	-533	-432	-261	-54
Otorhinolaryngology	-453	-456	-459	-372	-229	-47
Paediatrics	-234	-284	-331	-351	-225	-48

Paediatrics: Cardiology	-5	-7	-8	-9	-6	-0
Paediatrics: Developmental	-5	-1	3	8	8	1
Paediatrics: Neurology	-5	-6	-7	-7	-4	-1
Paediatrics: Surgery	-2	-1	-1	1	3	2
Pathology: Anatomical	-98	-96	-93	-69	-35	-6
Pathology: Chemical	-50	-48	-47	-34	-18	-2
Pathology: Clinical	-13	-13	-13	-10	-5	-2
Pathology: Forensic	-136	-147	-158	-144	-88	-15
Pathology: Haematology	-64	-62	-60	-44	-22	-4
Pathology: Microbiology	-64	-59	-54	-35	-15	-3
Pathology: Virological	-19	-18	-16	-11	-6	-2
Psychiatry	-168	-164	-162	-122	-58	-8
Psychiatry: Child	-10	-8	-6	-3	0	1
Pulmonology	-10	-6	-2	6	9	3
Radiology: Diagnostic	-502	-496	-490	-377	-214	-38
Rheumatology	-1	-0	0	2	2	1
Surgery	-718	-730	-743	-615	-372	-77
Surgery: Cardiothoracic	-31	-36	-41	-42	-25	-6
Surgery: Neurosurgery	-209	-212	-215	-177	-109	-23
Surgery: Plastic	-93	-94	-94	-76	-47	-10
Surgery: Vascular	-6	-5	-5	-2	-0	-1
Urology	-28	-31	-33	-31	-17	-4
Surgery: Maxillo Facial	-10	-11	-12	-11	-2	2
Orthodontics	-3	-3	-2	-0	2	3
Oral Pathology	-3	-4	-5	-5	-0	3
Periodontics	-3	-3	-3	-2	1	3
Prosthodontics	-3	-3	-3	-2	1	3
Clinical associates	-188	-184	-181	-45	55	61
Medical technicians	-236	-245	-254	-90	54	57
Medical technologists	-4,738	-3,984	-3,306	83	1,026	1,274
Optical dispensers	-131	-97	-65	30	28	37
Orthopaedic footwear technicians	-46	-26	-7	22	5	12
Medical Orthotist assistant	-131	-121	-111	-20	36	41
Occupational Therapy assistants	-140	-130	-122	-23	37	44
Pharmacy assistants	-1,254	-1,365	-1,468	-552	429	443
Physiotherapy assistants	-117	-105	-94	-12	30	35
Psychology assistant	-131	-121	-111	-20	36	41
Radiography assistants	-206	-203	-200	-53	60	67
Speech Therapy assistants	-118	-106	-96	-12	30	36
Pharmacy assistants: post basic	-7,503	-8,288	-9,017	-3,513	2,609	2,666
Community health worker	-11,689	-14,651	-17,392	-14,279	-3,006	152
Home based care worker	-7,360	-9,655	-11,772	-9,874	-2,079	197
TOTAL	**-82,962**	**-83,043**	**-83,439**	**-66,305**	**-16,764**	**9,256**

Enrolled Nursing assistants	-8,381	-6,434	-4,707	1,993	1,304	-723
Enrolled Nurses	21,010	22,471	23,792	4,470	4,061	3,046
Staff Nurse	-20,138	-19,805	-19,522	-15,380	-8,990	-1,357
Professional Nurses	-20,736	-22,352	-23,894	-22,121	-11,527	-898
Medical Practitioners	-4,145	-4,294	-4,447	-3,800	-2,109	-525
Medical Specialists	-7,590	-7,471	-7,379	-5,677	-3,158	-583
Dental Practitioners	0	168	320	480	603	519
Dental Specialists	-22	-24	-26	-21	2	13
Community health worker	-11,689	-14,651	-17,392	-14,279	-3,006	152
Home based care worker	-7,360	-9,655	-11,772	-9,874	-2,079	197
Other	-23,911	-20,995	-18,413	-2,096	8,135	9,414
Total	**-82,962**	**-83,043**	**-83,439**	**-66,305**	**-16,764**	**9,256**
% of total	***n/a***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***

Table 12: Summary Plans for Major Categories

Staff category:	**Medical practitioners**

Year	Default	2011	2012	2013	2014	2025
Professionals: start of year	13,817	13,829	13,840	14,156	14,549	20,582
Professionals: end of year	13,829	13,840	14,156	14,549	14,985	21,645
annual growth: start of year	n/a	n/a	***0.1%***	***2.3%***	***2.8%***	***3.8%***
Gap in relation to the target	-4,145	-4,294	**-4,447**	**-4,295**	**-4,068**	**-525**
Positions at start of year: target	17,962	18,124	18,287	18,451	18,617	21,107
Pop per professional: actual (per 10,000)	2.82	2.82	2.93	2.97	3.02	3.87
Pop per professional: target (per 10,000)	3.66	3.66	3.66	3.66	3.66	3.66
Intake from training	1,394	1,394	1,394	1,466	1,533	2,226
Intake - other (full period)	0	0	6,078			
TOTAL ENTRANTS	1,394	1,394	**1,701**	**1,808**	**1,890**	**3,121**
Exit - other (require plan)	553	553	554	566	582	823
Exit - Retire at 65 (expected)	553	553	554	566	582	823
Exit - death/invalidity/etc (expected)	276	277	277	283	291	412
TOTAL EXITS	1,382	1,383	**1,385**	**1,415**	**1,455**	**2,058**
TOTAL ENTRANTS LESS EXITS	12	11	***316***	***393***	***436***	***1,063***
New student intake	1,394	1,394	1,841	1,883	1,932	2,681
Continuing students	6,970	6,970	6,956	7,312	7,644	11,105
Total enrolment at start of year	8,364	8,364	8,797	9,195	9,576	13,786
Required annual increase in enrolments	n/a	n/a	32.0%	2.3%	2.6%	3.6%
Graduates	1,394	1,394	1,466	1,533	1,596	2,298
Pre-service training loss	14	14	18	19	19	27
Continuing students	6,956	6,956	7,312	7,644	7,961	11,462
Population (000)	**49,029**	**49,470**	**49,916**	**50,365**	**50,818**	**57,615**

Staff category:	**Medical Specialists**

Year	Default	2011	2012	2013	2014	2025
Professionals: start of year	6,361	6,597	6,809	7,537	8,237	15,818
Professionals: end of year	6,597	6,809	7,537	8,237	8,896	17,069
annual growth: start of year	n/a	n/a	***3.2%***	***10.7%***	***9.3%***	***6.1%***
Gap in relation to the target	-7,599	-7,489	**-7,404**	**-6,804**	**-6,233**	**-588**
Positions at start of year: target	13,961	14,086	14,213	14,341	14,470	16,405
Pop per professional: actual (per 10,000)	1.30	1.30	1.44	1.58	1.71	2.98
Pop per professional: target (per 10,000)	2.85	2.85	2.85	2.85	2.85	2.85
Intake from training	872	872	872	881	912	1,642
Intake - other (full period)	0	0	9,202			
TOTAL ENTRANTS	872	872	**1,408**	**1,453**	**1,482**	**2,838**
Exit - other (require plan)	254	264	272	301	329	633
Exit - Retire at 65 (expected)	257	267	273	302	331	636
Exit - death/invalidity/etc (expected)	124	129	135	149	163	318
TOTAL EXITS	635	660	**680**	**752**	**823**	**1,587**
TOTAL ENTRANTS LESS EXITS	236	212	***727***	***701***	***659***	***1,251***
New student intake	872	872	954	1,048	1,133	2,063
Continuing students	2,776	2,776	2,759	2,813	2,928	5,387
Total enrolment at start of year	3,648	3,648	3,713	3,861	4,061	7,449
Required annual increase in enrolments	n/a	n/a	9.5%	9.8%	8.1%	5.7%
Graduates	872	872	881	912	956	1,729
Pre-service training loss	17	17	19	21	23	41
Continuing students	2,759	2,759	2,813	2,928	3,083	5,679
Population (000)	**49,029**	**49,470**	**49,916**	**50,365**	**50,818**	**57,615**

Staff category:	Dental practitioners

Year	Default	2011	2012	2013	2014	2025
Professionals: start of year	981	1,158	1,319	1,297	1,418	1,672
Professionals: end of year	1,158	1,319	1,297	1,418	1,506	1,669
annual growth: start of year	n/a	n/a	***13.9%***	***-1.6%***	***9.3%***	***-0.3%***
Gap in relation to the target	0	168	**320**	**289**	**401**	**519**
Positions at start of year: target	981	990	999	1,008	1,017	1,153
Pop per professional: actual (per 10,000)	0.20	0.20	0.28	0.27	0.29	0.31
Pop per professional: target (per 10,000)	0.20	0.20	0.20	0.20	0.20	0.20
Intake from training	265	265	265	238	216	147
Intake - other (full period)	0	0	-168			
TOTAL ENTRANTS	265	265	**97**	**238**	**216**	**147**
Exit - other (require plan)	39	46	53	52	57	67
Exit - Retire at 65 (expected)	29	35	40	39	43	50
Exit - death/invalidity/etc (expected)	20	23	26	26	28	33
TOTAL EXITS	88	104	**119**	**117**	**128**	**150**
TOTAL ENTRANTS LESS EXITS	177	161	***-22***	***121***	***88***	***-3***
New student intake	265	265	130	131	132	150
Continuing students	1,061	1,061	1,058	949	863	585
Total enrolment at start of year	1,326	1,326	1,188	1,080	995	735
Required annual increase in enrolments	n/a	n/a	-51.1%	0.9%	0.9%	1.8%
Graduates	265	265	238	216	199	147
Pre-service training loss	3	3	1	1	1	1
Continuing students	1,058	1,058	949	863	795	586
Population (000)	**49,029**	**49,470**	**49,916**	**50,365**	**50,818**	**57,615**

Staff category:	Dental specialists

Year	Default	2011	2012	2013	2014	2025
Professionals: start of year	160	160	159	162	165	227
Professionals: end of year	160	159	162	165	170	233
annual growth: start of year	n/a	n/a	***-0.1%***	***1.4%***	***2.3%***	***2.3%***
Gap in relation to the target	-22	-24	**-26**	**-26**	**-24**	**13**
Positions at start of year: target	182	184	186	187	189	214
Pop per professional: actual (per 10,000)	0.03	0.03	0.03	0.03	0.03	0.04
Pop per professional: target (per 10,000)	0.04	0.04	0.04	0.04	0.04	0.04
Intake from training	16	16	16	17	18	26
Intake - other (full period)	0	0	23			
TOTAL ENTRANTS	16	16	**19**	**20**	**21**	**26**
Exit - other (require plan)	6	6	6	6	7	9
Exit - Retire at 65 (expected)	5	5	5	5	5	6
Exit - death/invalidity/etc (expected)	5	5	5	5	5	5
TOTAL EXITS	16	16	**16**	**16**	**17**	**20**
TOTAL ENTRANTS LESS EXITS	-0	-0	***2***	***4***	***5***	***5***
New student intake	16	16	21	21	22	28
Continuing students	51	51	51	54	57	82
Total enrolment at start of year	67	67	72	76	79	110
Required annual increase in enrolments	n/a	n/a	28.4%	0.9%	0.9%	1.8%
Graduates	16	16	17	18	19	26
Pre-service training loss	0	0	0	0	0	0
Continuing students	51	51	54	57	60	83
Population (000)	**49,029**	**49,470**	**49,916**	**50,365**	**50,818**	**57,615**

Staff category:	Dental other

Year	Default	2011	2012	2013	2014	2025
Professionals: start of year	1,795	1,985	2,160	2,279	2,218	2,516
Professionals: end of year	1,985	2,160	2,279	2,218	1,945	2,564
annual growth: start of year	n/a	n/a	***8.8%***	***5.5%***	***-2.7%***	***1.9%***
Gap in relation to the target	-82	92	**249**	**351**	**273**	**310**
Positions at start of year: target	1,877	1,894	1,911	1,928	1,945	2,206
Pop per professional: actual (per 10,000)	0.37	0.37	0.46	0.48	0.46	0.47
Pop per professional: target (per 10,000)	0.38	0.38	0.38	0.38	0.38	0.38
Intake from training	353	353	353	259	262	274
Intake - other (full period)	0	0	-488			
TOTAL ENTRANTS	353	353	**315**	**144**	**-74**	**274**
Exit - other (require plan)	72	79	86	91	89	101
Exit - Retire at 65 (expected)	54	60	65	68	66	75
Exit - death/invalidity/etc (expected)	36	39	44	46	44	50
TOTAL EXITS	162	178	**195**	**205**	**199**	**226**
TOTAL ENTRANTS LESS EXITS	191	174	***119***	***-61***	***-273***	***48***
New student intake	353	353	268	272	269	287
Continuing students	337	337	336	344	353	414
Total enrolment at start of year	690	690	604	616	622	701
Required annual increase in enrolments	n/a	n/a	3.9%	0.9%	0.9%	1.8%
Graduates	353	353	259	262	259	278
Pre-service training loss	4	4	3	3	3	3
Continuing students	336	336	344	353	361	421
Population (000)	**49,029**	**49,470**	**49,916**	**50,365**	**50,818**	**57,615**

Staff category:	Nurses

Year	Default	2011	2012	2013	2014	2025
Professionals: start of year	139,808	144,709	149,167	136,308	143,063	203,700
Professionals: end of year	144,709	149,167	136,308	143,063	148,360	211,196
annual growth: start of year	n/a	n/a	***3.1%***	***-8.6%***	***5.0%***	***3.0%***
Gap in relation to the target	-33,462	-30,120	**-27,236**	**-41,682**	**-36,529**	**89**
Positions at start of year: target	173,270	174,829	176,403	177,990	179,592	203,612
Pop per professional: actual (per 10,000)	28.52	28.52	31.53	28.56	29.71	38.33
Pop per professional: target (per 10,000)	35.34	35.34	35.34	35.34	35.34	35.34
Intake from training	17,482	17,482	17,482	12,989	13,430	20,174
Intake - other (full period)	0	0	43,943			
TOTAL ENTRANTS	17,482	17,482	**567**	**19,024**	**18,173**	**25,828**
Exit - other (require plan)	5,592	5,788	5,967	5,452	5,723	8,148
Exit - Retire at 65 (expected)	4,194	4,341	4,477	4,091	4,293	6,111
Exit - death/invalidity/etc (expected)	2,794	2,894	2,982	2,726	2,861	4,073
TOTAL EXITS	12,580	13,023	**13,426**	**12,269**	**12,877**	**18,332**
TOTAL ENTRANTS LESS EXITS	4,901	4,458	***-12,859***	***6,755***	***5,297***	***7,496***
New student intake	17,482	17,482	15,504	16,370	16,865	24,424
Continuing students	18,447	18,447	17,542	19,201	21,240	41,833
Total enrolment at start of year	35,928	35,928	33,046	35,571	38,105	66,257
Required annual increase in enrolments	n/a	n/a	70.4%	1.3%	2.5%	1.8%
Graduates	17,482	17,482	12,989	13,430	13,951	20,932
Pre-service training loss	1,399	1,399	1,240	1,310	1,349	1,954
Continuing students	17,542	17,542	19,201	21,240	23,227	43,843
Population (000)	**49,029**	**49,470**	**49,916**	**50,365**	**50,818**	**57,615**

Staff category:	Allied

Year	Default	2011	2012	2013	2014	2025
Professionals: start of year	35,753	38,939	41,833	45,687	47,960	56,741
Professionals: end of year	38,939	41,833	45,687	47,960	48,829	57,581
annual growth: start of year	n/a	n/a	***7.4%***	***9.2%***	***5.0%***	***1.5%***
Gap in relation to the target	-8,878	-6,093	**-3,604**	**-160**	**1,701**	**4,295**
Positions at start of year: target	44,631	45,032	45,438	45,847	46,259	52,446
Pop per professional: actual (per 10,000)	7.29	7.29	8.84	9.57	9.96	10.68
Pop per professional: target (per 10,000)	9.10	9.10	9.10	9.10	9.10	9.10
Intake from training	6,401	6,401	6,401	5,584	5,628	5,944
Intake - other (full period)	0	0	-782			
TOTAL ENTRANTS	6,401	6,401	**7,615**	**6,383**	**5,184**	**5,944**
Exit - other (require plan)	1,430	1,558	1,673	1,827	1,918	2,270
Exit - Retire at 65 (expected)	1,071	1,170	1,254	1,369	1,437	1,701
Exit - death/invalidity/etc (expected)	713	779	834	913	959	1,134
TOTAL EXITS	3,214	3,507	**3,761**	**4,109**	**4,314**	**5,105**
TOTAL ENTRANTS LESS EXITS	3,186	2,894	***3,854***	***2,273***	***869***	***839***
New student intake	6,401	6,401	5,525	5,920	6,154	6,818
Continuing students	15,043	15,043	14,552	14,022	13,813	14,592
Total enrolment at start of year	21,443	21,443	20,076	19,942	19,967	21,410
Required annual increase in enrolments	n/a	n/a	9.3%	2.7%	2.6%	1.8%
Graduates	6,401	6,401	5,584	5,628	5,642	6,030
Pre-service training loss	640	640	552	592	615	682
Continuing students	14,552	14,552	14,022	13,813	13,800	14,781
Population (000)	**49,029**	**49,470**	**49,916**	**50,365**	**50,818**	**57,615**

Staff category:	Clinical support

Year	Default	2011	2012	2013	2014	2025
Professionals: start of year	78,437	74,157	70,265	72,147	80,449	137,278
Professionals: end of year	74,157	70,265	72,147	80,449	89,220	138,631
annual growth: start of year	n/a	n/a	***-5.2%***	***2.7%***	***11.5%***	***0.9%***
Gap in relation to the target	-33,991	-39,282	**-44,196**	**-43,343**	**-36,081**	**5,163**
Positions at start of year: target	112,428	113,439	114,460	115,491	116,530	132,115
Pop per professional: actual (per 10,000)	16.00	16.00	14.85	15.12	16.71	25.83
Pop per professional: target (per 10,000)	22.93	22.93	22.93	22.93	22.93	22.93
Intake from training	2,782	2,782	2,782	7,797	8,071	13,703
Intake - other (full period)	0	0	58,932			
TOTAL ENTRANTS	2,782	2,782	**8,208**	**14,795**	**16,013**	**13,703**
Exit - other (require plan)	3,137	2,966	2,811	2,886	3,218	5,491
Exit - Retire at 65 (expected)	2,354	2,225	2,109	2,164	2,414	4,116
Exit - death/invalidity/etc (expected)	1,570	1,483	1,405	1,444	1,610	2,743
TOTAL EXITS	7,061	6,674	**6,325**	**6,494**	**7,242**	**12,350**
TOTAL ENTRANTS LESS EXITS	-4,280	-3,893	***1,883***	***8,301***	***8,771***	***1,353***
New student intake	2,782	2,782	5,281	5,661	6,261	9,415
Continuing students	2,313	2,313	2,834	3,089	3,390	5,367
Total enrolment at start of year	5,095	5,095	8,116	8,750	9,651	14,782
Required annual increase in enrolments	n/a	n/a	48.6%	0.1%	1.2%	1.8%
Graduates	2,782	2,782	7,797	8,071	8,796	13,947
Pre-service training loss	139	139	264	283	313	471
Continuing students	2,834	2,834	3,089	3,390	3,736	5,457
Population (000)	**49,029**	**49,470**	**49,916**	**50,365**	**50,818**	**57,615**

ANNEXURE A DATA ON HUMAN RESOURCES

ANNEXURE A DATA ON HUMAN RESOURCES

Tables

ANNEXURE A Data on Human Resources

Annexure A Table 1 : Total No of Qualified Practitioners Registered (As at 01 November 2010)

Sum of TOTAL				
BOARD_CODE	**BOARD_NAME**	**REG_CODE**	**REG_NAME**	**Total**
DOH	DENTAL THERAPY AND ORAL HYGIENE	DA	DENTAL ASSISTANTS	**2,016**
		OH	ORAL HYGIENISTS	**946**
		SDA	DENTAL ASSISTANT (SUPPLEMENTARY REGISTER)	**19**
		TT	DENTAL THERAPISTS	**464**
	DENTAL THERAPY AND ORAL HYGIENE Total			**3,445**
DOH Total				**3,445**
DTB	DIETETICS	DT	DIETITIANS	**2,037**
		NT	NUTRITIONIST	**59**
	DIETETICS Total			**2,096**
DTB Total				**2,096**
EHO	ENVIRONMENTAL HEALTH OFFICERS	FI	FOOD INSPECTORS	**11**
		HI	ENVIRONMENTAL HEALTH PRACTITIONERS	**2,668**
	ENVIRONMENTAL HEALTH OFFICERS Total			**2,679**
EHO Total				**2,679**
EMB	EMERGENCY CARE PRACTITIONERS	ANA	AMBULANCE EMERGENCY ASSISTANTS	**6,623**
		ANT	PARAMEDICS	**1,286**
		BAA	BASIC AMBULANCE ASSISTANTS	**45,830**
		ECP	EMERGENCY CARE PRACTITIONERS	**98**
		ECT	EMERGENCY CARE TECHNICIANS	**287**
		OECO	OPERATIONAL EMERGENCY CARE ORDERLYS	**549**
	EMERGENCY CARE PRACTITIONERS Total			**54,673**
EMB Total				**54,673**
MDB	MEDICAL AND DENTAL PROFESSIONS BOARD	AN	ANAESTHETIST'S ASSISTANTS	**4**
		BE	BIOMEDICAL ENGINEERS	**1**
		CA	CLINICAL ASSOSCIATES	**9**
		DP	DENTISTS	**5,185**
		GC	GENETIC COUNSELLOR	**1**
		GCIN	INTERN GENETIC COUNSELLOR	**2**
		GR	GENETIC COUNSELLORS	**20**
		GRIN	INTERN GENETIC COUNSELLORS	**1**
		HA	HEALTH ASSISTANTS	**3**
		IN	INTERNS	**3,266**
		KB	CLINICAL BIOCHEMISTS	**14**
		MP	MEDICAL PRACTITIONERS	**36,003**
		MS	MEDICAL SCIENTIST	**27**
		MSIN	INTERN MEDICAL SCIENTIST	**44**
		MW	MEDICAL SCIENTISTS	**549**
		MWIN	INTERN MEDICAL BIOLOGICAL SCIENTISTS	**52**
		PH	MEDICAL PHYSICISTS	**105**
		PHIN	INTERN MEDICAL PHYSICIST	**15**
		SMW	SUPPLEMENTARY MEDICAL SCIENTISTS	**4**
		VS	VISITING STUDENT	**539**
	MEDICAL AND DENTAL PROFESSIONS BOARD Total			**45,844**
MDB Total				**45,844**
MTB	MEDICAL TECHNOLOGY	CT	CYTO-TECHNICIANS	**1**
		GT	MEDICAL TECHNICIANS	**1,764**
		LA	LABOTATORY ASSISTANT	**23**
		MT	MEDICAL TECHNOLOGISTS	**5,296**
		MTIN	MEDICAL TECHNOLOGY INTERN	**41**
		SGT	SUPPLEMENTARY MEDICAL TECHNICIANS	**33**
		SLA	SUPPLEMENTARY LABORATORY ASSISTANTS	**273**
	MEDICAL TECHNOLOGY Total			**7,431**
MTB Total				**7,431**
OCP	OCCUPATIONAL THERAPY, MEDICAL ORTHOTICS AND PROSTHETICS AND ARTS THERAPY	ALT	ALLIED ORTH PROST & LEATHERWORKERS	**9**
		AT	ARTS THERAPISTS	**43**
		OB	ORTHOPAEDIC FOOTWEAR TECHNICIANS	**42**
		OS	MEDICAL ORTHOTISTS AND PROSTHETISTS	**380**
		OSA	ORTHOPAEDIC TECHNICAL ASSISTANTS	**58**
		OSIN	INTERN MEDICAL ORTHOTISTS AND PROSTHETISTS	**26**
		OT	OCCUPATIONAL THERAPISTS	**3,382**
		OTB	OCCUPATIONAL THERAPY ASSISTANTS	**390**
		OTE	SINGLE-MEDIUM THERAPISTS (OCCUPATIONAL THERAPY)	**5**
		OTT	OCCUPATIONAL THERAPY TECHNICIANS	**177**
		SOS	SUPPLEMENTARY MEDICAL ORTHOTISTS AND PROSTHETISTS	**1**
	OCCUPATIONAL THERAPY, MEDICAL ORTHOTICS AND PROSTHETICS AND ARTS THERAPY Total			**4,513**
OCP Total				**4,513**
ODO	OPTOMETRY AND DISPENSING OPTICIANS	OD	DISPENSING OPTICIANS	**130**
		OP	OPTOMETRISTS	**3,032**
		OR	ORTHOPTISTS	**15**
		SOD	SUPPLEMENTARY OPTICAL DISPENSERS	**4**
		SOP	SUPPLEMENTARY OPTOMETRISTS	**11**
	OPTOMETRY AND DISPENSING OPTICIANS Total			**3,192**
ODO Total				**3,192**

PPB	PHYSIOTHERAPY, PODIATRY AND BIOKINETICS	BK	BIOKINETICISTS	902
		CH	PODIATRISTS	224
		MA	MASSEURS	3
		PT	PHYSIOTHERAPISTS	5,624
		PTA	PHYSIOTHERAPY ASSISTANTS	260
		PTT	PHYSIOTHERAPY TECHNICIANS	7
		RM	REMEDIAL GYMNASTS	2
		SCH	SUPPLEMENTARY PODIATRISTS	4
		SPT	SUPPLEMENTARY PHYSIOTHERAPISTS	4
	PHYSIOTHERAPY, PODIATRY AND BIOKINETICS Total			7,030
PPB Total				7,030
PSB	PSYCHOLOGY	PM	PSYCHO-TECHNICIANS	43
		PMT	PSYCHOMETRISTS	1,786
		PRC	REGISTERED COUNSELLORS	803
		PS	PSYCHOLOGISTS	6,816
		PSIN	INTERN PSYCHOLOGISTS	769
	PSYCHOLOGY Total			10,217
PSB Total				10,217
RCT	RADIOGRAPHY AND CLINICAL TECHNOLOGY	DR	RADIOGRAPHERS	6,032
		EE	ELECTRO-ENCEPHALOGRAPHIC TECHNICIANS	29
		KT	CLINICAL TECHNOLOGISTS	897
		KTG	GRADUATE CLINICAL TECHNOLOGISTS	1
		RLT	RADIATION TECHNOLOGISTS	14
		RSDR	RESTRICTED SUPP DIAG RADIOGRAPHERS	6
		SDR	SUPPLEMENTARY DIAGNOSTIC RADIOGRAPHERS	271
		SKT	SUPPLEMENTARY CLINICAL TECHNOLOGISTS	5
	RADIOGRAPHY AND CLINICAL TECHNOLOGY Total			7,255
RCT Total				7,255
SLH	SPEECH, LANGUAGE AND HEARING PROFESSIONS	AM	AUDIOMETRICIANS	5
		AU	AUDIOLOGISTS	211
		GAK	HEARING AID ACOUSTICIANS	104
		SAU	SUPPLEMENTARY AUDIOLOGISTS	1
		SGAK	SUPPLEMENTARY HEARING AID ACOUSTICIANS	5
		SGG	COMMUNITY SPEECH AND HEARING WORKERS	19
		SGK	SPEECH AND HEARING CORRECTIONISTS	6
		SSTA	SUPPLEMENTARY SPEECH THERAPISTS AND AUDIOLOGISTS	1
		ST	SPEECH THERAPISTS	444
		STA	SPEECH THERAPISTS AND AUDIOLOGISTS	1,334
		STB	SPEECH THERAPY ASSISTANTS	4
	SPEECH, LANGUAGE AND HEARING PROFESSIONS Total			2,134
SLH Total				2,134
Grand Total				150,509

Table 2 Retention of Health Professional Graduates in the Public Sector 2002 - 2010

	2002 – 2010			
	Graduate Output	**Public Sector Incr**	**Retention Gap**	**Retention Gap %**
MBChB	11700	4403	7297	62.4%
Dentistry	2140	248	1892	88.4%
Pharmacy	3645	1960	1685	46.2%
Physiotherapy	2934	497	2437	83.1%
Occupational T	1827	410	1417	77.6%
SLP + Audiology	1413	265	1148	81.2%
Dietetics	657	502	155	23.6%

Sources: DHET and National Treasury 2010

Table 3: Summary of 27 clinical professions in SA, total (public & private) and ratio per 10,000 population, by province, 2010

	Eastern Cape		Free State		Gauteng		KwaZulu-Natal		Limpopo	
	Total	Total per 10 000 population	Total	Total per 10 000 population	Total	Total per 10 000 population	Total	Total per 10 000 population	Total	Total per 10 000 population
Medical Practitioners	1846	2.53	904	3.04	5147	5.23	4076	4.05	1170	2.06
Medical specialists	533	0.73	612	2.06	3781	3.85	1456	1.45	182	0.32
Pharmacologists, pathologists and related professionals*	3	0.00	3	0.01	2	0.00	0	0.00	1	0.00
Nursing Assistants	7522	10.30	2937	9.88	12730	12.94	9538	9.47	7698	13.52
Professional Nurses	13069	17.89	4578	15.40	20504	20.85	21274	21.11	10353	18.18
Staff nurses and pupil nurses	3142	4.30	683	2.30	7645	7.77	11198	11.11	3535	6.21
Dental practitioners	337	0.46	210	0.70	2075	2.11	702	0.70	228	0.40
Dental specialists*	0	0.00	0	0.00	58	0.06	7	0.01	1	0.00
Dental technicians*	0	0.00	0	0.00	21	0.02	0	0.00	0	0.00
Dental therapists	59	0.08	17	0.06	163	0.17	181	0.18	92	0.16
Emergency medical services*	2004	2.74	1220	4.10	1117	1.14	2771	2.75	1957	3.44
Pharmaceutical assistants*	27	0.04	2	0.01	5	0.01	699	0.69	186	0.33
Pharmacists	1054	1.44	535	1.80	3660	3.72	1913	1.90	624	1.10
Radiographers	785	1.07	531	1.79	2360	2.40	1429	1.42	244	0.43
Supplementary diagnostic radiographers*	49	0.07	29	0.10	13	0.01	14	0.01	33	0.06
Community development workers*	4	0.01	29	0.10	26	0.03	1	0.00	18	0.03
Dieticians and nutritionists*	81	0.11	58	0.20	164	0.17	107	0.11	136	0.24
Environmental health practitioners	327	0.45	186	0.63	698	0.71	662	0.66	337	0.59
Health science professionals*	881	1.21	1994	6.71	1189	1.21	876	0.87	218	0.38
Medical researchers and related professionals*	0	0.00	7	0.02	16	0.02	11	0.01	3	0.01
Medical technicians/ technologists*	21	0.03	29	0.10	92	0.09	69	0.07	8	0.01
Occupational therapists	209	0.29	288	0.97	1227	1.25	458	0.45	211	0.37
Optometrists and opticians*	2	0.00	5	0.02	19	0.02	19	0.02	74	0.13
Oral hygienists*	22	0.03	5	0.02	38	0.04	27	0.03	52	0.09

Physiotherapists	330	0.45	327	1.10	1969	2.00	940	0.93	236	0.41
Psychologists and vocational councillors	411	0.56	262	0.88	3240	3.29	757	0.75	154	0.27
Speech therapy and audiology*	33	0.05	15	0.05	112	0.11	88	0.09	49	0.09
TOTAL	32751	44.83	15467	52.01	68069	69.21	59274	58.83	27801	48.83

**Public sector data only*

Table 3 (continued)

	Mpumalanga		North-West		Northern Cape		Western Cape		South Africa	
	Total	Total per 10 000 population	Total	Total per 10 000 population	Total	Total per 10 000 population	Total	Total per 10 000 population	Total	Total per 10 000 population
Medical Practitioners	972	2.77	906	2.32	387	4.13	2739	5.67	18147	3.70
Medical specialists	167	0.48	217	0.56	61	0.65	2626	5.44	9637	1.96
Pharmacologists, pathologists and related professionals*	37	0.11	0	0.00	0	0.00	1	0.00	47	0.01
Nursing Assistants	3203	9.14	4305	11.04	1336	14.29	6769	14.01	56039	11.42
Professional Nurses	5856	16.70	4179	10.71	3913	41.84	9323	19.30	93049	18.97
Staff nurses and pupil nurses	1641	4.68	746	1.91	213	2.27	2593	5.37	31395	6.40
Dental practitioners	416	1.19	130	0.33	90	0.96	1157	2.40	5345	1.09
Dental specialists*	31	0.09	0	0.00	0	0.00	30	0.06	127	0.03
Dental technicians*	0	0.00	0	0.00	0	0.00	12	0.02	33	0.01
Dental therapists	82	0.23	33	0.08	17	0.18	6	0.01	648	0.13
Emergency medical services*	787	2.24	838	2.15	568	6.07	1527	3.16	12789	2.61
Pharmaceutical assistants*	4	0.01	109	0.28	26	0.28	1	0.00	1059	0.22
Pharmacists	723	2.06	564	1.44	226	2.42	2126	4.40	11425	2.33
Radiographers	400	1.14	173	0.44	141	1.51	1437	2.98	7500	1.53
Supplementary diagnostic radiographers*	11	0.03	19	0.05	3	0.03	0	0.00	170	0.03
Community development workers*	13	0.04	7	0.02	2	0.02	1	0.00	101	0.02
Dieticians and nutritionists*	65	0.19	41	0.11	30	0.32	81	0.17	763	0.16
Environmental health practitioners	365	1.04	90	0.23	88	0.94	419	0.87	3172	0.65
Health science professionals*	153	0.44	118	0.30	19	0.20	882	1.83	6330	1.29
Medical researchers and related professionals*	1	0.00	1	0.00	1	0.01	35	0.07	75	0.02
Medical technicians/ technologists*	19	0.05	30	0.08	5	0.05	124	0.26	397	0.08
Occupational therapists	265	0.76	82	0.21	83	0.89	957	1.98	3779	0.77
Optometrists and opticians*	4	0.01	0	0.00	3	0.03	0	0.00	126	0.03

Oral hygienists*	14	0.04	5	0.01	4	0.04	27	0.06	194	0.04
Physiotherapists	361	1.03	119	0.30	123	1.31	1447	3.00	5850	1.19
Psychologists and vocational councillors	246	0.70	172	0.44	50	0.53	1426	2.95	6718	1.37
Speech therapy and audiology*	27	0.08	14	0.04	18	0.19	40	0.08	396	0.08
TOTAL	15863	45.24	12896	33.06	7405	79.19	35786	74.08	275312	56.12

**Public sector data only*

Table 4: Public sector vacancies and cost of filling for 14 clinical professions, per province, 2010

	Average cost per worker	Eastern Cape		Free State		Gauteng		KwaZulu-Natal		Limpopo	
		Public sector vacancies	Cost of filling vacancies	Public sector vacancies	Cost of filling vacancies	Public sector vacancies	Cost of filling vacancies	Public sector vacancies	Cost of filling vacancies	Public sector vacancies	Cost of filling vacancies
Medical Practitioners	R 796,822	806	R 642,238,532	427	R 340,242,994	1118	R 890,846,996	1811	R 1,443,044,642	5053	R 4,026,341,566
Medical specialists	R 1,052,236	418	R 439,834,648	287	R 301,991,732	533	R 560,841,788	1078	R 1,134,310,408	656	R 690,266,816
Nursing Assistants	R 127,939	4585	R 586,600,315	2679	R 342,748,581	582	R 74,460,498	1875	R 239,885,625	8022	R 1,026,326,658
Professional Nurses	R 393,591	16683	R 6,566,278,653	1684	R 662,807,244	1720	R 676,976,520	4381	R 1,724,322,171	15605	R 6,141,987,555
Staff nurses and pupil nurses	R 166,925	3480	R 580,899,000	301	R 50,244,425	575	R 95,981,875	2648	R 442,017,400	6776	R 1,131,083,800
Dental practitioners	R 538,904	162	R 87,302,448	31	R 16,706,024	59	R 31,795,336	46	R 24,789,584	507	R 273,224,328
Dental specialists	R 1,052,236	27	R 28,410,372		R 0	37	R 38,932,732	2	R 2,104,472	57	R 59,977,452
Dental therapists	R 284,592	85	R 24,190,320	6	R 1,707,552	6	R 1,707,552	55	R 15,652,560	72	R 20,490,624
Pharmacists	R 411,516	373	R 153,495,468	115	R 47,324,340	263	R 108,228,708	1312	R 539,908,992	1191	R 490,115,556
Radiographers	R 126,316	293	R 37,010,588	84	R 10,610,544	145	R 18,315,820	437	R 55,200,092	378	R 47,747,448
Environmental health practitioners	R 284,592	24	R 6,830,208	23	R 6,545,616	31	R 8,822,352	93	R 26,467,056	160	R 45,534,720
Occupational therapists	R 284,592	123	R 35,004,816	41	R 11,668,272	101	R 28,743,792	184	R 52,364,928	612	R 174,170,304
Physio-therapists	R 284,592	102	R 29,028,384	63	R 17,929,296	86	R 24,474,912	325	R 92,492,400	295	R 83,954,640
Psychologists and vocational councillors	R 284,592	106	R 30,166,752	20	R 5,691,840	77	R 21,913,584	109	R 31,020,528	258	R 73,424,736
TOTAL		27267	R 9,247,290,504	5763	R 1,816,218,460	5340	R 2,582,042,465	14359	R 5,823,580,858	39653	R 14,284,646,203

Source: Econex calculations from PERSAL and National Treasury data

Table 4 (continued)

	Average cost per worker	Mpumalanga		North-West		Northern Cape		Western Cape		South Africa	
		Public sector vacancies	Cost of filling vacancies	Public sector vacancies	Cost of filling vacancies	Public sector vacancies	Cost of filling vacancies	Public sector vacancies	Cost of filling vacancies	Public sector vacancies	Cost of filling vacancies
Medical Practitioners	R 796,822	535	R 426,299,770	157	R 125,101,054	408	R 325,103,376	545	R 434,267,990	10860	R 8,653,486,920
Medical specialists	R 1,052,236	88	R 92,596,768	16	R 16,835,776	18	R 18,940,248	397	R 417,737,692	3491	R 3,673,355,876
Nursing Assistants	R 127,939	1381	R 176,683,759	173	R 22,133,447	393	R 50,280,027	1253	R 160,307,567	20943	R 2,679,426,477
Professional Nurses	R 393,591	1354	R 532,922,214	443	R 174,360,813	638	R 251,111,058	2272	R 894,238,752	44780	R 17,625,004,980
Staff nurses and pupil nurses	R 166,925	1141	R 190,461,425	131	R 21,867,175	223	R 37,224,275	927	R 154,739,475	16202	R 2,704,518,850
Dental practitioners	R 538,904	30	R 16,167,120	11	R 5,927,944	42	R 22,633,968	33	R 17,783,832	921	R 496,330,584
Dental specialists	R 1,052,236	2	R 2,104,472		R 0		R 0	30	R 31,567,080	155	R 163,096,580
Dental therapists	R 284,592	27	R 7,683,984	4	R 1,138,368	10	R 2,845,920	22	R 6,261,024	287	R 81,677,904
Pharmacists	R 411,516	109	R 44,855,244	48	R 19,752,768	105	R 43,209,180	229	R 94,237,164	3745	R 1,541,127,420
Radiographers	R 126,316	121	R 15,284,236	17	R 2,147,372	50	R 6,315,800	96	R 12,126,336	1621	R 204,758,236
Environmental health practitioners	R 284,592	50	R 14,229,600	9	R 2,561,328	52	R 14,798,784	1	R 284,592	443	R 126,074,256
Occupational therapists	R 284,592	53	R 15,083,376	13	R 3,699,696	25	R 7,114,800	108	R 30,735,936	1260	R 358,585,920
Physio-therapists	R 284,592	63	R 17,929,296	10	R 2,845,920	47	R 13,375,824	83	R 23,621,136	1074	R 305,651,808
Psychologists and vocational councillors	R 284,592	17	R 4,838,064	11	R 3,130,512	11	R 3,130,512	90	R 25,613,280	699	R 198,929,808
TOTAL		4972	R 1,557,139,328	1043	R 401,502,173	2024	R 796,083,772	6097	R 2,303,521,856	106518	R 38,812,025,619

Source: Econex calculations from PERSAL and National Treasury data

Table 5: All foreign medical practitioners registered with the HPCSA by nationality, June 2011

Nationality	Total	Nationality	Total	Nationality	Total
American	23	Egyptian	18	Pakistani	82
Angolan	4	Eritrean	1	Palestinian	1
Arabian	19	Ethiopian	15	Polish	57
Argentina	4	French	4	Portuguese	4
Austrialian	15	German	73	Republic Of Congo	13
Austrian	10	Ghana	31	Romanian	7
Bangladeshi	66	Greek	4	Russian	20
Belarussian	1	Hungarian	1	Rwandese	32
Belgian	59	Indian	124	Sierra Leona	1
Botswana	16	Iranian	32	Spanish	2
British	265	Irish	26	Sri Lankan	3
Bulgarian	18	Israeli	4	Sudan	16
Burmanese	8	Italian	13	Swaziland	12
Burundi	1	Japanese	2	Swedish	12
Cameronian	17	Kenyan	65	Swiss	8
Canadian	25	Lesotho	20	Tanzanian	32
Chinese	7	Liberian	32	Tunisian	83
Congolese	11	Malawian	45	Ugandan	83
Cuban	194	Mauritius	20	Uruguayan	1
Czechoslovakian	2	Namibian	21	Zaire	199
Democratic Republic Of The Congo	264	Netherlands	36	Zambian	35
Denmark	3	Nigerian	551	Zimbabwean	84
Dutch	39	Norwegian	8		
GRAND TOTAL					**3,004**

Table 6 **Graduate Output of Higher Education Institutions 2008 by Programme**

Institution	MBChB	Dentistry	Pharmacy	Physiotherapy	Occup. Therapy	SLP & Audiol.	Dietetics	EMS	Biomedical Tech.	Clinical Tech.	Radiography	Optometry	All Professions
UP	200	49		38	27	28					25		367
WSU	103												103
UCT	164			54	46	28							292
US	157			38		19	16						230
UFS	109			37	31		24					25	226
UKZN	223		61	33	25	25						28	395
Wits	189	35	40	38	35	30							367
Limpopo	153	39	94	40	18	27	24				26		421
UWC		91	60	48	21		9						229
Rhodes			74										74
NW			76								32		108
CPUT								5	22		11		38
CUoT								10	21	16	20		67
DUoT								11	12	26	34		83
UJ								11	5			60	76
Mangosuthu									25				25
NMMU									7		26		33
TUT									18	15	6		39
All Institutions	1298	214	405	326	203	157	73	37	110	57	180	113	3173

Table 7 Projected Growth in Enrolments and Graduates by Profession at 5% per annum

	CURRENT SITUATION		2025 AFTER 5% p.a. GROWTH IN INTAKE TO 2025				2035 AFTER 5% p.a. GROWTH IN INTAKE TO 2025			
PROFESSION	EXISTING ENROLLED STUDENTS	EXISTING GRADUATES	ENROLLED STUDENTS	GRADUATES	INCREASE IN ENROLLED STUDENTS	INCREASE IN GRADUATES	ENROLLED STUDENTS	GRADUATES	INCREASE IN ENROLLED STUDENTS	INCREASE IN GRADUATES
MBChB	8589	1298	15549	1954	6960	656	15549	2351	6960	1053
DENTISTRY	1137	214	2144	309	1007	95	2144	376	1007	162
PHARMACY	1966	405	3893	686	1927	281	3893	794	1927	389
PHSYIOTHERAPY	1373	326	2718	558	1345	232	2718	645	1345	319
OCC THERAPY	1032	203	2043	347	1011	144	2043	402	1011	199
SLP AND AUDIOLOGY	659	157	1305	236	646	79	1305	273	646	116
DIETETICS	319	73	586	115	267	42	586	127	267	54
EMS	565	59	1119	101	554	42	1119	117	554	58
BIOMED TECH	1302	110	2578	188	1276	78	2578	218	1276	108
CLINICAL TECH	356	57	705	97	349	40	705	113	349	56
RADIOGRAPHERS	1224	180	2423	308	1199	128	2423	356	1199	176
OPTOMETRISTS	497	113	984	193	487	80	984	224	487	111

Table 8 (continuation data from Table 7) Projected Growth in Professionals by Discipline 2025 – 2035

After 5% growth in Intake to 2025 and with Attrition of 25% per annum

	CURRENT SITUATION			2025 AFTER 5% p.a. GROWTH IN INTAKE TO 2025			2035 AFTER 5% p.a. GROWTH IN INTAKE TO 2025		
PROFESSION	EXISTING PROFESSIONALS	GRADUATES PER ANNUM	NEW TOTAL PROFESSIONALS (REMAINING GRADUATES PLUS PROFESSIONALS)	EXISTING PROFESSIONALS	GRADUATES PER ANNUM	NEW TOTAL PROFESSIONALS (REMAINING GRADUATES PLUS PROFESSIONALS)	EXISTING PROFESSIONALS	GRADUATES PER ANNUM	NEW TOTAL PROFESSIONALS (REMAINING GRADUATES PLUS PROFESSIONALS)
MBChB	27002	1298	26381	22574	1954	22685	25260	2351	25508
DENTISTRY	3889	214	3816	3405	309	3432	3922	376	3969
PHARMACY	5000	405	5004	5829	686	5993	7620	794	7758
PHSYIOTHERAPY	4218	326	4209	4803	558	4933	6230	645	6340
OCCUPATIONAL THERAPY	2537	203	2537	2951	347	3034	3858	402	3928
SLP AND AUDIOLOGY	1001	157	1044	1682	236	1758	2448	273	2506
DIETETICS	1528	73	1491	1288	115	1296	1416	127	1427
EMS	1286	59	1253	1103	101	1113	1253	117	1266
BIOMEDICAL TECHNOLOGISTS	5296	110	5061	3353	188	3293	3035	218	3016
CLINICAL TECHNOLOGISTS	897	57	886	911	97	930	1128	113	1145
RADIOGRAPHERS	6032	180	5805	4309	308	4267	4332	356	4339
OPTOMETRISTS	3032	113	2935	2367	193	2370	2538	224	2553

Table 9 : 2008 Headcount enrolments by clinical programme and province

Qualification	Academic year of study	Eastern Cape	Free State	Gauteng	KwaZulu-Natal	Limpopo	Mpumalanga	Northern Cape	North West	Western Cape	NHLS	Total
MBChB	4 or 3	89	131	583	191	0	0	0	0	360	0	**1354**
	5 or 4	93	111	546	214	8	0	0	0	350	0	**1322**
	6 or 5	107	116	594	263	27	6	0	5	351	0	**1469**
BDS	3	0	0	151	0	0	0	0	0	87	0	**238**
	4	0	0	132	0	0	0	0	0	108	0	**240**
	5	0	0	119	0	0	0	0	0	97	0	**216**
Physiotherapy	3	0	39	142	39	0	0	0	0	137	0	**357**
	4	0	36	107	35	6	0	0	7	143	0	**334**
Occupational therapy	3	0	35	126	16	0	0	0	2	107	0	**286**
	4	0	30	81	21	8	0	0	1	106	0	**247**
Speech & hearing	3	0	0	86	23	0	1	0	0	51	0	**161**
	4	0	0	86	24	3	0	0	0	53	0	**166**
Pharmacy	4	131	0	80	59	84	0	0	100	95	0	**549**
Dental therapy	2	0	0	2	21	0	0	0	0	0	0	**23**
	3	0	0	14	20	0	0	0	0	0	0	**34**
Dietetics	4	0	24	42	32	6	0	0	19	36	0	**159**
MMed	1-4	64	169	1037	591	0	14	18	15	794	180	**2882**
MMed (Fam Med)	1-4	9	45	0	0	0	0	0	16	0	0	**70**
MDent	1-4	0	0	81	0	0	0	0	0	15	1	**97**
M Fam Med	1-4	0	0	27	52	0	0	0	0	5	0	**84**
Nursing	1	255	60	236	181	136	0	0	76	364	0	**1308**
	2	208	61	192	87	88	0	0	58	303	0	**997**
	3	186	52	194	85	80	0	0	52	195	0	**844**
	4/BTech	154	48	138	118	92	0	0	88	222	0	**860**
Biomedical Technology	1	39	40	105	73	0	0	0	0	178	0	**435**
	2	29	31	171	113	0	0	0	0	128	0	**472**
	3	18	28	229	67	0	0	0	0	144	0	**486**
	BTech	0	16	74	27	0	0	0	0	0	0	**117**
Clinical Technology	1	0	30	18	43	0	0	0	0	0	0	**91**
	2	0	21	26	50	0	0	0	0	0	0	**97**
	3	0	34	25	31	0	0	0	0	0	0	**90**
	BTech	0	24	39	49	0	0	0	0	0	0	**112**
Emergency Medical Care	1	0	22	37	40	0	0	0	0	51	0	**150**
	2	0	23	17	34	0	0	0	0	37	0	**111**
	3	0	13	19	48	0	0	0	0	45	0	**125**
	BTech	0	0	21	35	0	0	0	0	28	0	**84**
Radiography	1	39	48	179	61	4	0	0	0	98	0	**429**
	2	21	44	151	56	5	0	0	0	78	0	**355**
	3	23	34	140	49	5	0	0	0	54	0	**305**
	4/BTech	0	44	69	57	0	0	0	0	101	0	**271**
TOTAL		**1465**	**1409**	**6116**	**2905**	**552**	**21**	**18**	**439**	**4921**	**181**	**18027**

Table 10	FTEs Clinical Training 2010/2011		
Provinces	Institution	Headcounts 2008	FTE's
W Cape	UCT	1,216	241
	UWC	1,658	289
	CPUT	942	60
	SU	1,105	223
	Sub Total	***4,921***	***813***
E Cape	NMMU	520	73
	UFH	226	46
	WSU	649	129
	Rhodes	70	9
	UCT	-	-
	SU	-	-
	Sub Total	***1,465***	***256***
N West	NWU	393	71
	UL	15	2
	Wits	31	10
	Sub Total	***439***	***82***
Free State	UFS	993	189
	CUT	416	29
	Sub Total	***1,409***	***218***
N Cape	UFS	18	6
	Sub Total	***18***	***6***
Gauteng	UP	1,569	290
	UJ	670	74
	Wits	1,656	345
	VUT	278	16
	TUT	551	60
	UL	1,392	250
	Sub Total	***6,116***	***1,035***
UKZN	UKZN	1,874	400
	DUT	707	53
	Zululand	198	41
	MUT	126	5
	Sub Total	***2,905***	***499***
Limpopo	UL	352	62
	Venda	200	38
	Sub Total	***552***	***101***
Mpumalanga	UP	14	4
	UL	7	2
	Sub Total	***21***	***6***
NHLS	NHLS	181	56
	Sub Total	***181***	***56***
	TOTAL	**18,027**	**3,072**

Table A 11

Specialist Registrar HPCSA Posts, Filled and Unfilled, from the 'HPCSA Register of Approved Trainee Posts' 2008 - 2010*

	UCT		Wits		WSU		UKZN		US		UL		FS		UP		TOTAL POSTS		
Discipline	Number of Posts	Number Employed	Number of Posts	Number Employed	Number of Posts	Number Employed	Number of Posts	Number Employed	Number of Posts	Number Employed	Number of Posts	Number Employed	Number of Posts	Number Employed	Number of Posts	Number Employed	Total posts	Filled Posts	Unfilled Posts
Anaesthesiology	48	48	89	83	16		81	50	31	30	26	22	28	28	46	42	365	303	62
Cardiothoracic Surgery	9	8	10	1	2		26	13	4	4	5		5	4	5	4	66	34	32
Community Health (PH)	20	10	16	10			20	6	4	2	10	3	6	1	12	1	88	33	55
Dermatology	8	3	8	8	1		16	4	4	4	5	4	4	4	5	4	51	31	20
Diagnostic Radiology	22	20	50	50	5		38	27	22	20	20	10	14	10	25	21	196	158	38
Emergency Medicine	32		16	7					32	16	2				6		88	23	65
Family Medicine			32				57	4									89	4	85
Medical Genetics			12	2			1	0									13	2	11
Medicine	42	35	127	88	18		74	60	43	37	25	19	28	22	36	30	393	291	102
Neurology	3	2	12	9			14	6	2	2	4	1	3	2	5	4	43	26	17
Neurosurgery	9	7	10	6	2		7	6	5	5	6	5	6	6	6	5	51	40	11
Nuclear Medicine	2	1	5	5			0	0	7	3	5	3	2	1	4	2	25	15	10
Obstetrics and Gynaecology	39	25	49	40	18		99	35	22	20	26	12	20	17	25	20	298	169	129
Occupational Medicine	4		4				6	0	2	1	2						18	1	17
Ophthalmology	11	9	17	17	9		17	14	10	9	14	7	8	7	8	5	94	68	26
Orthopaedics	23	17	34	25	13		49	27	19	19	18	15	18	14	34	31	208	148	60
Otorhinolaryngology	9	6	13	13	4		12	8	6	6	10	6	5	4	8	6	67	49	18
Paediatric Surgery			4	1			10	1									14	2	12
Paediatrics	38	38	61	47	35		95	57	30	25	34	6	33	19	41	22	367	214	153
Pathology (Anatomical)	14	8	24	15			21	6	14	10	10	5	6	6	8	3	97	53	44
Pathology (Chemical)	5	2	8	7			4	4	5	4	5	4	4	4	10	3	41	28	13
Pathology (Clinical)	3	0	8	5			0	0	6	3			3	3	5		25	11	14
Pathology (Forensic)	10	5	10	4			4	3	6	2	8	1	8	5	4	2	50	22	28
Pathology (Haematological)	6	4	15	11			5	2	5	2	4	3	4	4	6		45	26	19
Pathology (Microbiological)	5	2	12	11			10	6	4	4	6	4	6	3	8	2	51	32	19
Pathology (Virological)	4	2	2	0			8	2	3	2	4	2			5	1	26	9	17
Physical Medicine							0	0							2		2	0	2
Plastic and Rec Surgery	4	6	10	10	4		8	3	4	4	5	5	3	3	5	3	43	34	9
Psychiatry	30	28	46	45	20	6	37	17	21	20	21	12	17	10	24	18	216	156	60
Radiation Oncology	12	9	9	8	8		9	7	6	5	4		9	9	4	2	61	40	21
Surgery	30		54	33	18		115	55	26	22	24	8	24	22	30	23	321	163	158
Urology	5	4	11	7	2		26	13	7	6	4	2	6	6	9	6	70	44	26
TOTALS	**447**	**299**	**778**	**568**	**175**	**6**	**869**	**436**	**350**	**287**	**307**	**159**	**270**	**214**	**386**	**260**	**3582**	**2229**	**1353**
PERCENTAGE		**67**		**73**		**3**		**50**		**82**		**52**		**79**		**67**		**62**	**38**

* The HPCSA visits different Faculties of Health Sciences each year. The data captured is over a period of 2008 - 2010

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Table A 12

Subspecialist HPCSA trainee posts, filled and unfilled, from the 'HPCSA Register of Approved Trainee Posts' 2008 - 2010*

	UCT		Wits		WSU		UKZN		US		UL		FS		UP		TOTAL POSTS		
Discipline	Number of Posts	Number filled	Number of Posts	Number filled	Number of Posts	Number filled	Number of Posts	Number filled	Number of Posts	Number filled	Number of Posts	Number filled	Number of Posts	Number filled	Number of Posts	Number filled	Total Posts	Filled Posts	Unfilled Posts
Cardiology	5	4	14	11			7		7	3	2						35	18	17
Child Psychiatry	2	1	4	2					1						2		9	3	6
Clinical Haematology	3	2	3	3			6				1						13	5	8
Critical Care	7	2	13	4	1		8		4	1			1		1		35	7	28
Developmental Paediatrics	1	1	1	0					1								3	1	2
Endocrinology	1	1	8	4			3	2	1	1							13	8	5
Family Medicine	6				18				33	12	36		16		38		147	12	135
Gastroenterology	7	7	11	4			4	2	2		1		2		3		30	13	17
Geriatric Medicine	1	1	2	0			1										4	1	3
Gynaecological Oncology	2						1		1	1					2		6	1	5
Infectious Diseases	4		4	0			1		3	1			2				14	1	13
Maternal and Fetal Medicine	3		1	0			3		2						2		11	0	11
Medical Genetics	4												1		3		8	0	8
Medical Genetics	1								4				1				6	0	6
Medical Oncology			8	3					2				1	1	3		14	4	10
Neonatology	4	1	6	6			3	2	4		1				1		19	9	10
Nephrology	4	2	16	5			3	1	4				2		1		30	8	22
Paediatric Neurology	3	1	2						1	1					3		9	2	7
Paediatric Cardiology					2										4		6	0	6
Paediatric Surgery	6										2		1		2		11	0	11
Paediatric Surgery	2	2			4				4				1	1	1		12	3	9
Pulmonology	4	2	8	6	2				4	2			2		2		22	10	12
Reproductive Medicine	2		5	3					3	2							10	5	5
Rheumatology	3	1	4	2			3	1	3								13	4	9
Trauma Surgery	2		2				4										8	0	8
Vascular surgery	1	1					3		2				1		1		8	1	7
TOTALS	**78**	**29**	**112**	**53**	**27**	**0**	**50**	**8**	**86**	**24**	**43**	**0**	**31**	**2**	**69**	**0**	**496**	**116**	**380**
PERCENTAGE		**37**		**47**		**0**		**16**		**28**		**0**		**6**		**0**			**77**

* The HPCSA visits different Faculties of Health Sciences each year. The data captured is over a period of 2008 - 2010

Table A 13

Specialist Academic Clinician Posts, filled and unfilled, from the 'HPCSA Register of Approved Trainee Posts' 2008 - 2010

	UCT			Wits			WSU			UKZN			US			UL			FS			UP			Total Posts		
	Full-time Specialists			Full-time Specialists			Full-time Specialists			Full-time Specialists			Full-time Specialists			Full-time Specialists			Full-time Specialists			Full-time Specialists					
Discipline	Number of Posts	Number Employed	FTE Part Time	Number of Posts	Number Employed	FTE Part Time	Number of Posts	Number Employed	FTE Part Time	Number of Posts	Number Employed	FTE Part Time	Number of Posts	Number Employed	FTE Part Time	Number of Posts	Number Employed	FTE Part Time	Number of Posts	Number Employed	FTE Part Time	Number of Posts	Number Employed	FTE Part Time	Total Posts	Total Employed	Total Part Time
Anaesthesiology	30	30	0.125	52	41	3.65	9			61	34	4.05	16	4	4	12	11		15	15	87	24	21	3.2	219	156	102.03
Cardiothoracic Surgery	14	12	0.625	8	8	4	2			8	4	0.48	3	3	6.25	7	2		5	3	0.875	4	3	1.25	51	35	13.48
Community Health (PH)	7	6	0.75	9	8					3	4		2	2		6	2		2	2		6	3	2	35	27	2.75
Dermatology	4	3	1.125	2	2	0.4625	1			6	6		2	1	0.25	4	3		2	2		5	5	0	26	22	1.84
Diagnostic Radiology	10	10	0.4	60	53	0.4	3			26	13	0.13	8	8	1.25	8	5	0.05	7	6	0.05	12	6	0.025	134	101	2.31
Emergency Medicine				3												3	1							0	6	1	0.00
Family Medicine					4					2	25														2	29	0.00
Medcical Genetics				5	5																				5	5	0.00
Medicine	51	45	4.6	102	91	1.175	13			43	28	4.7	30	26	16.5	37	20		21	18	1.925	40	28	4.1	337	256	33.00
Neurology	4	5		8	7	0.925				8	5		3	3	1	2	2		4	4		5	3	1.15	34	29	3.08
Neurosurgery	5	5	0.15	8	6	0.4				7	3	1.4	3	2	8.25	3	3		4	2	0.4	3	2	1.65	33	23	12.25
Nuclear Medicine	2	2		6	3	1.25				0	0		4	4	0.25	4	2		1	1		2	3	1.2	19	15	2.70
Obstetrics and Gynaecology	19	17	3	32	25	2.725	12			48	35	1.95	20	20	17.75	9	8	3.35	12	13		17	16	1.4	169	134	30.18
Occupational Medicine	2	2								3	3		1	1											6	6	0.00
Ophthalmology	6	5	0.35	12	12	0.15	9			12	11	0.1	5	4	3.5	7	7		5	2	0.2	4	3	1.125	60	44	5.43
Orthopaedics	12	10		31	20	3.9	5			16	13	0.95	12	12	10.75	15	10		29	21	0.7	32	15	4.5	152	101	20.80
Otorhinolaryngology	5	5		9	7	0.075	3			6	8	1.6	3	3	19	5	5		4	4	0.2	7	3	0.4	42	35	21.28
Paediatric Surgery										9	3	0.8	0								1.275				9	3	2.08
Paediatrics	24	24		56	55	3.475	29	7		39	26	1.1	29	29	15	22	15	2	22	19		24	18	1.15	245	193	22.73
Pathology (Anatomical)	11	11		14	14					14	6		8	6	5	9	4		5	5		7	4	0.575	68	50	5.58
Pathology (Chemical)	4	3		10	4	0.625				6	2	0.5	5	4		5	3		3	2		4	4	0	37	22	1.13
Pathology (Clinical)													9	9	5								20	0	9	29	5.00
Pathology (Forensic)	8	6		7	7					6	4		3	3	0.75	4	3		5	5		4	3	0	37	31	0.75
Pathology (Haematological)	4	4	0.25	10	10	3.5				6	5		3	3	0.5	4	3	0.4	3	2		4	2	0	34	29	4.65
Pathology (Microbiological)	4	3		14	9	0.025				8	5		4	3	0.75	5	3		4	1		7	1	0.375	46	25	1.15
Pathology (Virological)	2	2	0.15	3	3					5	2	0.63	2	1		3	3		1					0	16	11	0.78
Physical Medicine																						1		0	1	0	0.00
Plastic and Rec Surgery	2	2	0.875	6	6	0.2	2	3		6	3		2	2	2.5	5	0.5	1.5	2	1	0.3	5	3	0.45	30	20.5	5.83
Psychiatry	24	23	0.3	44	33	0	10	2		19	13	0.88	23	23	0.25	22	9		13	5		13	9	2.7	168	117	4.13
Radiation Oncology	9	8		10	8	1.45	4			6	2	1	8	5		4	2		8	4		5	3	0	54	32	2.45
Surgery	17	14		43	37	3.025	13			87	55	9.03	18	14	6.25	29	15	1.875	14	13		20	15	5	241	163	25.18
Urology	3	2	0.125	7	7	1.875				8	4	0.48	5	3	3	4	2	1.2	3	2	0.6	6	6	2.55	36	26	9.83
TOTALS	**283**	**259**	**13**	**571**	**485**	**33.2875**	**115**	**12**	**0**	**468**	**322**	**29.78**	**231**	**198**	**127.75**	**238**	**143.5**	**10.375**	**194**	**152**	**93.525**	**261**	**199**	**34.8**	**2361**	**1770.5**	**342.52**

ANNEXURE B

NDoH Workforce Model

Draft NDoH Human Resource Strategy for the Health Sector

Medium Term Strategy 2012/13–2016/17

August 2011 V1

Annexure B

WORKFORCE PLANNING MODEL METHODOLOGY AND OUTPUTS

INTRODUCTION

The workforce strategy provided relies ultimately on the on-going formal and semi-formal technical and participative engagements with all relevant role-players. For a health workforce strategy to impact on health services a well-defined and explicit strategic foundation is required which is effectively underpinned by legislative and financial instruments. To this end a modelling approach has been developed to make explicit the central decision points required to frame and implement a comprehensive workforce strategy. This annex provides the modelling framework and methodology, all associated qualifications, and a set of outputs useful to the planning process.

Central to an understanding of the modelling framework is its role in the strategic planning process. It has been designed to support thinking and policy development by making decisions and their implications explicit. It has not been designed to substitute for active processes required to provide evidence for policy proposals. The model is consequently dependent on other evidence-based research and consultative processes to determine its key inputs. The quality of the outputs, and any resulting plan, are therefore only as good as the information used to frame the driving elements of the model.

The workforce model, as a technical framework, provides an integration point for several exercises carried out separately allowing for the development of a holistic workforce strategy derived from many micro plans at the level of individual health professions all subject to a macro budget constraint. The model seeks to reduce the complexity of the many elements of a planning process enable external evaluative processes to focus attention exclusively on relevant decision points and trade-offs. Central to this exercise is the need for all external processes and technical work to reduce their recommendations to four areas of policy discretion:

1. The target minimum staff (health professional) to population ratio for each critical health professional;
2. The required years to achieve the target;
3. The plan to manage exits from the system (or the public sector) expressed numerically by year; and
4. The plan to manage entrants to the system outside of the maximum potential of the education system.

Outside of the above, all other variables are endogenously determined. The choice between endogenous (determined by assumptions internal to the model) and exogenous variables is based on a distinction between policy decisions which are reducible to logical and programmable relationships determinable *ex ante*, and those that involve relationships and concepts which are not programmable *ex ante* and are by their nature subject to discretion in the rational policy choices made.[1]

This annex therefore provides the modelling approach and methodology, its location in the policy process, and certain of its outputs based on a provisional scenario.

[1]In other words, more than one rational choice may exist to achieve a given objective. For instance a workforce gap could be made up through technological changes which reduce the need for more personnel. Alternatively a change in scopes of practice could reduce the need for linear increases in expensive health professionals. In such instances the context-specific facts, evidence, and opportunities will inform a policy choice, which will not be reducible to a constant set of relationships through time.

APPROACH AND METHOLOGY

Methodological outline

The overall approach requires that a single policy choice is made which determines a number of subordinate policy choices. These can be reflected as a series of steps:

- ***Step 1: a staff(health professional) to population ratio target is set***: this could be an increase or a decrease from an existing ratio depending on the policy strategy. This reflects the primary policy choice driving all other choices. Although this is a key driver of the subordinate policy choices, the model will also be required to validate whether the targets (by health professional) are collectively achievable. Finalising step 1 in conjunction with step 2 is therefore likely to involve an iterative process. The ratio used needs to be based on what government regards as the minimum required for the national population regardless of whether public or private sector services are used. Private sector ratios in excess of this minimum are irrelevant provided they do not undermine the achievement of the national target norms in the public sector.
- ***Step 2: the time taken to achieve the policy***: the ratio indicated in step 1 could be achieved rapidly or over an extended period depending upon a range of practical factors and constraints. The choice of time period has direct implications for all subordinate policy choices required to achieve step 1.
- ***Step 3: changes in the production of professionals consistent with the targets***: this requires either increases or decreases in enrolments within educational institutions for professionals consistent with any revised target ratios (from step 1). The model automates this and constrains enrolment changes to that sufficient to maintain a target staff (health professional) to population ratio.[2] This constraint ensures that long-term changes in training and education enrolments do not overshoot the minimum requirements of the policy.
- ***Step 4: managing controllable entrants and exits to each health profession***: which requires that government consider non-educational strategies to attract professionals on a one-off basis into the system where the achievement of a target within a particular time period is seen as important. Educational strategies could be considered where they are one-off in nature. This may not be required where the policy choice is to rely exclusively on an expansion of enrolments into education and training and which may go together with a longer time period to achieve a target.
- ***Step 5: affordability of the target ratio***: which is affected by the time period set for its achievement. What may not be affordable in seven years may be affordable in fourteen, provided there is real economic growth. Understanding this is important to the policy choices made. The model consequently quantifies the cost of the target and contrasts this with "fiscal space" based on an assumed long-run real gross domestic product (GDP) growth rate assumption of 3.5% per annum. Where strategies exceed this growth rate in a given year practical feasibility questions may require a review of the target ratio itself (step 1) or time period for its implementation (step 2). The model automatically costs a target based on public sector remuneration. Although the costing is for both public and insured populations, it bases the estimate of affordability on the uninsured population only.
- ***Step 6: calculating the cost of the conditional transfers to higher education institutions (HEIs) and provincial governments***: once steps 1 and 2 have been structured to be affordable, government needs to determine its subsidies to provincial governments and HEIs required to underpin step 3, the production of

[2]This is achieved by matching the enrolments required to achieve the required number of graduates in a given year required to exactly match the expected exits from a profession in a given year. The model performs this calculation by year based on the target number of professionals. As each profession experiences different replacement rates, an estimated rate based on 2010 (assuming this reflects a steady-state replacement rate) is used for all years.

health professionals consistent with the targets. The value of these subsidies must be based on the actual cost of teaching and training less student fees.

Location in the policy process

The information required for step 1 above requires interrogation of service planning configuration and their staff requirements. Such exercises require consideration of population need for services based on the burden of disease for all age cohorts and the staff requirements for the relevant services. Such planning by its very nature cannot be one-off and requires constant interrogation and review. To the extent that such planning for all services is able to reach discrete conclusions a final composite staff to population ratio should result. Once achieved, this becomes the target used in step 1 above.

However, all these processes depend on the availability of complete real time information on health professionals in both the public and private sectors. This would include those actively working as well as those entering and leaving the system (both public and private sectors). The equilibrium between exits and entrants to the system need to be constantly monitored to ensure that government can result to shortfalls against policy targets.

SCENARIOS

The analysis reported in this annex reflects the outputs of a preferred provisional strategic option which had been contrasted with two alternatives. All three scenarios incorporate the same set of target staff to population ratios (expressed as staff to 10,000 population ratios) with scenarios differentiated on the basis of alternative time periods (expressed in years) to achieve the ratios.

The preferred scenario merely reflects a point-of-departure for consultation and should change based on consultation within government and with role-players. Refinements are also expected when more sophisticated service planning exercises have been carried out sufficient to achieve more reliable policy targets.

Assumptions common to all three scenarios are:

- Staff to population ratios;
- The start year for policy action, which is set at 2012; and
- The end year for planning set at 2025.

The budget constraint requires that scenarios are measured against an indication of fiscal space. This is assumed to be long-term GDP growth which is set 3.5% per annum. Where long-term growth is found to be lower, government will be required to adjust spending plans to fit within the reduced fiscal space. Scenarios that for short periods exceed a long-term growth rate are assumed to be consistent with available fiscal space where slower growth rates in other years keeps the strategy in long-term equilibrium.

The three scenarios assessed are differentiated exclusively on the following basis:

- ***Baseline***: where no targets are set and the system passively continues its education and training policy at existing levels
- ***Scenario 1***: period to achieve target ratios = 7 years;
- ***Scenario 2***: period to achieve target ratios = 10 years;
- ***Scenario 3 (preferred)***: period to achieve target ratios various according priorities and feasibility, but never longer than 14 years.

STRATEGIC RESULTS

The baseline scenario under-performs in almost every respect, indicating the policy risk in a passive policy stance. Scenarios 1 and 2 both exceed the budget constraint. Scenario 3 takes longer to achieve the targets relative to scenarios 1 and 2, but nevertheless substantially achieves them within the 14 year planning period while staying in line with the assumed fiscal space. Also see **figures 1** and **2**.

Table 1: Achievement of workforce targets evaluated against available fiscal space (2011-2025)

Scenarios	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Provincial salary expenditure estimate evaluated against fiscal space (2011 prices, R'million)															
Fiscal space	56 700	58 685	60 739	62 865	65 065	67 342	69 699	72 139	74 664	77 277	79 981	82 781	85 678	88 677	91 781
Baseline	56 700	58 278	58 468	59 402	60 339	61 265	62 183	63 096	63 999	64 894	65 780	66 659	67 506	68 359	69 225
Scenario 1	56 700	58 278	62 914	67 258	71 467	75 590	79 692	83 843	88 196	88 736	89 534	90 544	91 666	92 910	94 265
Scenario 2	56 700	58 278	61 954	65 167	68 297	71 387	74 466	77 552	80 645	83 738	86 807	89 745	90 704	91 816	93 090
Scenario 3	56 700	58 278	58 881	62 437	65 312	68 259	70 756	73 455	76 202	78 986	81 824	84 725	87 431	90 435	93 480
Aggregate achievement of Targets															
Baseline	666	1 023	442	2 160	3 986	5 842	7 694	9 521	11 296	13 003	17 272	16 188	14 781	13 378	12 011
Scenario 1	-83 043	-83 439	-72 252	-58 008	-43 502	-29 051	-14 651	-242	14 274	14 093	17 960	15 406	12 890	10 700	8 806
Scenario 2	-83 043	-83 439	-75 811	-66 063	-56 222	-46 360	-36 480	-26 605	-16 784	-7 119	5 612	10 279	7 896	5 684	3 821
Scenario 3	-83 043	-83 439	-94 083	-78 840	-66 305	-54 346	-43 721	-35 080	-26 090	-16 764	-3 600	3 360	4 850	7 239	9 256
Teaching and Research Cost: Service Platform (equivalent to HPTDG purpose)															
Baseline	764	735	742	751	760	769	778	787	796	805	811	821	832	844	858
Scenario 1	764	765	814	869	928	991	1 057	1 126	1 188	1 239	1 279	1 317	1 353	1 387	1 420
Scenario 2	764	760	801	844	891	940	992	1 044	1 099	1 155	1 213	1 264	1 311	1 354	1 394
Scenario 3	764	739	766	800	835	875	916	959	1 003	1 049	1 096	1 145	1 196	1 249	1 305
Teaching and Research Cost: Teaching Platform (cost for clinical supervision)															
Baseline	858	710	738	762	784	803	820	835	849	862	871	884	897	912	927
Scenario 1	858	739	807	874	942	1 011	1 081	1 155	1 221	1 276	1 319	1 360	1 398	1 434	1 468
Scenario 2	858	734	794	850	906	961	1 017	1 073	1 131	1 191	1 252	1 306	1 355	1 400	1 441
Scenario 3	858	720	769	818	865	912	959	1 007	1 055	1 104	1 153	1 205	1 257	1 311	1 367
Teaching and Research Cost: Total															
Baseline	1 623	1 445	1 480	1 514	1 544	1 572	1 598	1 622	1 645	1 667	1 683	1 705	1 729	1 756	1 784
Scenario 1	1 623	1 504	1 621	1 742	1 870	2 002	2 138	2 281	2 409	2 515	2 598	2 677	2 751	2 821	2 888
Scenario 2	1 623	1 495	1 594	1 694	1 797	1 902	2 008	2 118	2 230	2 346	2 465	2 569	2 666	2 754	2 835
Scenario 3	1 623	1 459	1 536	1 617	1 700	1 787	1 875	1 965	2 058	2 153	2 249	2 350	2 453	2 560	2 671

Figure 1: Worforce Scenarios: Expenditure Comparison Compared to Fiscal Space

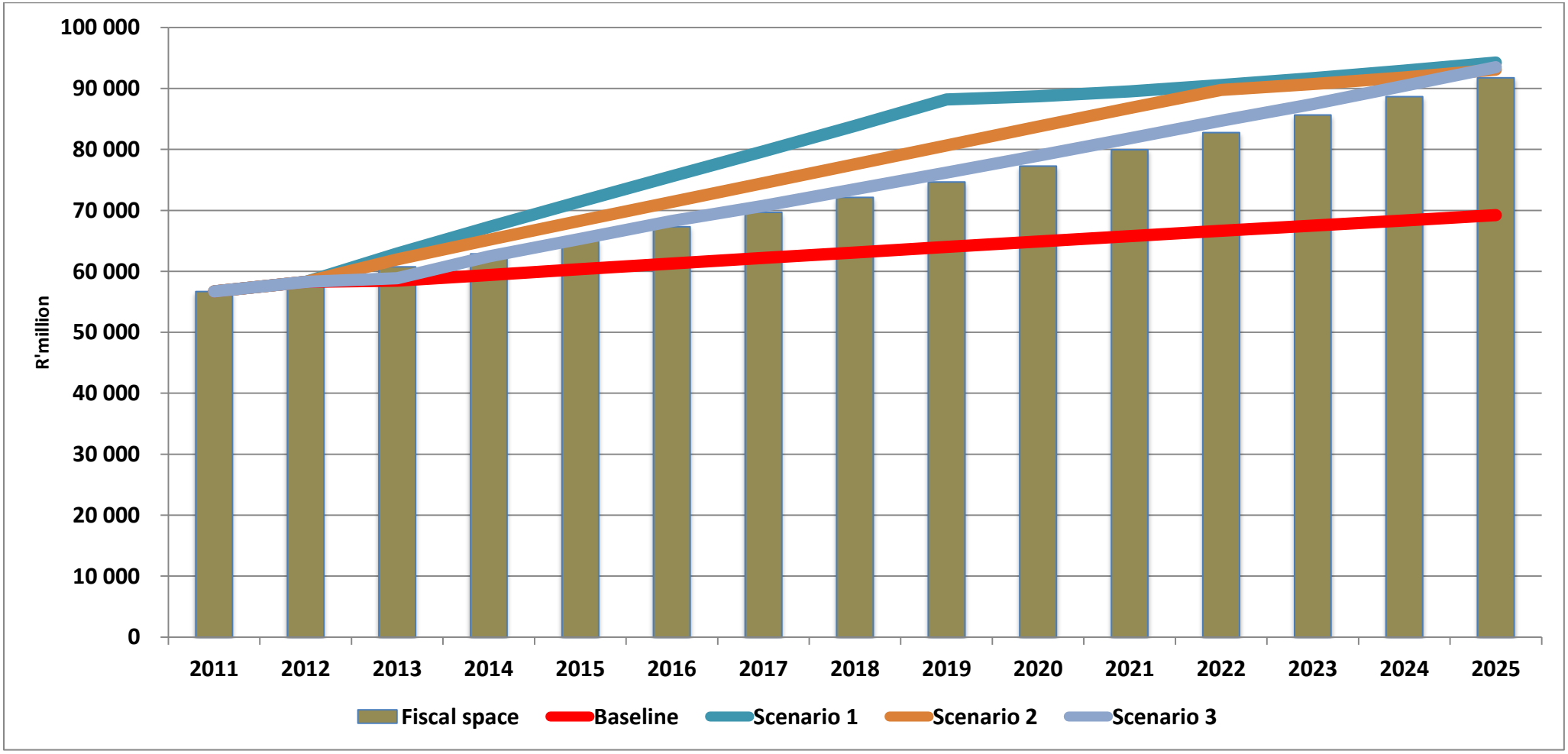
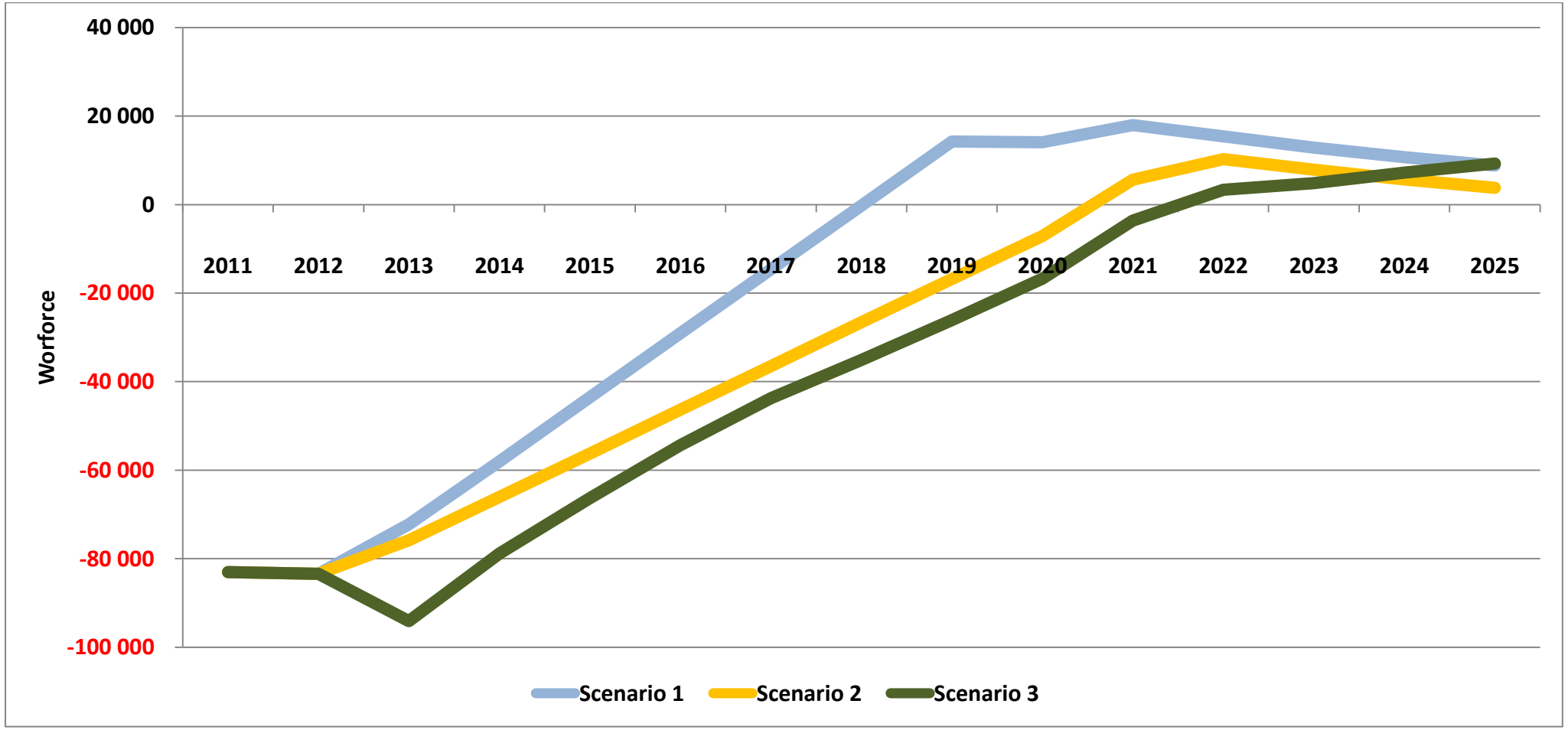


Figure 2: Workforce Scenarios: Performance in Relation to Targets



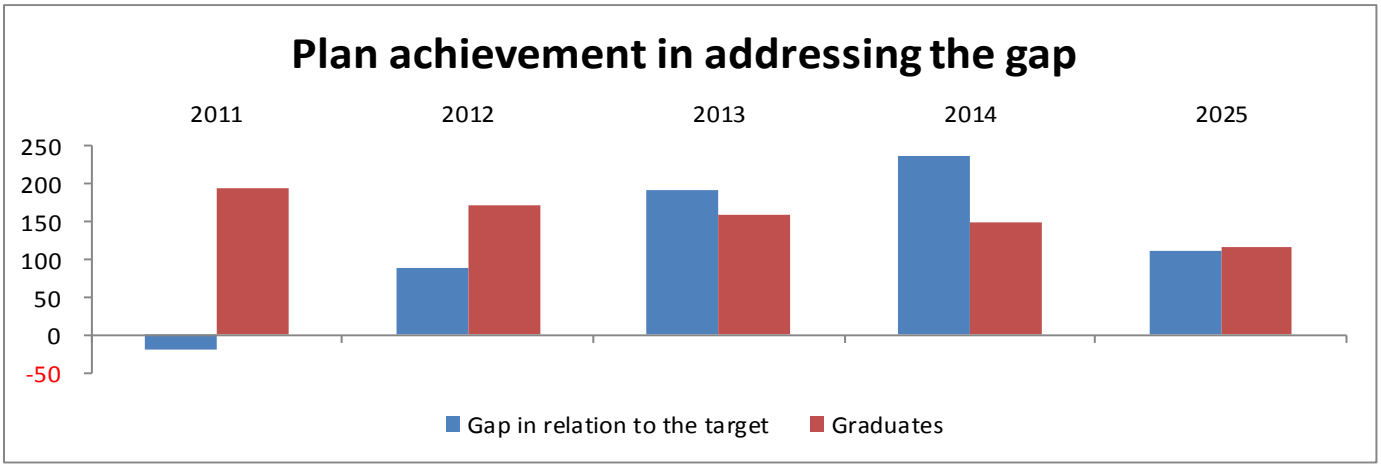
ALLIED HEALTH PROFESSIONALS

Audiologists

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	2	
Gap in 2011 based on assessment	-21	
Current staff to population ratio (per 1,000)	0.14	
Target staff to population ratio (per 1,000)	0.17	
Available professionals for national need	840	
Total entrants	193	
Total exits	76	
Total entrants less exists	117	
Enrolled students	771	
Graduates	193	Years to achieve target = 5

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	711	840	957	1 068	1 120	1 114
	Professionals: end of year	840	957	1 068	1 120	1 113	1 129
	annual growth: start of year	n/a	n/a	***13.9%***	***11.6%***	***4.9%***	***1.4%***
	Gap in relation to the target	-142	-21	**89**	**192**	**236**	**112**
	Positions at start of year: target	853	861	868	876	884	1 002
	Pop per professional: actual (per 10,000)	0.14	0.14	0.20	0.22	0.23	0.21
	Pop per professional: target (per 10,000)	0.17	0.17	0.17	0.17	0.17	0.17
Entrants and exists	Intake from training	193	193	193	170	158	114
	Intake - other (require plan)	0	0	-421			
	TOTAL ENTRANTS	193	193	**197**	**148**	**94**	**114**
	Exit - other (require plan)	28	34	38	43	45	45
	Exit - Retire at 65 (expected)	21	25	29	32	34	33
	Exit - death/invalidity/etc (expected)	14	17	19	21	22	22
	TOTAL EXITS	63	76	**86**	**96**	**101**	**100**
	TOTAL ENTRANTS LESS EXITS	129	117	***111***	***52***	***-7***	***15***
Education and training	New student intake	193	193	122	133	138	130
	Continuing students	578	578	559	499	460	330
	Total enrolment at start of year	771	771	681	631	598	460
	% change in new intake	n/a	n/a	-36.6%	8.6%	4.0%	1.8%
	Graduates	193	193	170	158	150	115
	Pre-service training loss	19	19	12	13	14	13
	Continuing students	559	559	499	460	435	332

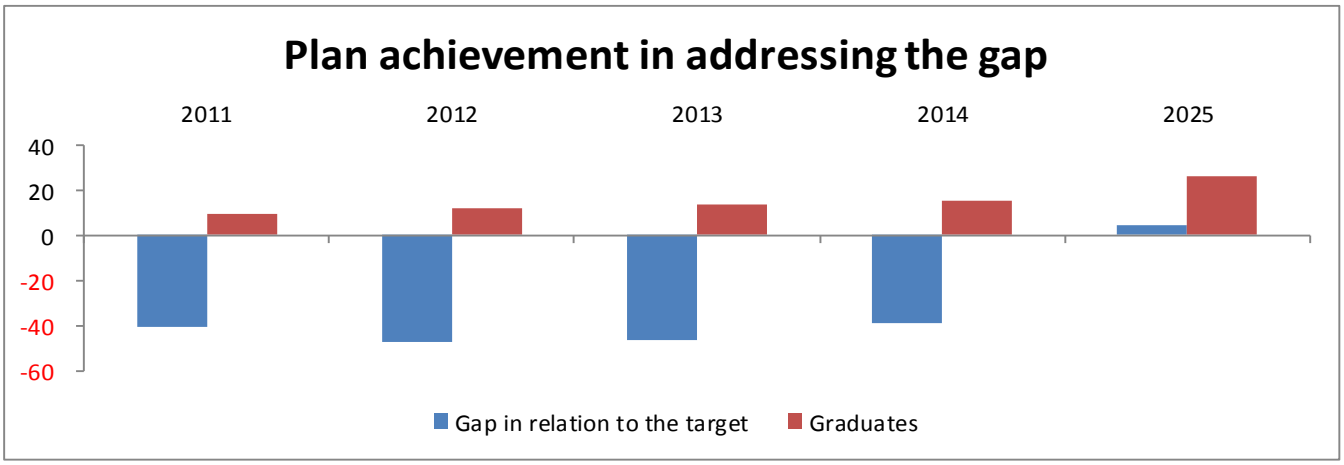


Biokineticists

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	2	
Gap in 2011 based on assessment	-41	
Current staff to population ratio (per 1,000)	0.03	
Target staff to population ratio (per 1,000)	0.04	
Available professionals for national need	162	
Total entrants	9	
Total exits	14	
Total entrants less exists	-5	
Enrolled students	37	
Graduates	9	Years to achieve target = 5

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	167	162	156	160	169	240
	Professionals: end of year	162	156	160	169	184	244
	annual growth: start of year	n/a	n/a	*-3.2%*	*2.0%*	*6.0%*	*1.5%*
	Gap in relation to the target	-33	-41	-48	-46	-39	4
	Positions at start of year: target	200	202	204	206	208	236
	Pop per professional: actual (per 10,000)	0.03	0.03	0.03	0.03	0.04	0.05
	Pop per professional: target (per 10,000)	0.04	0.04	0.04	0.04	0.04	0.04
Entrants and exists	Intake from training	9	9	9	12	14	26
	Intake - other (require plan)	0	0	80			
	TOTAL ENTRANTS	9	9	**17**	**24**	**30**	**26**
	Exit - other (require plan)	7	6	6	6	7	10
	Exit - Retire at 65 (expected)	5	5	5	5	5	7
	Exit - death/invalidity/etc (expected)	3	3	3	3	3	5
	TOTAL EXITS	15	14	**14**	**14**	**15**	**22**
	TOTAL ENTRANTS LESS EXITS	-5	-5	***3***	***10***	***15***	***4***
Education and training	New student intake	9	9	22	22	23	31
	Continuing students	28	28	27	34	40	74
	Total enrolment at start of year	37	37	48	56	63	104
	% change in new intake	n/a	n/a	133.2%	3.1%	4.5%	1.8%
	Graduates	9	9	12	14	16	26
	Pre-service training loss	1	1	2	2	2	3
	Continuing students	27	27	34	40	45	75

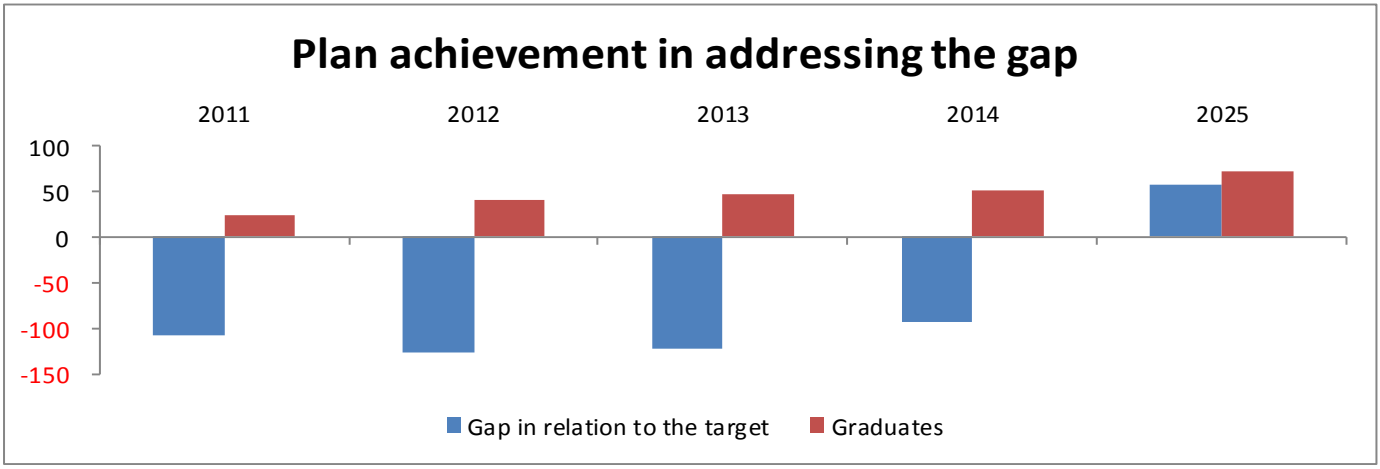


Environmental assistants

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	2	
Gap in 2011 based on assessment	-108	
Current staff to population ratio (per 1,000)	0.09	
Target staff to population ratio (per 1,000)	0.11	
Available professionals for national need	428	
Total entrants	25	
Total exits	39	
Total entrants less exists	-14	
Enrolled students	50	
Graduates	25	Years to achieve target = 5

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	442	428	414	424	457	682
	Professionals: end of year	428	414	424	457	503	691
	annual growth: start of year	n/a	n/a	*-3.3%*	*2.4%*	*7.9%*	*1.4%*
	Gap in relation to the target	-88	-108	-127	-122	-93	58
	Positions at start of year: target	531	536	541	545	550	624
	Pop per professional: actual (per 10,000)	0.09	0.09	0.09	0.09	0.09	0.13
	Pop per professional: target (per 10,000)	0.11	0.11	0.11	0.11	0.11	0.11
Entrants and exists	Intake from training	25	25	25	40	47	71
	Intake - other (require plan)	0	0	193			
	TOTAL ENTRANTS	25	25	47	72	87	71
	Exit - other (require plan)	18	17	17	17	18	27
	Exit - Retire at 65 (expected)	13	13	12	13	14	20
	Exit - death/invalidity/etc (expected)	9	9	8	8	9	14
	TOTAL EXITS	40	39	37	38	41	61
	TOTAL ENTRANTS LESS EXITS	-15	-14	*10*	*34*	*46*	*9*
Education and training	New student intake	25	25	57	59	62	81
	Continuing students	25	25	23	34	41	63
	Total enrolment at start of year	50	50	80	93	103	144
	% change in new intake	n/a	n/a	128.3%	3.4%	5.8%	1.8%
	Graduates	25	25	40	47	52	72
	Pre-service training loss	3	3	6	6	6	8
	Continuing students	23	23	34	41	45	64

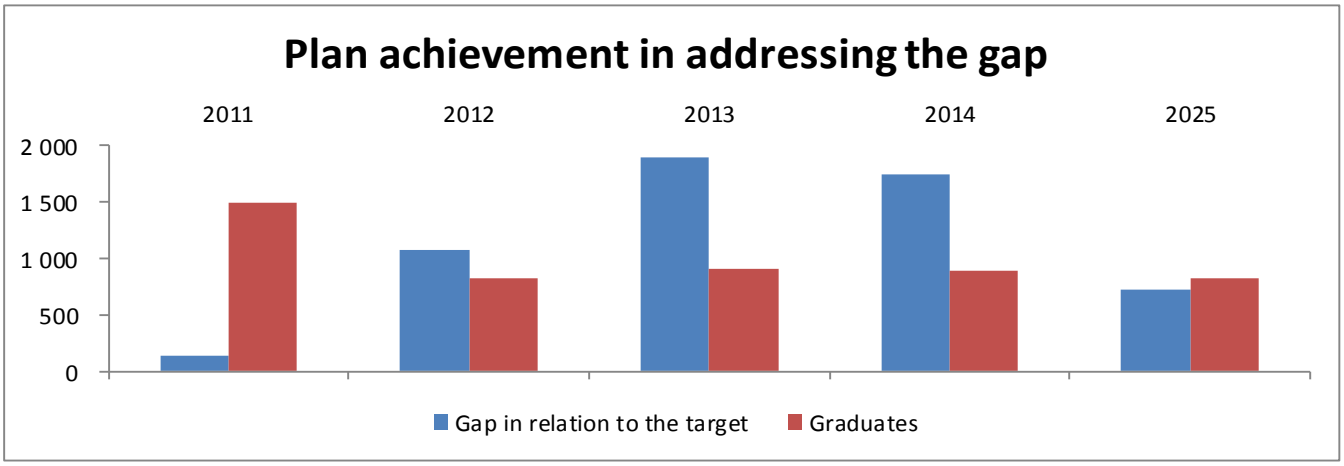


Environmental health practitioners

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	2	
Gap in 2011 based on assessment	137	
Current staff to population ratio (per 1,000)	0.92	
Target staff to population ratio (per 1,000)	1.10	
Available professionals for national need	5 587	
Total entrants	1 491	
Total exits	503	
Total entrants less exists	988	
Enrolled students	1 491	
Graduates	1 491	Years to achieve target = 5

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	4 501	5 587	6 575	7 447	7 335	7 068
	Professionals: end of year	5 587	6 575	7 447	7 335	6 949	7 242
	annual growth: start of year	n/a	n/a	***17.7%***	***13.3%***	***-1.5%***	***2.5%***
	Gap in relation to the target	-900	137	**1 076**	**1 899**	**1 737**	**720**
	Positions at start of year: target	5 402	5 450	5 499	5 549	5 599	6 348
	Pop per professional: actual (per 10,000)	0.92	0.92	1.39	1.56	1.52	1.33
	Pop per professional: target (per 10,000)	1.10	1.10	1.10	1.10	1.10	1.10
Entrants and exists	Intake from training	1 491	1 491	1 491	827	906	811
	Intake - other (require plan)	0	0	-3 097			
	TOTAL ENTRANTS	1 491	1 491	**1 464**	**558**	**274**	**811**
	Exit - other (require plan)	180	223	263	298	293	283
	Exit - Retire at 65 (expected)	135	168	197	223	220	212
	Exit - death/invalidity/etc (expected)	90	112	131	149	147	141
	TOTAL EXITS	405	503	**591**	**670**	**660**	**636**
	TOTAL ENTRANTS LESS EXITS	1 086	988	***873***	***-112***	***-387***	***175***
Education and training	New student intake	1 491	1 491	827	906	897	825
	Continuing students	0	0	0	0	0	0
	Total enrolment at start of year	1 491	1 491	827	906	897	825
	% change in new intake	n/a	n/a	-44.5%	9.6%	-1.0%	1.8%
	Graduates	1 491	1 491	827	906	897	825
	Pre-service training loss	149	149	83	91	90	83
	Continuing students	0	0	0	0	0	0

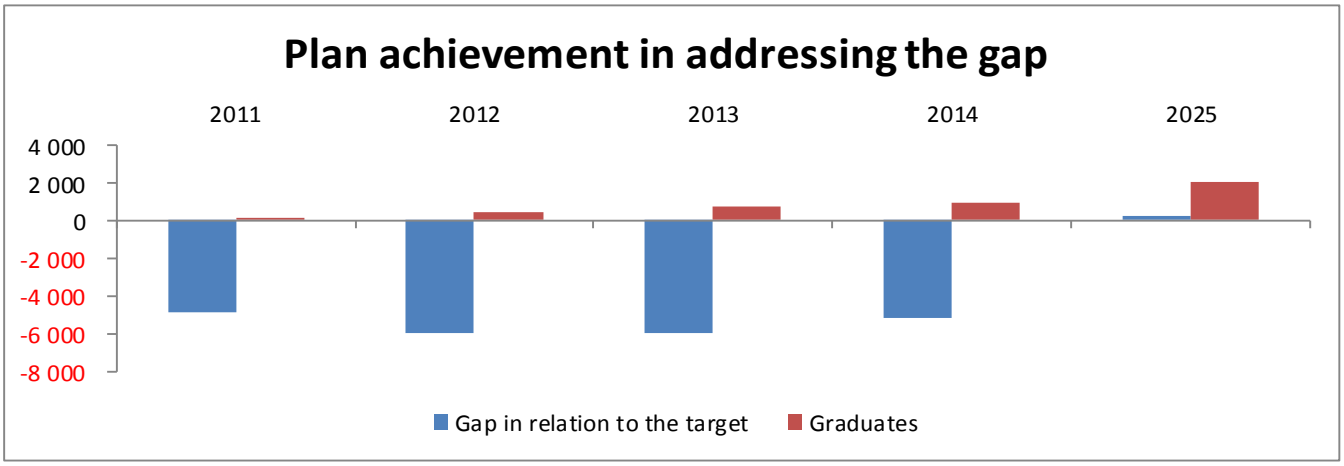


EMS practitioners

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	3	
Gap in 2011 based on assessment	-4 914	
Current staff to population ratio (per 1,000)	2.55	
Target staff to population ratio (per 1,000)	3.32	
Available professionals for national need	11 494	
Total entrants	110	
Total exits	1 035	
Total entrants less exists	-925	
Enrolled students	441	
Graduates	110	Years to achieve target = 5

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	12 509	11 494	10 570	10 712	11 707	19 363
	Professionals: end of year	11 494	10 570	10 712	11 707	13 357	19 671
	annual growth: start of year	n/a	n/a	***-8.0%***	***1.3%***	***9.3%***	***1.5%***
	Gap in relation to the target	-3 753	-4 914	**-5 986**	**-5 993**	**-5 148**	**254**
	Positions at start of year: target	16 262	16 408	16 556	16 705	16 855	19 110
	Pop per professional: actual (per 10,000)	2.55	2.55	2.23	2.24	2.43	3.64
	Pop per professional: target (per 10,000)	3.32	3.32	3.32	3.32	3.32	3.32
Entrants and exists	Intake from training	110	110	110	462	705	2 050
	Intake - other (require plan)	0	0	10 701			
	TOTAL ENTRANTS	110	110	**1 093**	**1 959**	**2 703**	**2 050**
	Exit - other (require plan)	500	460	423	428	468	775
	Exit - Retire at 65 (expected)	375	345	317	321	351	581
	Exit - death/invalidity/etc (expected)	250	230	211	214	234	387
	TOTAL EXITS	1 125	1 035	**951**	**963**	**1 053**	**1 743**
	TOTAL ENTRANTS LESS EXITS	-1 015	-925	***142***	***995***	***1 650***	***308***
Education and training	New student intake	110	110	1 530	1 587	1 689	2 484
	Continuing students	331	331	320	1 234	1 957	5 907
	Total enrolment at start of year	441	441	1 849	2 821	3 647	8 391
	% change in new intake	n/a	n/a	1287.5%	3.8%	6.4%	1.8%
	Graduates	110	110	462	705	912	2 098
	Pre-service training loss	11	11	153	159	169	248
	Continuing students	320	320	1 234	1 957	2 566	6 045

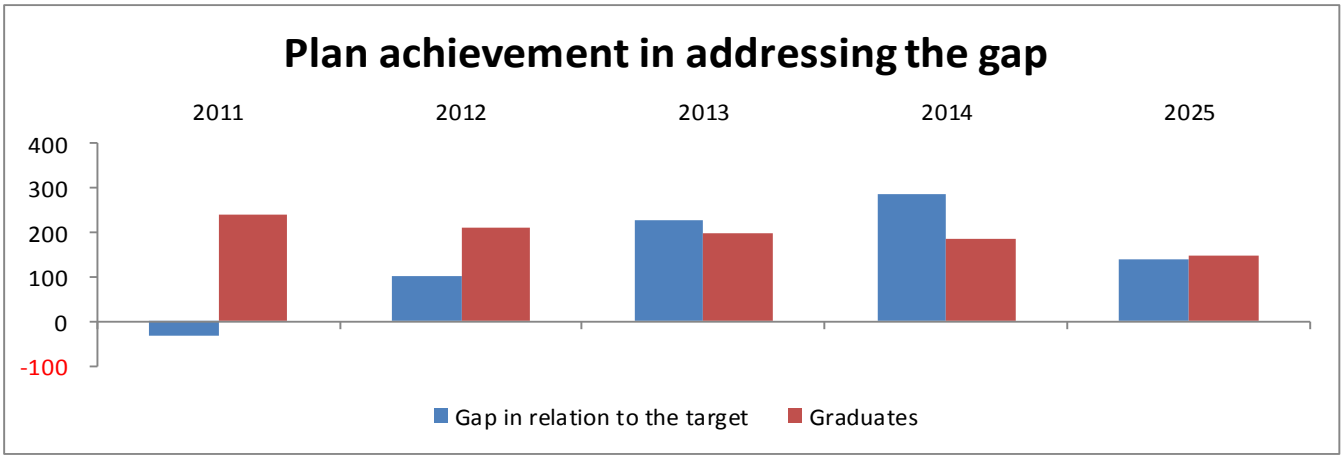


Nutritionists/Dieticians

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	2	
Gap in 2011 based on assessment	-33	
Current staff to population ratio (per 1,000)	0.18	
Target staff to population ratio (per 1,000)	0.22	
Available professionals for national need	1 062	
Total entrants	239	
Total exits	95	
Total entrants less exists	144	
Enrolled students	956	
Graduates	239	Years to achieve target = 5

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	904	1 062	1 205	1 343	1 408	1 414
	Professionals: end of year	1 062	1 205	1 343	1 408	1 403	1 432
	annual growth: start of year	n/a	n/a	***13.5%***	***11.4%***	***4.9%***	***1.3%***
	Gap in relation to the target	-181	-33	**101**	**228**	**284**	**139**
	Positions at start of year: target	1 085	1 094	1 104	1 114	1 124	1 275
	Pop per professional: actual (per 10,000)	0.18	0.18	0.25	0.28	0.29	0.27
	Pop per professional: target (per 10,000)	0.22	0.22	0.22	0.22	0.22	0.22
Entrants and exists	Intake from training	239	239	239	212	197	145
	Intake - other (require plan)	0	0	-505			
	TOTAL ENTRANTS	239	239	**246**	**187**	**121**	**145**
	Exit - other (require plan)	36	42	48	54	56	57
	Exit - Retire at 65 (expected)	27	32	36	40	42	42
	Exit - death/invalidity/etc (expected)	18	21	24	27	28	28
	TOTAL EXITS	81	95	**108**	**121**	**126**	**127**
	TOTAL ENTRANTS LESS EXITS	158	144	***137***	***66***	***-6***	***19***
Education and training	New student intake	239	239	154	167	174	166
	Continuing students	717	717	693	620	574	419
	Total enrolment at start of year	956	956	847	787	747	585
	% change in new intake	n/a	n/a	-35.5%	8.5%	4.0%	1.8%
	Graduates	239	239	212	197	187	146
	Pre-service training loss	24	24	15	17	17	17
	Continuing students	693	693	620	574	543	422

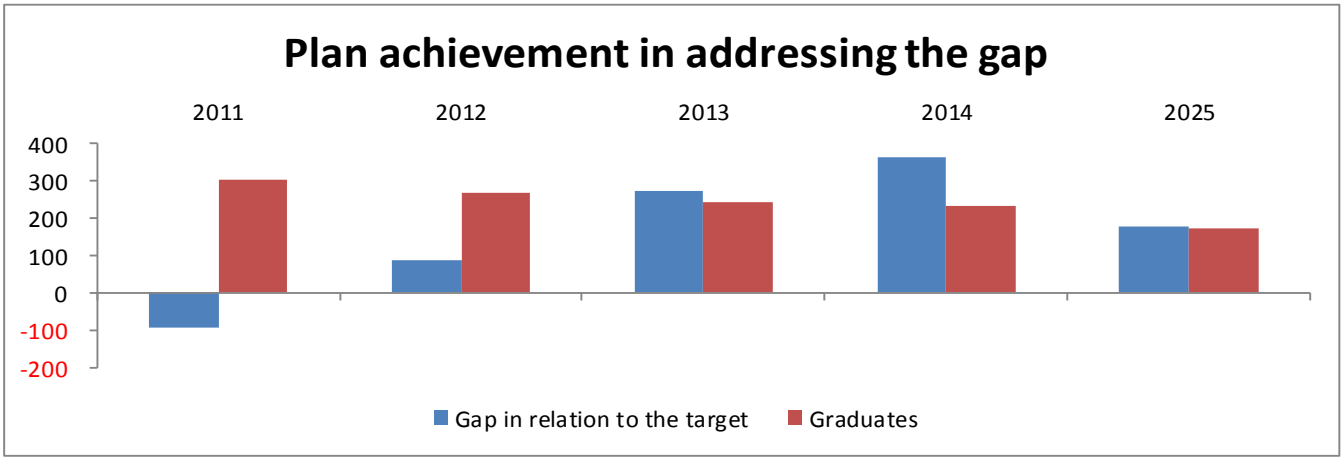


Occupational Therapists

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	3	
Gap in 2011 based on assessment	-95	
Current staff to population ratio (per 1,000)	0.20	
Target staff to population ratio (per 1,000)	0.26	
Available professionals for national need	1 206	
Total entrants	304	
Total exits	108	
Total entrants less exists	196	
Enrolled students	1 216	
Graduates	304	Years to achieve target = 5

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	991	1 206	1 402	1 598	1 698	1 694
	Professionals: end of year	1 206	1 402	1 598	1 698	1 697	1 714
	annual growth: start of year	n/a	n/a	***16.2%***	***14.0%***	***6.2%***	***1.4%***
	Gap in relation to the target	-297	-95	**89**	**274**	**362**	**179**
	Positions at start of year: target	1 289	1 301	1 312	1 324	1 336	1 515
	Pop per professional: actual (per 10,000)	0.20	0.20	0.30	0.33	0.35	0.32
	Pop per professional: target (per 10,000)	0.26	0.26	0.26	0.26	0.26	0.26
Entrants and exists	Intake from training	304	304	304	265	244	173
	Intake - other (require plan)	0	0	-625			
	TOTAL ENTRANTS	304	304	**323**	**243**	**153**	**173**
	Exit - other (require plan)	40	48	56	64	68	68
	Exit - Retire at 65 (expected)	30	36	42	48	51	51
	Exit - death/invalidity/etc (expected)	20	24	28	32	34	34
	TOTAL EXITS	90	108	**126**	**144**	**153**	**153**
	TOTAL ENTRANTS LESS EXITS	214	196	***197***	***99***	***-0***	***20***
Education and training	New student intake	304	304	180	199	209	197
	Continuing students	912	912	882	778	713	500
	Total enrolment at start of year	1 216	1 216	1 061	977	922	697
	% change in new intake	n/a	n/a	-40.8%	10.6%	5.1%	1.8%
	Graduates	304	304	265	244	230	174
	Pre-service training loss	30	30	18	20	21	20
	Continuing students	882	882	778	713	670	503

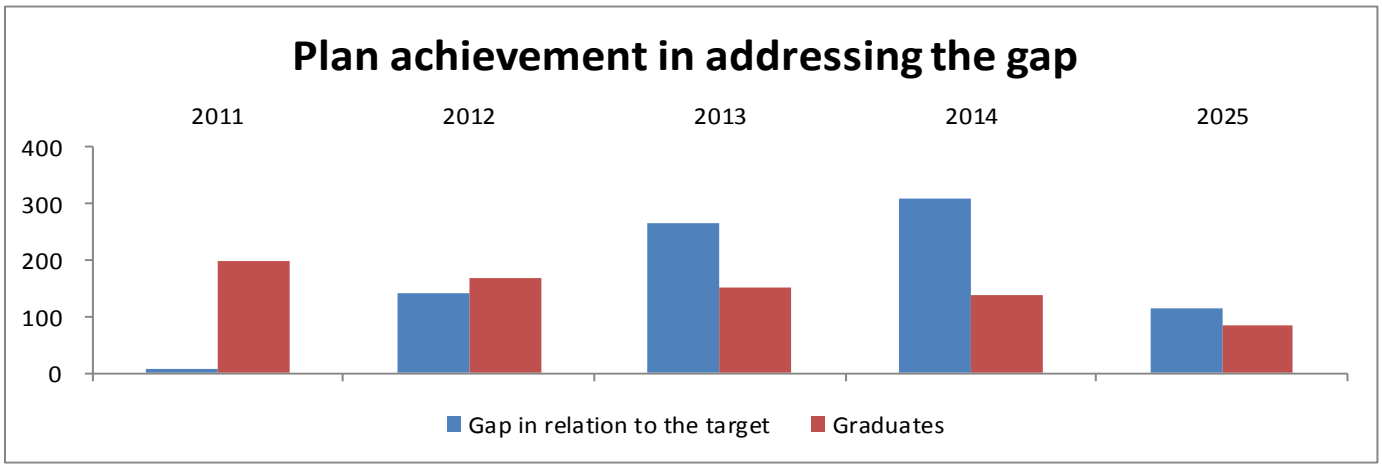


Optometrists

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	3	
Gap in 2011 based on assessment	8	
Current staff to population ratio (per 1,000)	0.10	
Target staff to population ratio (per 1,000)	0.13	
Available professionals for national need	629	
Total entrants	197	
Total exits	57	
Total entrants less exists	140	
Enrolled students	789	
Graduates	197	Years to achieve target = 5

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	474	629	769	896	947	837
	Professionals: end of year	629	769	896	947	924	846
	annual growth: start of year	n/a	n/a	***22.3%***	***16.5%***	***5.7%***	***1.2%***
	Gap in relation to the target	-142	8	**142**	**263**	**308**	**114**
	Positions at start of year: target	616	622	627	633	638	724
	Pop per professional: actual (per 10,000)	0.10	0.10	0.16	0.19	0.20	0.16
	Pop per professional: target (per 10,000)	0.13	0.13	0.13	0.13	0.13	0.13
Entrants and exists	Intake from training	197	197	197	167	150	85
	Intake - other (require plan)	0	0	-559			
	TOTAL ENTRANTS	197	197	**196**	**132**	**62**	**85**
	Exit - other (require plan)	19	25	31	36	38	33
	Exit - Retire at 65 (expected)	14	19	23	27	28	25
	Exit - death/invalidity/etc (expected)	9	13	15	18	19	17
	TOTAL EXITS	42	57	**69**	**81**	**85**	**75**
	TOTAL ENTRANTS LESS EXITS	155	140	***127***	***51***	***-23***	***9***
Education and training	New student intake	197	197	96	108	113	94
	Continuing students	592	592	572	492	439	244
	Total enrolment at start of year	789	789	668	600	552	339
	% change in new intake	n/a	n/a	-51.2%	12.1%	4.8%	1.8%
	Graduates	197	197	167	150	138	85
	Pre-service training loss	20	20	10	11	11	9
	Continuing students	572	572	492	439	403	244

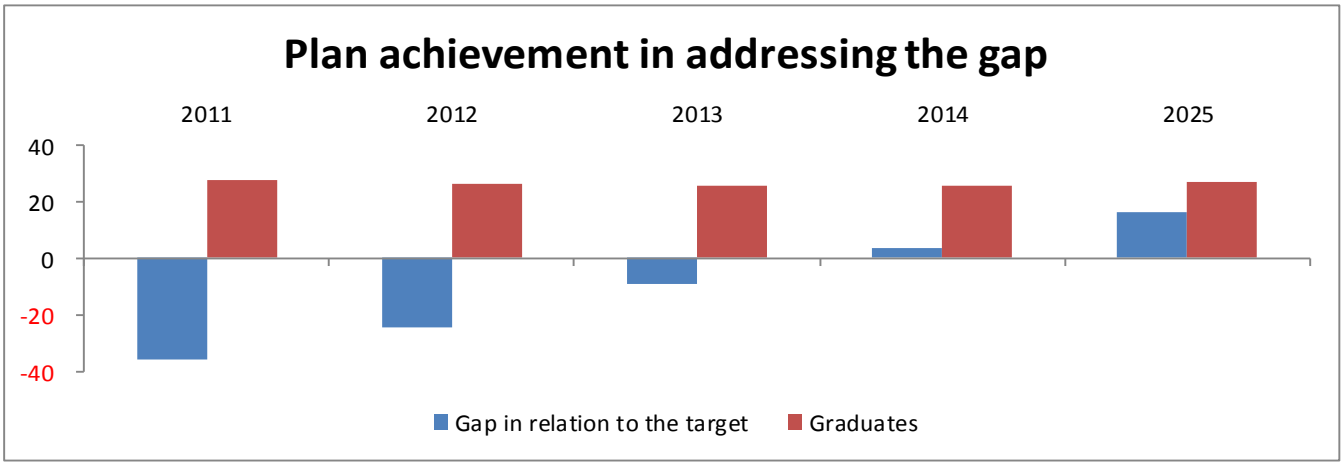


Medical Orthotist/Prosthetist

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	3	
Gap in 2011 based on assessment	-36	
Current staff to population ratio (per 1,000)	0.03	
Target staff to population ratio (per 1,000)	0.04	
Available professionals for national need	171	
Total entrants	28	
Total exits	15	
Total entrants less exists	13	
Enrolled students	111	
Graduates	28	Years to achieve target = 5

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	158	171	184	201	216	257
	Professionals: end of year	171	184	201	216	226	261
	annual growth: start of year	n/a	n/a	***7.5%***	***9.5%***	***7.1%***	***1.3%***
	Gap in relation to the target	-47	-36	**-25**	**-9**	**3**	**16**
	Positions at start of year: target	205	207	209	210	212	241
	Pop per professional: actual (per 10,000)	0.03	0.03	0.04	0.04	0.04	0.05
	Pop per professional: target (per 10,000)	0.04	0.04	0.04	0.04	0.04	0.04
Entrants and exists	Intake from training	28	28	28	26	26	27
	Intake - other (require plan)	0	0	3			
	TOTAL ENTRANTS	28	28	**35**	**32**	**29**	**27**
	Exit - other (require plan)	6	7	7	8	9	10
	Exit - Retire at 65 (expected)	5	5	6	6	6	8
	Exit - death/invalidity/etc (expected)	3	3	4	4	4	5
	TOTAL EXITS	14	15	**17**	**18**	**19**	**23**
	TOTAL ENTRANTS LESS EXITS	13	13	***18***	***14***	***10***	***3***
Education and training	New student intake	28	28	25	26	28	31
	Continuing students	83	83	80	76	74	77
	Total enrolment at start of year	111	111	105	103	102	109
	% change in new intake	n/a	n/a	-11.5%	7.9%	5.5%	1.8%
	Graduates	28	28	26	26	26	27
	Pre-service training loss	3	3	2	3	3	3
	Continuing students	80	80	76	74	74	78

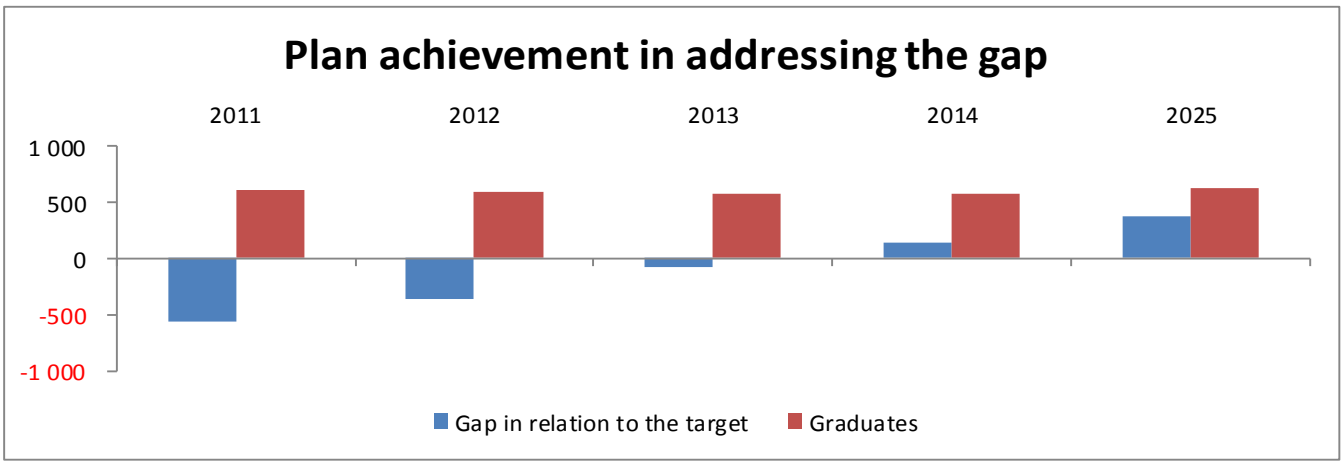


Pharmacists

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	2	
Gap in 2011 based on assessment	-557	
Current staff to population ratio (per 1,000)	0.79	
Target staff to population ratio (per 1,000)	0.95	
Available professionals for national need	4 154	
Total entrants	614	
Total exits	374	
Total entrants less exists	240	
Enrolled students	2 455	
Graduates	614	Years to achieve target = 5

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	3 891	4 154	4 394	4 723	4 979	5 865
	Professionals: end of year	4 154	4 394	4 723	4 979	5 137	5 948
	annual growth: start of year	n/a	n/a	***5.8%***	***7.5%***	***5.4%***	***1.4%***
	Gap in relation to the target	-778	-557	**-360**	**-73**	**139**	**378**
	Positions at start of year: target	4 670	4 712	4 754	4 797	4 840	5 487
	Pop per professional: actual (per 10,000)	0.79	0.79	0.93	0.99	1.03	1.10
	Pop per professional: target (per 10,000)	0.95	0.95	0.95	0.95	0.95	0.95
Entrants and exists	Intake from training	614	614	614	590	582	610
	Intake - other (require plan)	0	0	-97			
	TOTAL ENTRANTS	614	614	**725**	**680**	**607**	**610**
	Exit - other (require plan)	156	166	176	189	199	235
	Exit - Retire at 65 (expected)	117	125	132	142	149	176
	Exit - death/invalidity/etc (expected)	78	83	88	94	100	117
	TOTAL EXITS	351	374	**396**	**425**	**448**	**528**
	TOTAL ENTRANTS LESS EXITS	263	240	***329***	***255***	***158***	***82***
Education and training	New student intake	614	614	581	616	643	713
	Continuing students	1 841	1 841	1 780	1 712	1 685	1 760
	Total enrolment at start of year	2 455	2 455	2 360	2 329	2 328	2 473
	% change in new intake	n/a	n/a	-5.4%	6.2%	4.3%	1.8%
	Graduates	614	614	590	582	582	618
	Pre-service training loss	61	61	58	62	64	71
	Continuing students	1 780	1 780	1 712	1 685	1 681	1 784

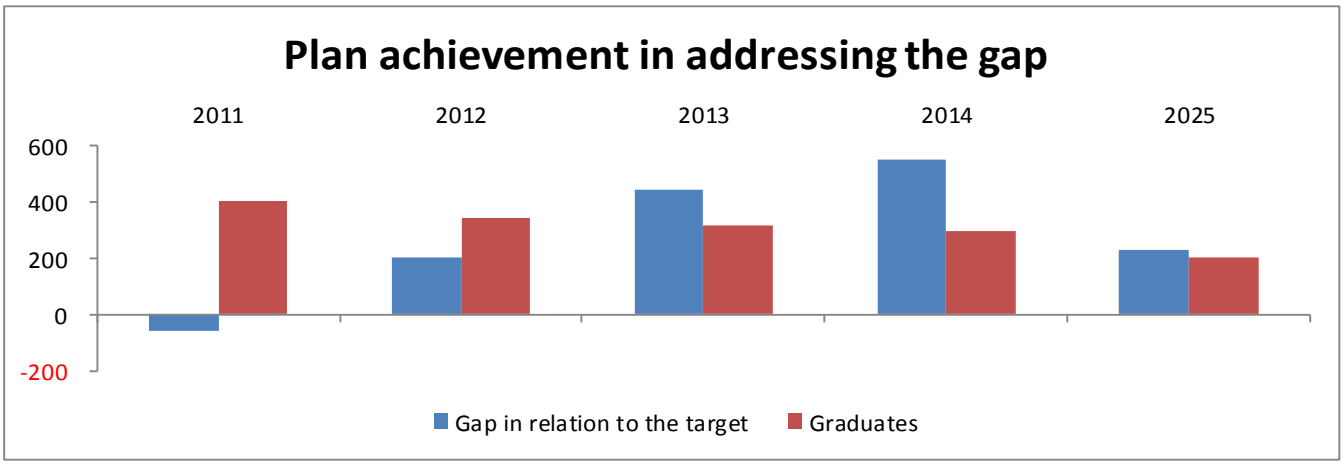


Physiotherapists

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	3	
Gap in 2011 based on assessment	-58	
Current staff to population ratio (per 1,000)	0.23	
Target staff to population ratio (per 1,000)	0.30	
Available professionals for national need	1 449	
Total entrants	403	
Total exits	130	
Total entrants less exists	273	
Enrolled students	1 611	
Graduates	403	Years to achieve target = 5

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	1 149	1 449	1 722	1 981	2 099	1 987
	Professionals: end of year	1 449	1 722	1 981	2 099	2 077	2 010
	annual growth: start of year	n/a	n/a	***18.8%***	***15.1%***	***6.0%***	***1.3%***
	Gap in relation to the target	-345	-58	**201**	**447**	**551**	**231**
	Positions at start of year: target	1 494	1 507	1 521	1 534	1 548	1 755
	Pop per professional: actual (per 10,000)	0.23	0.23	0.36	0.42	0.44	0.37
	Pop per professional: target (per 10,000)	0.30	0.30	0.30	0.30	0.30	0.30
Entrants and exists	Intake from training	403	403	403	347	315	202
	Intake - other (require plan)	0	0	-978			
	TOTAL ENTRANTS	403	403	**414**	**296**	**166**	**202**
	Exit - other (require plan)	46	58	69	79	84	79
	Exit - Retire at 65 (expected)	34	43	52	59	63	60
	Exit - death/invalidity/etc (expected)	23	29	34	40	42	40
	TOTAL EXITS	103	130	**155**	**178**	**189**	**179**
	TOTAL ENTRANTS LESS EXITS	300	273	***260***	***118***	***-23***	***23***
Education and training	New student intake	403	403	219	243	255	228
	Continuing students	1 208	1 208	1 168	1 018	922	585
	Total enrolment at start of year	1 611	1 611	1 387	1 261	1 177	813
	% change in new intake	n/a	n/a	-45.7%	11.2%	4.9%	1.8%
	Graduates	403	403	347	315	294	203
	Pre-service training loss	40	40	22	24	26	23
	Continuing students	1 168	1 168	1 018	922	857	587

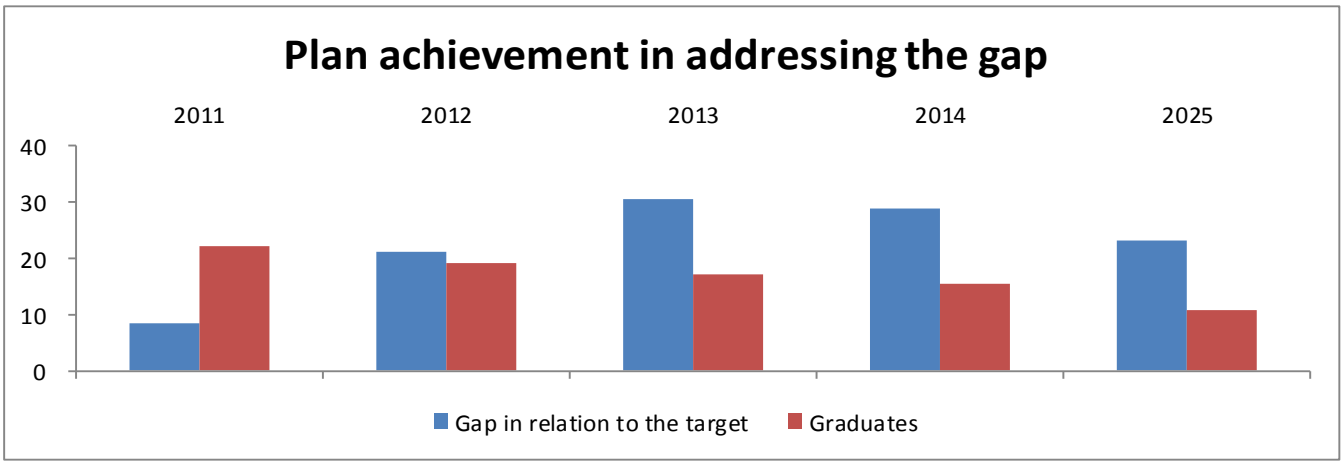


Podiatrists

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	1	
Gap in 2011 based on assessment	8	
Current staff to population ratio (per 1,000)	0.01	
Target staff to population ratio (per 1,000)	0.02	
Available professionals for national need	87	
Total entrants	22	
Total exits	8	
Total entrants less exists	14	
Enrolled students	88	
Graduates	22	Years to achieve target = 3

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	71	87	101	111	110	115
	Professionals: end of year	87	101	111	110	87	116
	annual growth: start of year	n/a	n/a	***15.5%***	***10.1%***	***-0.9%***	***0.8%***
	Gap in relation to the target	-7	8	**21**	**31**	**29**	**23**
	Positions at start of year: target	78	79	80	80	81	92
	Pop per professional: actual (per 10,000)	0.01	0.01	0.02	0.02	0.02	0.02
	Pop per professional: target (per 10,000)	0.02	0.02	0.02	0.02	0.02	0.02
Entrants and exists	Intake from training	22	22	22	19	17	11
	Intake - other (require plan)	0	0	-44			
	TOTAL ENTRANTS	22	22	**19**	**8**	**-14**	**11**
	Exit - other (require plan)	3	3	4	4	4	5
	Exit - Retire at 65 (expected)	2	3	3	3	3	3
	Exit - death/invalidity/etc (expected)	1	2	2	2	2	2
	TOTAL EXITS	6	8	**9**	**9**	**9**	**10**
	TOTAL ENTRANTS LESS EXITS	16	14	***10***	***-1***	***-23***	***1***
Education and training	New student intake	22	22	12	12	12	12
	Continuing students	66	66	64	56	50	30
	Total enrolment at start of year	88	88	76	68	62	42
	% change in new intake	n/a	n/a	-44.6%	2.1%	-0.2%	1.8%
	Graduates	22	22	19	17	16	11
	Pre-service training loss	2	2	1	1	1	1
	Continuing students	64	64	56	50	45	31

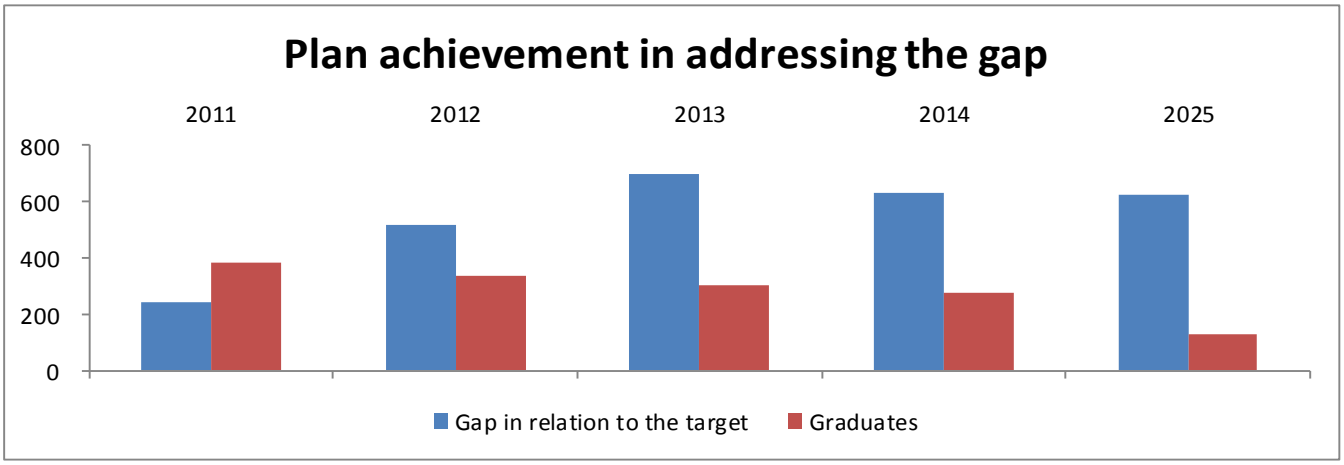


Psychologists

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	1	
Gap in 2011 based on assessment	239	
Current staff to population ratio (per 1,000)	0.14	
Target staff to population ratio (per 1,000)	0.16	
Available professionals for national need	1 027	
Total entrants	380	
Total exits	93	
Total entrants less exists	287	
Enrolled students	2 281	
Graduates	380	Years to achieve target = 3

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	711	1 027	1 315	1 498	1 439	1 544
	Professionals: end of year	1 027	1 315	1 498	1 439	916	1 534
	annual growth: start of year	n/a	n/a	***27.9%***	***13.9%***	***-3.9%***	***-0.3%***
	Gap in relation to the target	-71	239	**519**	**694**	**628**	**625**
	Positions at start of year: target	782	789	796	803	810	919
	Pop per professional: actual (per 10,000)	0.14	0.14	0.28	0.31	0.30	0.29
	Pop per professional: target (per 10,000)	0.16	0.16	0.16	0.16	0.16	0.16
Entrants and exists	Intake from training	380	380	380	335	302	129
	Intake - other (require plan)	0	0	-1 033			
	TOTAL ENTRANTS	380	380	**301**	**76**	**-393**	**129**
	Exit - other (require plan)	28	41	53	60	58	62
	Exit - Retire at 65 (expected)	21	31	39	45	43	46
	Exit - death/invalidity/etc (expected)	14	21	26	30	29	31
	TOTAL EXITS	63	93	**118**	**135**	**130**	**139**
	TOTAL ENTRANTS LESS EXITS	317	287	***183***	***-59***	***-522***	***-10***
Education and training	New student intake	380	380	148	150	146	119
	Continuing students	1 901	1 901	1 863	1 661	1 494	634
	Total enrolment at start of year	2 281	2 281	2 011	1 811	1 640	753
	% change in new intake	n/a	n/a	-61.0%	0.8%	-2.3%	1.8%
	Graduates	380	380	335	302	273	126
	Pre-service training loss	38	38	15	15	15	12
	Continuing students	1 863	1 863	1 661	1 494	1 352	616

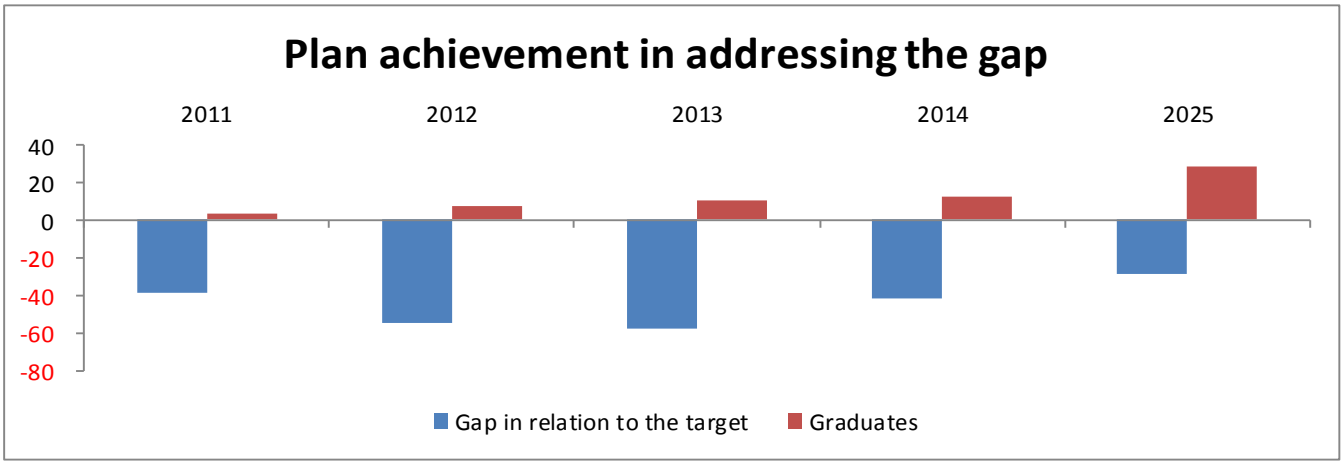


Clinical Psychologists

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	1	
Gap in 2011 based on assessment	-39	
Current staff to population ratio (per 1,000)	0.04	
Target staff to population ratio (per 1,000)	0.05	
Available professionals for national need	197	
Total entrants	3	
Total exits	18	
Total entrants less exists	-15	
Enrolled students	20	
Graduates	3	Years to achieve target = 3

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	213	197	183	183	201	246
	Professionals: end of year	197	183	183	201	251	252
	annual growth: start of year	n/a	n/a	*-7.4%*	*-0.1%*	*10.1%*	*2.1%*
	Gap in relation to the target	-21	-39	-55	-58	-41	-29
	Positions at start of year: target	234	236	238	240	242	275
	Pop per professional: actual (per 10,000)	0.04	0.04	0.04	0.04	0.04	0.05
	Pop per professional: target (per 10,000)	0.05	0.05	0.05	0.05	0.05	0.05
Entrants and exists	Intake from training	3	3	3	7	10	28
	Intake - other (require plan)	0	0	98			
	TOTAL ENTRANTS	3	3	**16**	**35**	**68**	**28**
	Exit - other (require plan)	9	8	7	7	8	10
	Exit - Retire at 65 (expected)	6	6	5	5	6	7
	Exit - death/invalidity/etc (expected)	4	4	4	4	4	5
	TOTAL EXITS	19	18	**16**	**16**	**18**	**22**
	TOTAL ENTRANTS LESS EXITS	-15	-15	***-0***	***18***	***50***	***6***
Education and training	New student intake	3	3	26	27	29	36
	Continuing students	17	17	16	33	47	134
	Total enrolment at start of year	20	20	43	60	76	170
	% change in new intake	n/a	n/a	685.1%	5.1%	4.9%	1.8%
	Graduates	3	3	7	10	13	28
	Pre-service training loss	0	0	3	3	3	4
	Continuing students	16	16	33	47	61	138

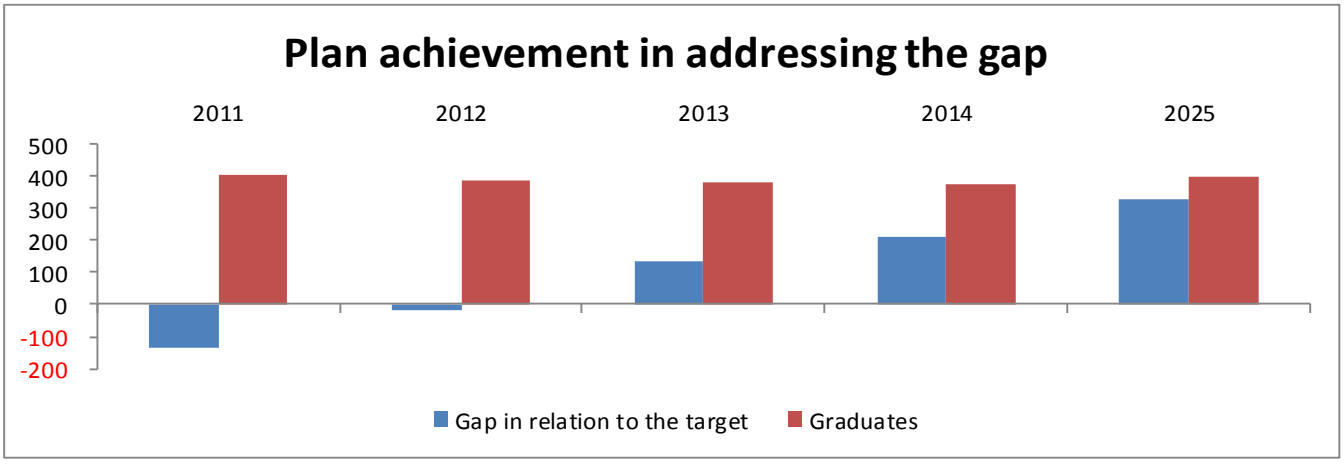


Radiographers

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	1	
Gap in 2011 based on assessment	-137	
Current staff to population ratio (per 1,000)	0.55	
Target staff to population ratio (per 1,000)	0.61	
Available professionals for national need	2 863	
Total entrants	403	
Total exits	258	
Total entrants less exists	145	
Enrolled students	1 209	
Graduates	403	Years to achieve target = 3

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	2 703	2 863	3 009	3 187	3 295	3 820
	Professionals: end of year	2 863	3 009	3 187	3 295	3 245	3 867
	annual growth: start of year	n/a	n/a	***5.1%***	***5.9%***	***3.4%***	***1.2%***
	Gap in relation to the target	-270	-137	**-19**	**132**	**213**	**326**
	Positions at start of year: target	2 974	3 000	3 027	3 055	3 082	3 494
	Pop per professional: actual (per 10,000)	0.55	0.55	0.64	0.67	0.68	0.72
	Pop per professional: target (per 10,000)	0.61	0.61	0.61	0.61	0.61	0.61
Entrants and exists	Intake from training	403	403	403	386	379	391
	Intake - other (require plan)	0	0	-77			
	TOTAL ENTRANTS	403	403	**449**	**395**	**247**	**391**
	Exit - other (require plan)	108	115	120	127	132	153
	Exit - Retire at 65 (expected)	81	86	90	96	99	115
	Exit - death/invalidity/etc (expected)	54	57	60	64	66	76
	TOTAL EXITS	243	258	**270**	**287**	**297**	**344**
	TOTAL ENTRANTS LESS EXITS	160	145	***178***	***108***	***-50***	***48***
Education and training	New student intake	403	403	392	406	414	454
	Continuing students	806	806	766	733	718	738
	Total enrolment at start of year	1 209	1 209	1 158	1 138	1 133	1 192
	% change in new intake	n/a	n/a	-2.7%	3.5%	2.2%	1.8%
	Graduates	403	403	386	379	378	397
	Pre-service training loss	40	40	39	41	41	45
	Continuing students	766	766	733	718	714	749

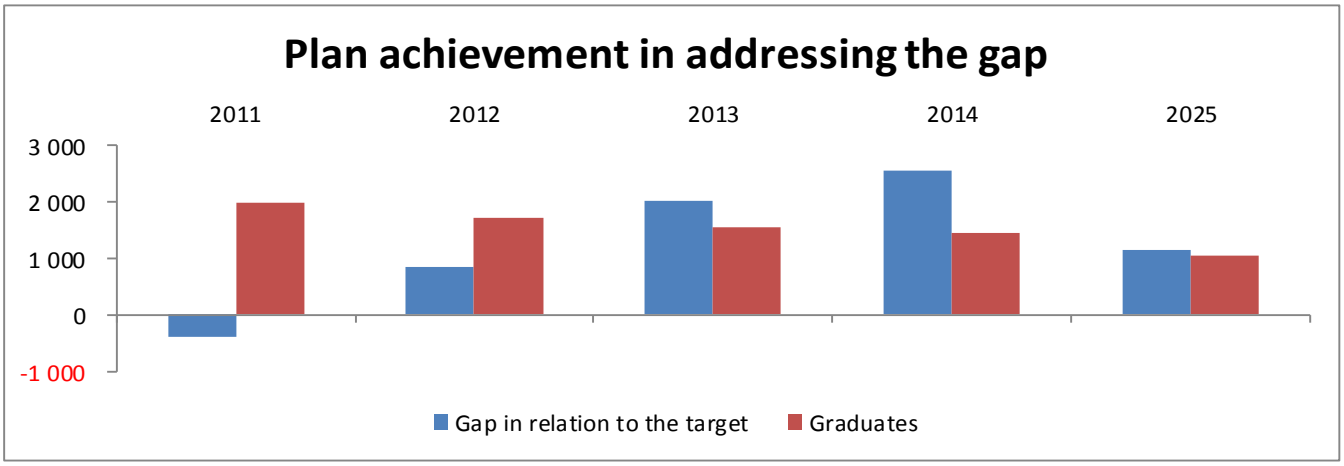


Social Workers

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	3	
Gap in 2011 based on assessment	-407	
Current staff to population ratio (per 1,000)	1.21	
Target staff to population ratio (per 1,000)	1.57	
Available professionals for national need	7 362	
Total entrants	1 972	
Total exits	662	
Total entrants less exists	1 309	
Enrolled students	7 887	
Graduates	1 972	Years to achieve target = 5

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	5 923	7 362	8 671	9 944	10 548	10 193
	Professionals: end of year	7 362	8 671	9 944	10 548	10 479	10 314
	annual growth: start of year	n/a	n/a	***17.8%***	***14.7%***	***6.1%***	***1.3%***
	Gap in relation to the target	-1 777	-407	**832**	**2 035**	**2 567**	**1 145**
	Positions at start of year: target	7 700	7 769	7 839	7 910	7 981	9 048
	Pop per professional: actual (per 10,000)	1.21	1.21	1.83	2.08	2.19	1.92
	Pop per professional: target (per 10,000)	1.57	1.57	1.57	1.57	1.57	1.57
Entrants and exists	Intake from training	1 972	1 972	1 972	1 706	1 558	1 039
	Intake - other (require plan)	0	0	-4 514			
	TOTAL ENTRANTS	1 972	1 972	**2 053**	**1 498**	**880**	**1 039**
	Exit - other (require plan)	237	294	347	398	422	408
	Exit - Retire at 65 (expected)	178	221	260	298	316	306
	Exit - death/invalidity/etc (expected)	118	147	173	199	211	204
	TOTAL EXITS	533	662	**780**	**895**	**949**	**918**
	TOTAL ENTRANTS LESS EXITS	1 439	1 309	***1 273***	***603***	***-69***	***122***
Education and training	New student intake	1 972	1 972	1 106	1 227	1 288	1 176
	Continuing students	5 915	5 915	5 718	5 007	4 553	3 002
	Total enrolment at start of year	7 887	7 887	6 824	6 234	5 840	4 179
	% change in new intake	n/a	n/a	-43.9%	10.9%	5.0%	1.8%
	Graduates	1 972	1 972	1 706	1 558	1 460	1 045
	Pre-service training loss	197	197	111	123	129	118
	Continuing students	5 718	5 718	5 007	4 553	4 252	3 016

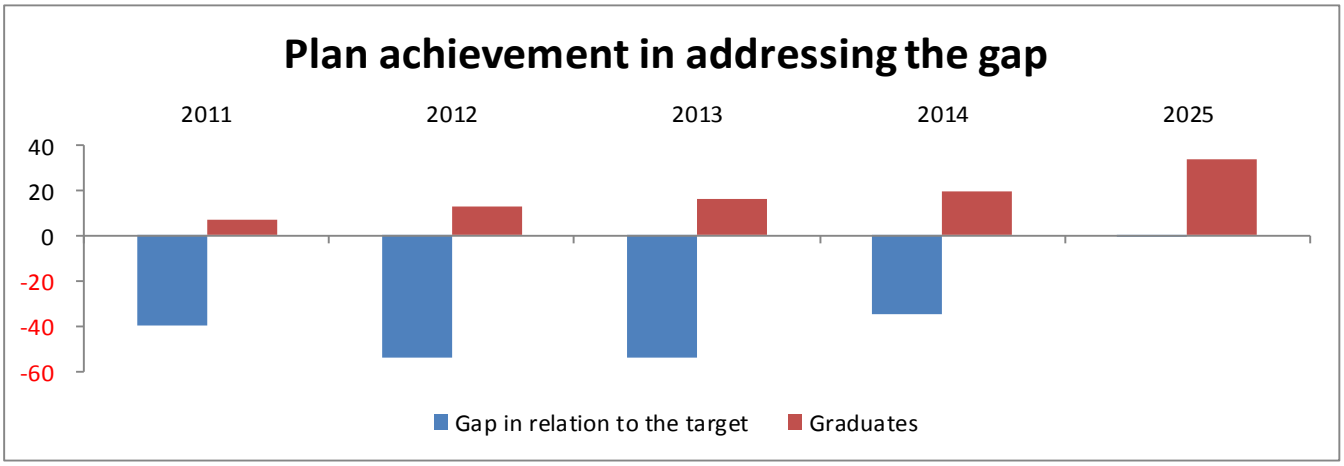


Speech Therapists

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	1	
Gap in 2011 based on assessment	-40	
Current staff to population ratio (per 1,000)	0.05	
Target staff to population ratio (per 1,000)	0.05	
Available professionals for national need	221	
Total entrants	8	
Total exits	20	
Total entrants less exists	-12	
Enrolled students	30	
Graduates	8	Years to achieve target = 3

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	235	221	208	211	232	303
	Professionals: end of year	221	208	211	232	282	309
	annual growth: start of year	n/a	n/a	*-5.6%*	*1.1%*	*10.2%*	*1.8%*
	Gap in relation to the target	-23	-40	-54	-54	-35	-0
	Positions at start of year: target	258	260	263	265	267	303
	Pop per professional: actual (per 10,000)	0.05	0.05	0.04	0.04	0.05	0.06
	Pop per professional: target (per 10,000)	0.05	0.05	0.05	0.05	0.05	0.05
Entrants and exists	Intake from training	8	8	8	13	17	33
	Intake - other (require plan)	0	0	95			
	TOTAL ENTRANTS	8	8	**21**	**40**	**71**	**33**
	Exit - other (require plan)	9	9	8	8	9	12
	Exit - Retire at 65 (expected)	7	7	6	6	7	9
	Exit - death/invalidity/etc (expected)	5	4	4	4	5	6
	TOTAL EXITS	21	20	**18**	**18**	**21**	**27**
	TOTAL ENTRANTS LESS EXITS	-14	-12	***2***	***22***	***50***	***6***
Education and training	New student intake	8	8	29	31	32	39
	Continuing students	23	23	22	35	47	95
	Total enrolment at start of year	30	30	51	66	79	134
	% change in new intake	n/a	n/a	292.5%	5.0%	5.0%	1.8%
	Graduates	8	8	13	17	20	34
	Pre-service training loss	1	1	3	3	3	4
	Continuing students	22	22	35	47	56	97



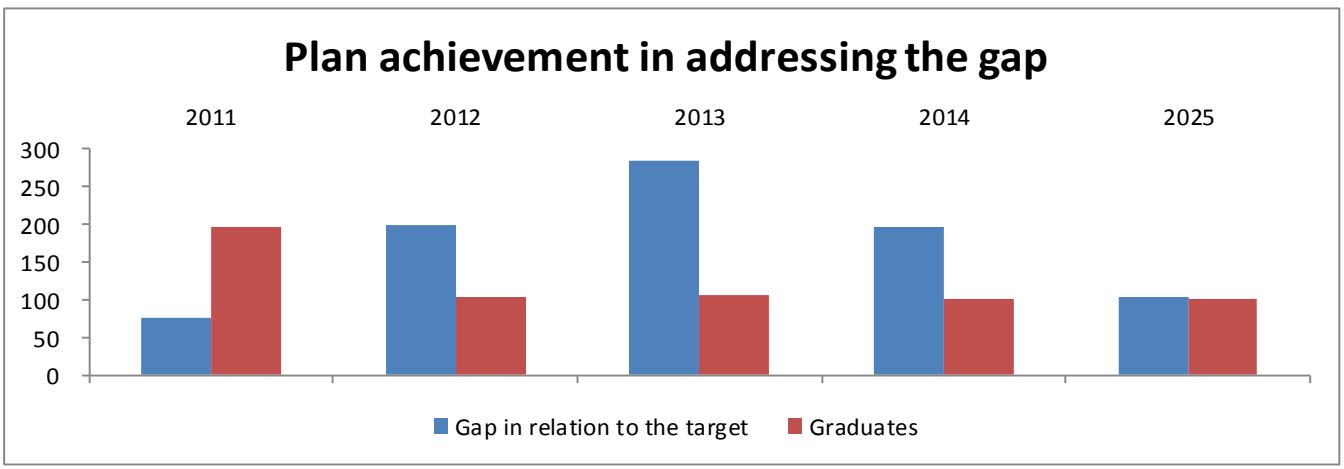
DENTAL PROFESSIONALS

Dental assistants

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	1	
Gap in 2011 based on assessment	76	
Current staff to population ratio (per 1,000)	0.12	
Target staff to population ratio (per 1,000)	0.13	
Available professionals for national need	734	
Total entrants	195	
Total exits	66	
Total entrants less exists	129	
Enrolled students	195	
Graduates	195	Years to achieve target = 3

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	592	734	862	954	872	870
	Professionals: end of year	734	862	954	872	615	890
	annual growth: start of year	n/a	n/a	***17.5%***	***10.7%***	***-8.6%***	***2.2%***
	Gap in relation to the target	-59	76	**199**	**285**	**197**	**104**
	Positions at start of year: target	652	657	663	669	675	766
	Pop per professional: actual (per 10,000)	0.12	0.12	0.18	0.20	0.18	0.16
	Pop per professional: target (per 10,000)	0.13	0.13	0.13	0.13	0.13	0.13
Entrants and exists	Intake from training	195	195	195	103	106	98
	Intake - other (require plan)	0	0	-410			
	TOTAL ENTRANTS	195	195	**170**	**4**	**-180**	**98**
	Exit - other (require plan)	24	29	34	38	35	35
	Exit - Retire at 65 (expected)	18	22	26	29	26	26
	Exit - death/invalidity/etc (expected)	12	15	17	19	17	17
	TOTAL EXITS	54	66	**77**	**86**	**78**	**78**
	TOTAL ENTRANTS LESS EXITS	141	129	***92***	***-82***	***-257***	***20***
Education and training	New student intake	195	195	103	106	101	100
	Continuing students	0	0	0	0	0	0
	Total enrolment at start of year	195	195	103	106	101	100
	% change in new intake	n/a	n/a	-46.9%	2.0%	-4.7%	1.8%
	Graduates	195	195	103	106	101	100
	Pre-service training loss	2	2	1	1	1	1
	Continuing students	0	0	0	0	0	0

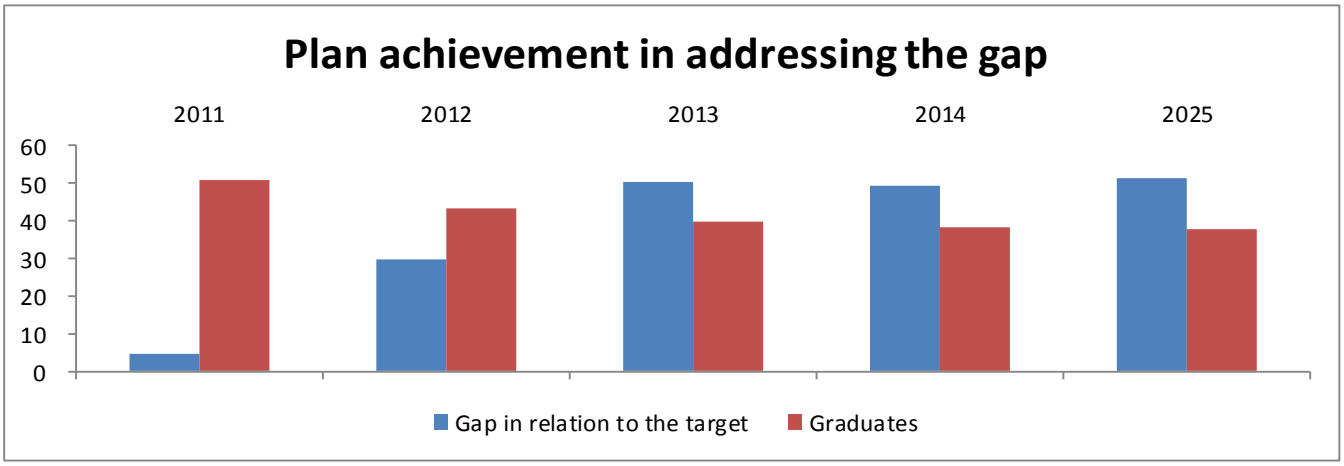


Oral Hygienists

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	1	
Gap in 2011 based on assessment	5	
Current staff to population ratio (per 1,000)	0.05	
Target staff to population ratio (per 1,000)	0.05	
Available professionals for national need	260	
Total entrants	51	
Total exits	23	
Total entrants less exists	28	
Enrolled students	102	
Graduates	51	Years to achieve target = 3

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	230	260	287	310	311	349
	Professionals: end of year	260	287	310	311	273	355
	annual growth: start of year	n/a	n/a	***10.6%***	***8.0%***	***0.3%***	***1.6%***
	Gap in relation to the target	-23	5	**30**	**51**	**49**	**52**
	Positions at start of year: target	253	255	257	260	262	297
	Pop per professional: actual (per 10,000)	0.05	0.05	0.06	0.06	0.06	0.07
	Pop per professional: target (per 10,000)	0.05	0.05	0.05	0.05	0.05	0.05
Entrants and exists	Intake from training	51	51	51	43	40	37
	Intake - other (require plan)	0	0		-67		
	TOTAL ENTRANTS	51	51	**49**	**28**	**-11**	**37**
	Exit - other (require plan)	9	10	11	12	12	14
	Exit - Retire at 65 (expected)	7	8	9	9	9	10
	Exit - death/invalidity/etc (expected)	5	5	6	6	6	7
	TOTAL EXITS	21	23	**26**	**27**	**27**	**31**
	TOTAL ENTRANTS LESS EXITS	30	28	***23***	***1***	***-38***	***6***
Education and training	New student intake	51	51	36	37	37	39
	Continuing students	51	51	50	43	40	37
	Total enrolment at start of year	102	102	87	80	77	75
	% change in new intake	n/a	n/a	-29.3%	2.8%	0.6%	1.8%
	Graduates	51	51	43	40	38	38
	Pre-service training loss	1	1	0	0	0	0
	Continuing students	50	50	43	40	38	37

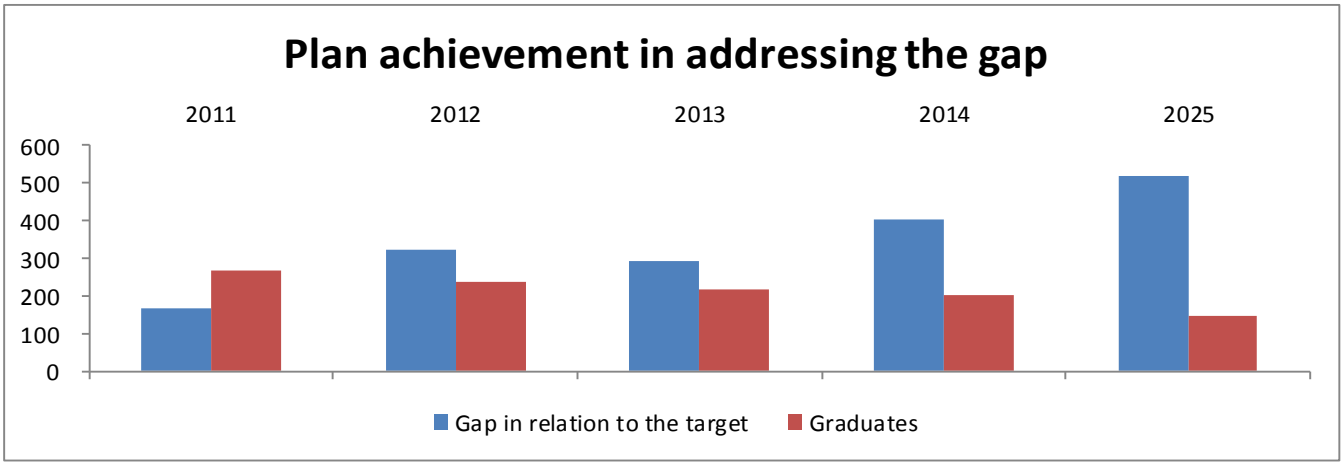


Dental practitioners

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	0	
Gap in 2011 based on assessment	168	
Current staff to population ratio (per 1,000)	0.20	
Target staff to population ratio (per 1,000)	0.20	
Available professionals for national need	1 158	
Total entrants	265	
Total exits	104	
Total entrants less exists	161	
Enrolled students	1 326	
Graduates	265	Years to achieve target = 1

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	981	1 158	1 319	1 297	1 418	1 672
	Professionals: end of year	1 158	1 319	1 297	1 418	1 506	1 669
	annual growth: start of year	n/a	n/a	***13.9%***	***-1.6%***	***9.3%***	***-0.3%***
	Gap in relation to the target	0	168	**320**	**289**	**401**	**519**
	Positions at start of year: target	981	990	999	1 008	1 017	1 153
	Pop per professional: actual (per 10,000)	0.20	0.20	0.28	0.27	0.29	0.31
	Pop per professional: target (per 10,000)	0.20	0.20	0.20	0.20	0.20	0.20
Entrants and exists	Intake from training	265	265	265	238	216	147
	Intake - other (require plan)	0	0	-168			
	TOTAL ENTRANTS	265	265	**97**	**238**	**216**	**147**
	Exit - other (require plan)	39	46	53	52	57	67
	Exit - Retire at 65 (expected)	29	35	40	39	43	50
	Exit - death/invalidity/etc (expected)	20	23	26	26	28	33
	TOTAL EXITS	88	104	**119**	**117**	**128**	**150**
	TOTAL ENTRANTS LESS EXITS	177	161	***-22***	***121***	***88***	***-3***
Education and training	New student intake	265	265	130	131	132	150
	Continuing students	1 061	1 061	1 058	949	863	585
	Total enrolment at start of year	1 326	1 326	1 188	1 080	995	735
	% change in new intake	n/a	n/a	-51.1%	0.9%	0.9%	1.8%
	Graduates	265	265	238	216	199	147
	Pre-service training loss	3	3	1	1	1	1
	Continuing students	1 058	1 058	949	863	795	586

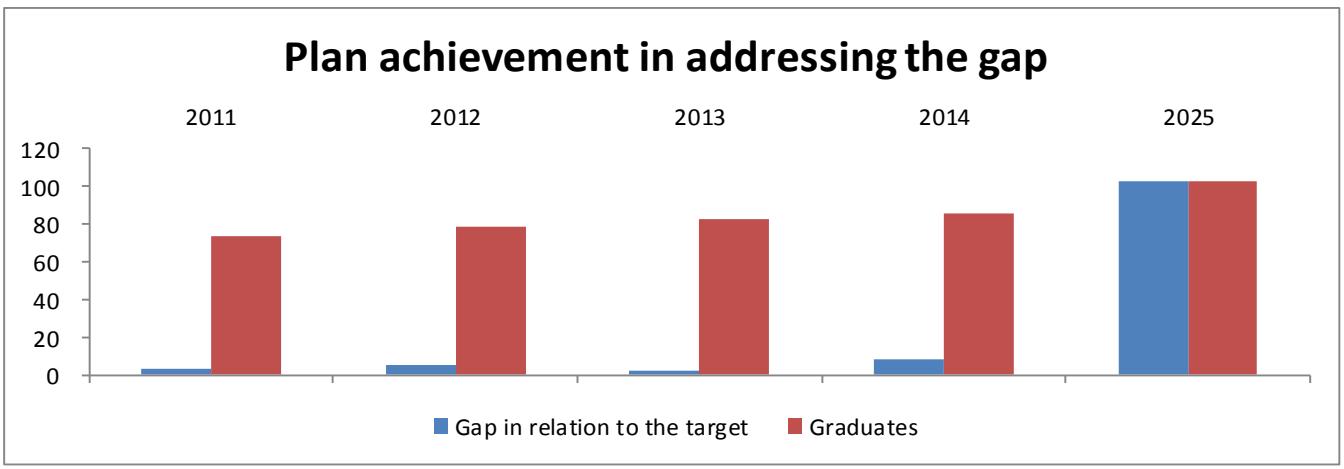


Dental Technicians

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	0	
Gap in 2011 based on assessment	3	
Current staff to population ratio (per 1,000)	0.14	
Target staff to population ratio (per 1,000)	0.14	
Available professionals for national need	721	
Total entrants	73	
Total exits	65	
Total entrants less exists	8	
Enrolled students	293	
Graduates	73	Years to achieve target = 1

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	711	721	729	733	745	938
	Professionals: end of year	721	729	733	745	760	954
	annual growth: start of year	n/a	n/a	*1.2%*	*0.5%*	*1.6%*	*1.8%*
	Gap in relation to the target	0	3	**5**	**3**	**8**	**103**
	Positions at start of year: target	711	717	724	730	737	835
	Pop per professional: actual (per 10,000)	0.14	0.14	0.15	0.15	0.15	0.18
	Pop per professional: target (per 10,000)	0.14	0.14	0.14	0.14	0.14	0.14
Entrants and exists	Intake from training	73	73	73	78	82	101
	Intake - other (require plan)	0	0	-3			
	TOTAL ENTRANTS	73	73	**70**	**78**	**82**	**101**
	Exit - other (require plan)	28	29	29	29	30	38
	Exit - Retire at 65 (expected)	21	22	22	22	22	28
	Exit - death/invalidity/etc (expected)	14	14	15	15	15	19
	TOTAL EXITS	63	65	**66**	**66**	**67**	**85**
	TOTAL ENTRANTS LESS EXITS	10	8	***4***	***12***	***15***	***17***
Education and training	New student intake	73	73	94	95	96	109
	Continuing students	220	220	219	234	246	302
	Total enrolment at start of year	293	293	313	329	341	411
	% change in new intake	n/a	n/a	28.4%	0.9%	0.9%	1.8%
	Graduates	73	73	78	82	85	103
	Pre-service training loss	1	1	1	1	1	1
	Continuing students	219	219	234	246	255	307

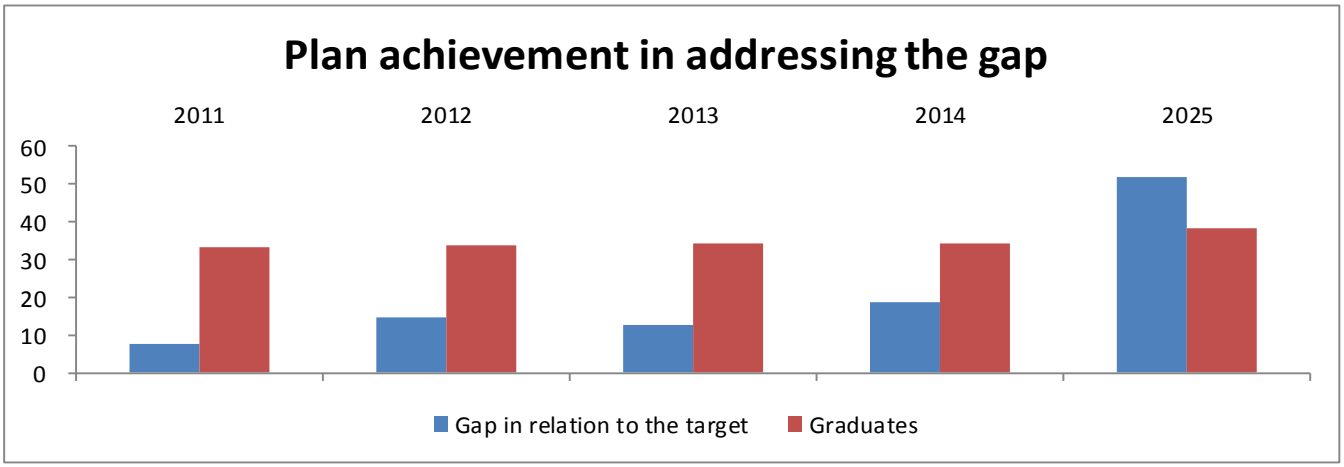


Dental therapists

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	0	
Gap in 2011 based on assessment	8	
Current staff to population ratio (per 1,000)	0.05	
Target staff to population ratio (per 1,000)	0.05	
Available professionals for national need	272	
Total entrants	33	
Total exits	24	
Total entrants less exists	9	
Enrolled students	100	
Graduates	33	Years to achieve target = 1

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	262	272	281	282	290	360
	Professionals: end of year	272	281	282	290	297	365
	annual growth: start of year	n/a	n/a	***3.5%***	***0.2%***	***3.0%***	***1.4%***
	Gap in relation to the target	0	8	**15**	**13**	**19**	**52**
	Positions at start of year: target	262	264	267	269	271	308
	Pop per professional: actual (per 10,000)	0.05	0.05	0.06	0.06	0.06	0.07
	Pop per professional: target (per 10,000)	0.05	0.05	0.05	0.05	0.05	0.05
Entrants and exists	Intake from training	33	33	33	34	34	38
	Intake - other (require plan)	0	0	-8			
	TOTAL ENTRANTS	33	33	**26**	**34**	**34**	**38**
	Exit - other (require plan)	10	11	11	11	12	14
	Exit - Retire at 65 (expected)	8	8	8	8	9	11
	Exit - death/invalidity/etc (expected)	5	5	6	6	6	7
	TOTAL EXITS	23	24	**25**	**25**	**27**	**32**
	TOTAL ENTRANTS LESS EXITS	10	9	***1***	***8***	***7***	***5***
Education and training	New student intake	33	33	35	35	35	40
	Continuing students	67	67	66	67	68	75
	Total enrolment at start of year	100	100	101	102	103	115
	% change in new intake	n/a	n/a	3.9%	0.9%	0.9%	1.8%
	Graduates	33	33	34	34	34	38
	Pre-service training loss	0	0	0	0	0	0
	Continuing students	66	66	67	68	68	76

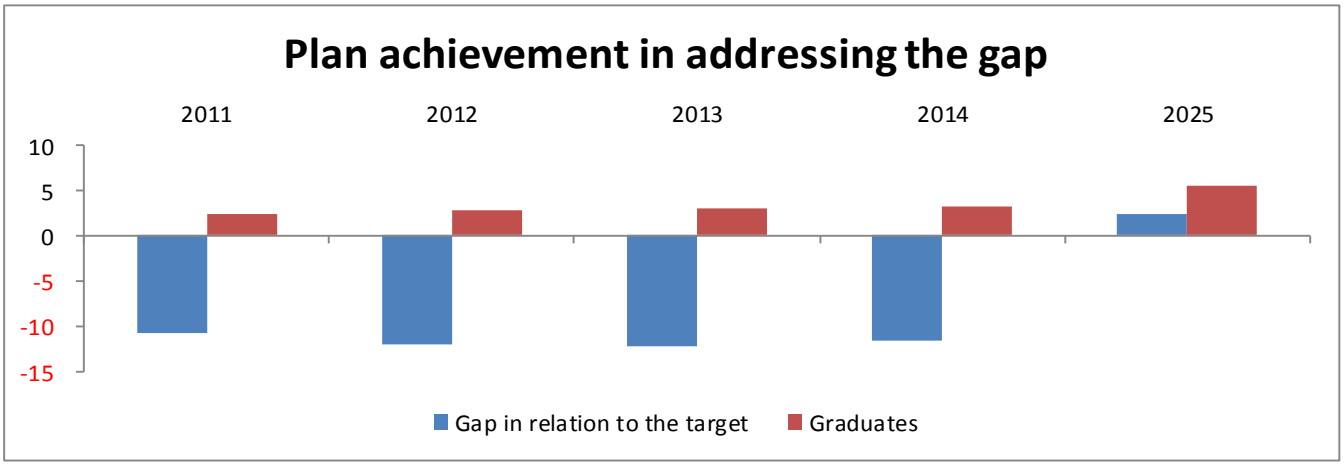


Surgery: Maxillo Facial

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	3	
Gap in 2011 based on assessment	-11	
Current staff to population ratio (per 1,000)	0.01	
Target staff to population ratio (per 1,000)	0.01	
Available professionals for national need	31	
Total entrants	2	
Total exits	3	
Total entrants less exists	-1	
Enrolled students	12	
Graduates	2	Years to achieve target = 10

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	32	31	30	31	31	51
	Professionals: end of year	31	30	31	31	33	52
	annual growth: start of year	n/a	n/a	*-2.7%*	*0.9%*	*2.8%*	*0.5%*
	Gap in relation to the target	-10	-11	-12	-12	-12	2
	Positions at start of year: target	42	42	42	43	43	49
	Pop per professional: actual (per 10,000)	0.01	0.01	0.01	0.01	0.01	0.01
	Pop per professional: target (per 10,000)	0.01	0.01	0.01	0.01	0.01	0.01
Entrants and exists	Intake from training	2	2	2	3	3	5
	Intake - other (require plan)	0	0	18			
	TOTAL ENTRANTS	2	2	3	4	5	5
	Exit - other (require plan)	1	1	1	1	1	2
	Exit - Retire at 65 (expected)	1	1	1	1	1	2
	Exit - death/invalidity/etc (expected)	1	1	1	1	1	1
	TOTAL EXITS	3	3	3	3	3	5
	TOTAL ENTRANTS LESS EXITS	-1	-1	*0*	*1*	*1*	*0*
Education and training	New student intake	2	2	4	4	4	6
	Continuing students	10	10	10	11	12	22
	Total enrolment at start of year	12	12	14	15	16	28
	% change in new intake	n/a	n/a	70.4%	1.3%	2.5%	1.8%
	Graduates	2	2	3	3	3	6
	Pre-service training loss	0	0	0	0	0	0
	Continuing students	10	10	11	12	13	22

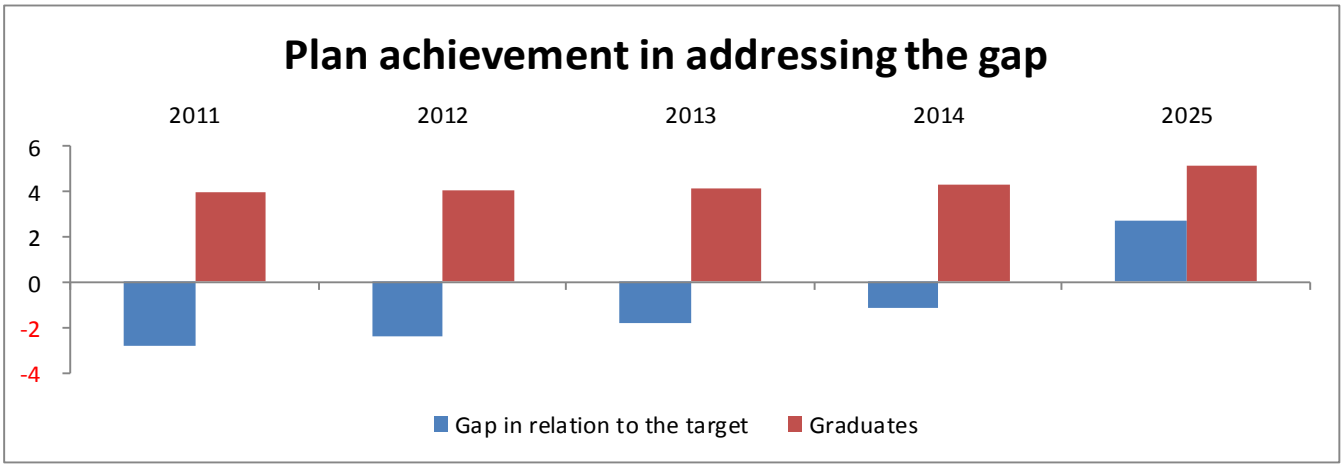


Orthodontics

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	1	
Gap in 2011 based on assessment	-3	
Current staff to population ratio (per 1,000)	0.01	
Target staff to population ratio (per 1,000)	0.01	
Available professionals for national need	33	
Total entrants	4	
Total exits	3	
Total entrants less exists	1	
Enrolled students	16	
Graduates	4	Years to achieve target = 10

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	32	33	33	34	35	44
	Professionals: end of year	33	33	34	35	36	45
	annual growth: start of year	n/a	n/a	*2.1%*	*2.8%*	*2.9%*	*3.1%*
	Gap in relation to the target	-3	-3	-2	-2	-1	3
	Positions at start of year: target	35	35	36	36	36	41
	Pop per professional: actual (per 10,000)	0.01	0.01	0.01	0.01	0.01	0.01
	Pop per professional: target (per 10,000)	0.01	0.01	0.01	0.01	0.01	0.01
Entrants and exists	Intake from training	4	4	4	4	4	5
	Intake - other (require plan)	0	0	-3			
	TOTAL ENTRANTS	4	4	4	4	4	5
	Exit - other (require plan)	1	1	1	1	1	2
	Exit - Retire at 65 (expected)	1	1	1	1	1	1
	Exit - death/invalidity/etc (expected)	1	1	1	1	1	1
	TOTAL EXITS	3	3	3	3	3	4
	TOTAL ENTRANTS LESS EXITS	1	1	*1*	*1*	*1*	*1*
Education and training	New student intake	4	4	4	4	5	5
	Continuing students	12	12	12	12	12	15
	Total enrolment at start of year	16	16	16	17	17	21
	% change in new intake	n/a	n/a	9.3%	2.7%	2.6%	1.8%
	Graduates	4	4	4	4	4	5
	Pre-service training loss	0	0	0	0	0	0
	Continuing students	12	12	12	12	13	15

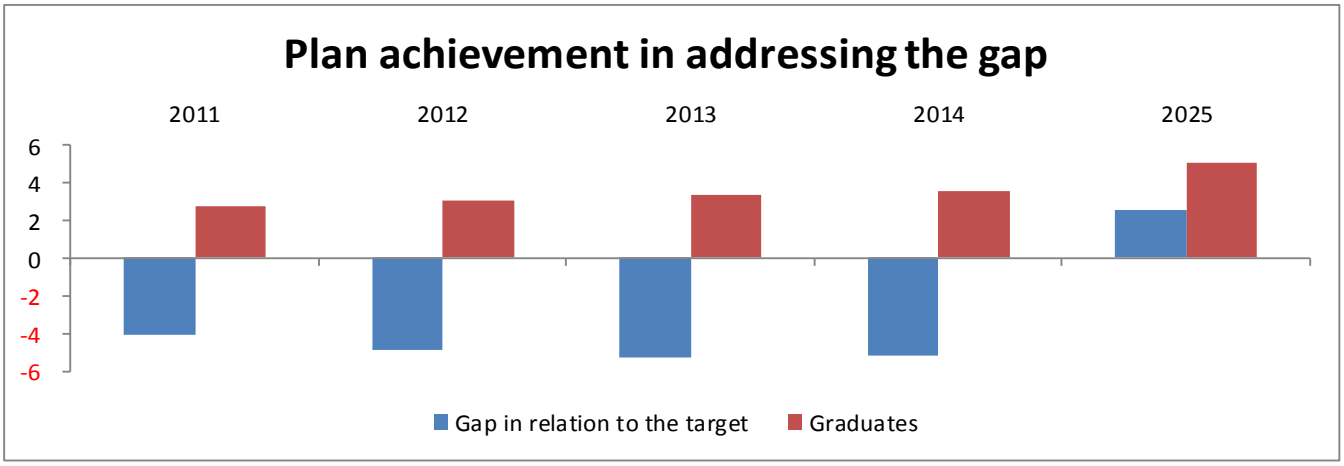


Oral Pathology

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	1	
Gap in 2011 based on assessment	-4	
Current staff to population ratio (per 1,000)	0.01	
Target staff to population ratio (per 1,000)	0.01	
Available professionals for national need	31	
Total entrants	3	
Total exits	3	
Total entrants less exists	-1	
Enrolled students	11	
Graduates	3	Years to achieve target = 10

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	32	31	31	31	31	44
	Professionals: end of year	31	31	31	31	32	45
	annual growth: start of year	n/a	n/a	*-1.6%*	*-0.3%*	*1.2%*	*2.6%*
	Gap in relation to the target	-3	-4	-5	-5	-5	3
	Positions at start of year: target	35	35	36	36	36	41
	Pop per professional: actual (per 10,000)	0.01	0.01	0.01	0.01	0.01	0.01
	Pop per professional: target (per 10,000)	0.01	0.01	0.01	0.01	0.01	0.01
Entrants and exists	Intake from training	3	3	3	3	3	5
	Intake - other (require plan)	0	0	6			
	TOTAL ENTRANTS	3	3	3	4	4	5
	Exit - other (require plan)	1	1	1	1	1	2
	Exit - Retire at 65 (expected)	1	1	1	1	1	1
	Exit - death/invalidity/etc (expected)	1	1	1	1	1	1
	TOTAL EXITS	3	3	3	3	3	4
	TOTAL ENTRANTS LESS EXITS	-1	-1	*-0*	*0*	*1*	*1*
Education and training	New student intake	3	3	4	4	4	5
	Continuing students	8	8	8	9	10	15
	Total enrolment at start of year	11	11	12	13	14	20
	% change in new intake	n/a	n/a	48.6%	0.1%	1.2%	1.8%
	Graduates	3	3	3	3	4	5
	Pre-service training loss	0	0	0	0	0	0
	Continuing students	8	8	9	10	11	15

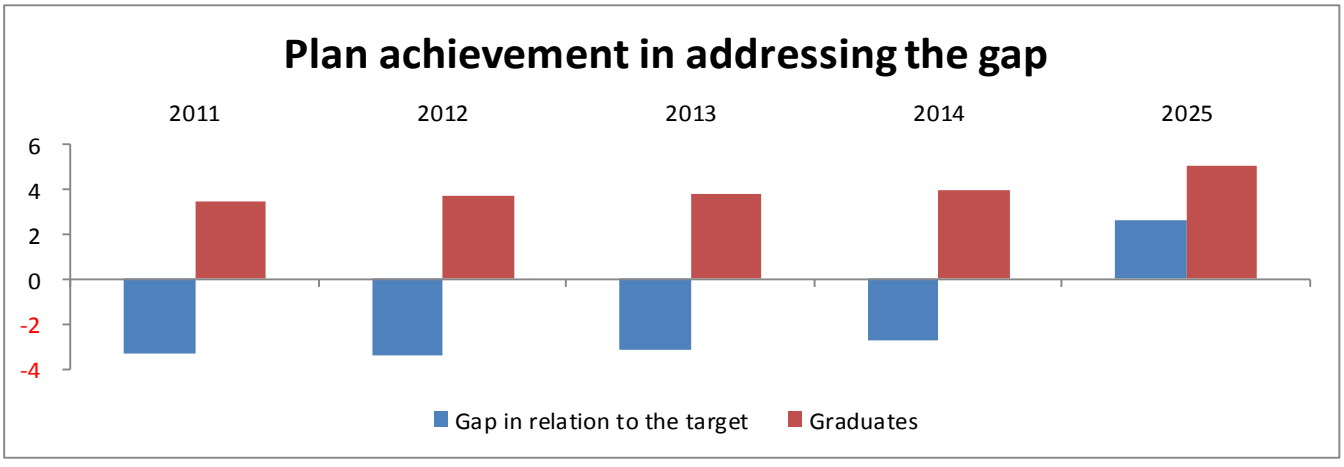


Periodontics

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	1	
Gap in 2011 based on assessment	-3	
Current staff to population ratio (per 1,000)	0.01	
Target staff to population ratio (per 1,000)	0.01	
Available professionals for national need	32	
Total entrants	4	
Total exits	3	
Total entrants less exists	0	
Enrolled students	14	
Graduates	4	Years to achieve target = 10

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	32	32	32	33	34	44
	Professionals: end of year	32	32	33	34	35	45
	annual growth: start of year	n/a	n/a	*0.7%*	*1.6%*	*2.2%*	*2.9%*
	Gap in relation to the target	-3	-3	-3	-3	-3	3
	Positions at start of year: target	35	35	36	36	36	41
	Pop per professional: actual (per 10,000)	0.01	0.01	0.01	0.01	0.01	0.01
	Pop per professional: target (per 10,000)	0.01	0.01	0.01	0.01	0.01	0.01
Entrants and exists	Intake from training	4	4	4	4	4	5
	Intake - other (require plan)	0	0	1			
	TOTAL ENTRANTS	4	4	4	4	4	5
	Exit - other (require plan)	1	1	1	1	1	2
	Exit - Retire at 65 (expected)	1	1	1	1	1	1
	Exit - death/invalidity/etc (expected)	1	1	1	1	1	1
	TOTAL EXITS	3	3	3	3	3	4
	TOTAL ENTRANTS LESS EXITS	0	0	*1*	*1*	*1*	*1*
Education and training	New student intake	4	4	4	4	4	5
	Continuing students	11	11	10	11	11	15
	Total enrolment at start of year	14	14	15	15	16	20
	% change in new intake	n/a	n/a	21.7%	1.7%	2.1%	1.8%
	Graduates	4	4	4	4	4	5
	Pre-service training loss	0	0	0	0	0	0
	Continuing students	10	10	11	11	12	15

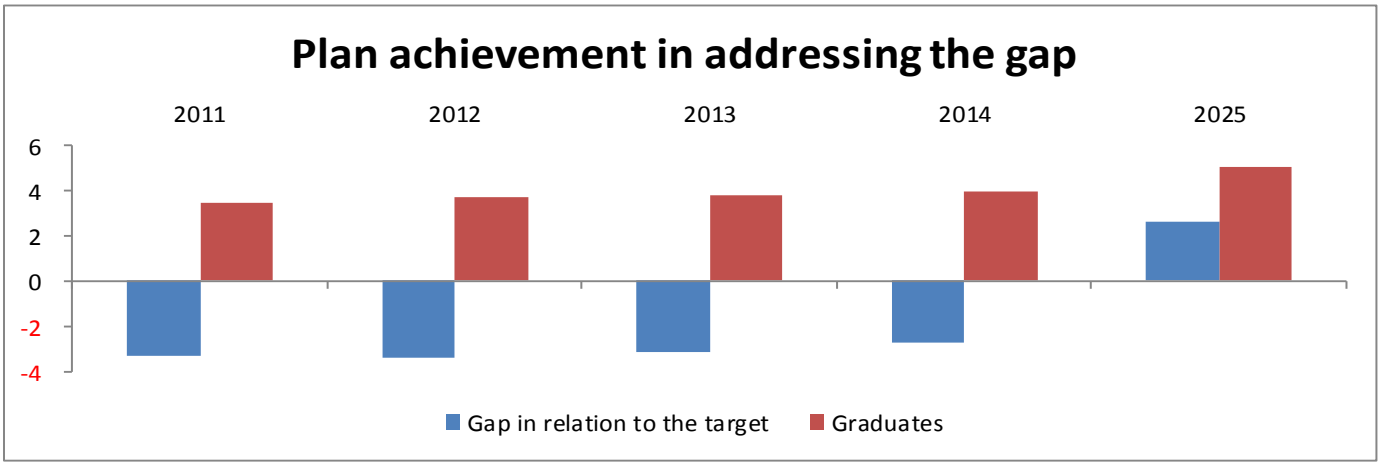


Prosthodontics

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	1	
Gap in 2011 based on assessment	-3	
Current staff to population ratio (per 1,000)	0.01	
Target staff to population ratio (per 1,000)	0.01	
Available professionals for national need	32	
Total entrants	4	
Total exits	3	
Total entrants less exists	0	
Enrolled students	14	
Graduates	4	Years to achieve target = 10

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	32	32	32	33	34	44
	Professionals: end of year	32	32	33	34	35	45
	annual growth: start of year	n/a	n/a	*0.7%*	*1.6%*	*2.2%*	*2.9%*
	Gap in relation to the target	-3	-3	-3	-3	-3	3
	Positions at start of year: target	35	35	36	36	36	41
	Pop per professional: actual (per 10,000)	0.01	0.01	0.01	0.01	0.01	0.01
	Pop per professional: target (per 10,000)	0.01	0.01	0.01	0.01	0.01	0.01
Entrants and exists	Intake from training	4	4	4	4	4	5
	Intake - other (require plan)	0	0	1			
	TOTAL ENTRANTS	4	4	4	4	4	5
	Exit - other (require plan)	1	1	1	1	1	2
	Exit - Retire at 65 (expected)	1	1	1	1	1	1
	Exit - death/invalidity/etc (expected)	1	1	1	1	1	1
	TOTAL EXITS	3	3	3	3	3	4
	TOTAL ENTRANTS LESS EXITS	0	0	*1*	*1*	*1*	*1*
Education and training	New student intake	4	4	4	4	4	5
	Continuing students	11	11	10	11	11	15
	Total enrolment at start of year	14	14	15	15	16	20
	% change in new intake	n/a	n/a	21.7%	1.7%	2.1%	1.8%
	Graduates	4	4	4	4	4	5
	Pre-service training loss	0	0	0	0	0	0
	Continuing students	10	10	11	11	12	15



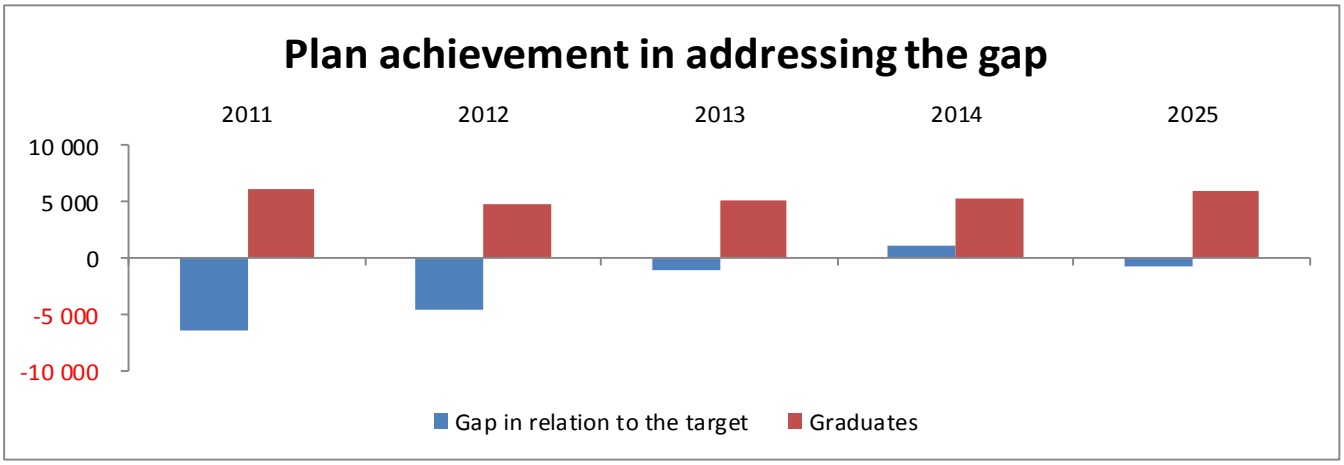
NURSING PROFESSIONALS

Enrolled Nursing assistants

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	2	
Gap in 2011 based on assessment	-6 434	
Current staff to population ratio (per 1,000)	8.55	
Target staff to population ratio (per 1,000)	10.26	
Available professionals for national need	44 305	
Total entrants	6 171	
Total exits	3 987	
Total entrants less exists	2 184	
Enrolled students	6 171	
Graduates	6 171	Years to achieve target = 3

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	41 906	44 305	46 489	50 620	53 224	58 370
	Professionals: end of year	44 305	46 489	50 620	53 224	54 584	58 922
	annual growth: start of year	n/a	n/a	***4.9%***	***8.9%***	***5.1%***	***0.9%***
	Gap in relation to the target	-8 381	-6 434	**-4 707**	**-1 037**	**1 102**	**-723**
	Positions at start of year: target	50 287	50 739	51 196	51 657	52 122	59 093
	Pop per professional: actual (per 10,000)	8.55	8.55	9.83	10.61	11.05	10.98
	Pop per professional: target (per 10,000)	10.26	10.26	10.26	10.26	10.26	10.26
Entrants and exists	Intake from training	6 171	6 171	6 171	4 806	5 114	5 804
	Intake - other (require plan)	0	0	5 535			
	TOTAL ENTRANTS	6 171	6 171	**8 316**	**7 159**	**6 150**	**5 804**
	Exit - other (require plan)	1 676	1 772	1 860	2 025	2 129	2 335
	Exit - Retire at 65 (expected)	1 257	1 329	1 395	1 519	1 597	1 751
	Exit - death/invalidity/etc (expected)	838	886	930	1 012	1 064	1 167
	TOTAL EXITS	3 771	3 987	**4 185**	**4 556**	**4 790**	**5 253**
	TOTAL ENTRANTS LESS EXITS	2 400	2 184	***4 131***	***2 603***	***1 360***	***552***
Education and training	New student intake	6 171	6 171	4 806	5 114	5 267	5 909
	Continuing students	0	0	0	0	0	0
	Total enrolment at start of year	6 171	6 171	4 806	5 114	5 267	5 909
	% change in new intake	n/a	n/a	-22.1%	6.4%	3.0%	1.8%
	Graduates	6 171	6 171	4 806	5 114	5 267	5 909
	Pre-service training loss	494	494	384	409	421	473
	Continuing students	0	0	0	0	0	0

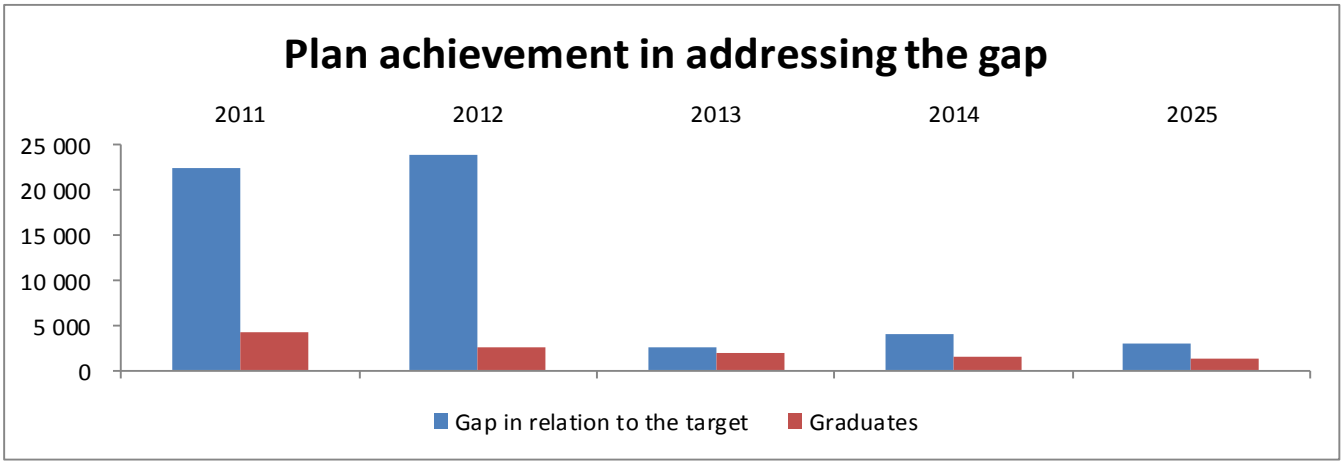


Enrolled Nurses

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	-7	
Gap in 2011 based on assessment	22 471	
Current staff to population ratio (per 1,000)	6.12	
Target staff to population ratio (per 1,000)	1.84	
Available professionals for national need	31 557	
Total entrants	4 243	
Total exits	2 840	
Total entrants less exists	1 402	
Enrolled students	8 485	
Graduates	4 243	Years to achieve target = 1

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	30 015	31 557	32 959	11 764	13 253	13 627
	Professionals: end of year	31 557	32 959	11 764	13 253	13 887	13 625
	annual growth: start of year	n/a	n/a	***4.4%***	***-64.3%***	***12.7%***	***-0.2%***
	Gap in relation to the target	21 010	22 471	**23 792**	**2 514**	**3 920**	**3 046**
	Positions at start of year: target	9 004	9 086	9 167	9 250	9 333	10 581
	Pop per professional: actual (per 10,000)	6.12	6.12	6.97	2.46	2.75	2.56
	Pop per professional: target (per 10,000)	1.84	1.84	1.84	1.84	1.84	1.84
Entrants and exists	Intake from training	4 243	4 243	4 243	2 547	1 827	1 225
	Intake - other (require plan)	0	0	-22 471			
	TOTAL ENTRANTS	4 243	4 243	**-18 229**	**2 547**	**1 827**	**1 225**
	Exit - other (require plan)	1 201	1 262	1 318	471	530	545
	Exit - Retire at 65 (expected)	900	947	989	353	398	409
	Exit - death/invalidity/etc (expected)	600	631	659	235	265	273
	TOTAL EXITS	2 701	2 840	**2 966**	**1 059**	**1 193**	**1 227**
	TOTAL ENTRANTS LESS EXITS	1 542	1 402	***-21 195***	***1 489***	***634***	***-2***
Education and training	New student intake	4 243	4 243	1 192	1 202	1 213	1 376
	Continuing students	4 243	4 243	3 903	2 452	1 731	1 117
	Total enrolment at start of year	8 485	8 485	5 095	3 655	2 944	2 493
	% change in new intake	n/a	n/a	-71.9%	0.9%	0.9%	1.8%
	Graduates	4 243	4 243	2 547	1 827	1 472	1 246
	Pre-service training loss	339	339	95	96	97	110
	Continuing students	3 903	3 903	2 452	1 731	1 375	1 136

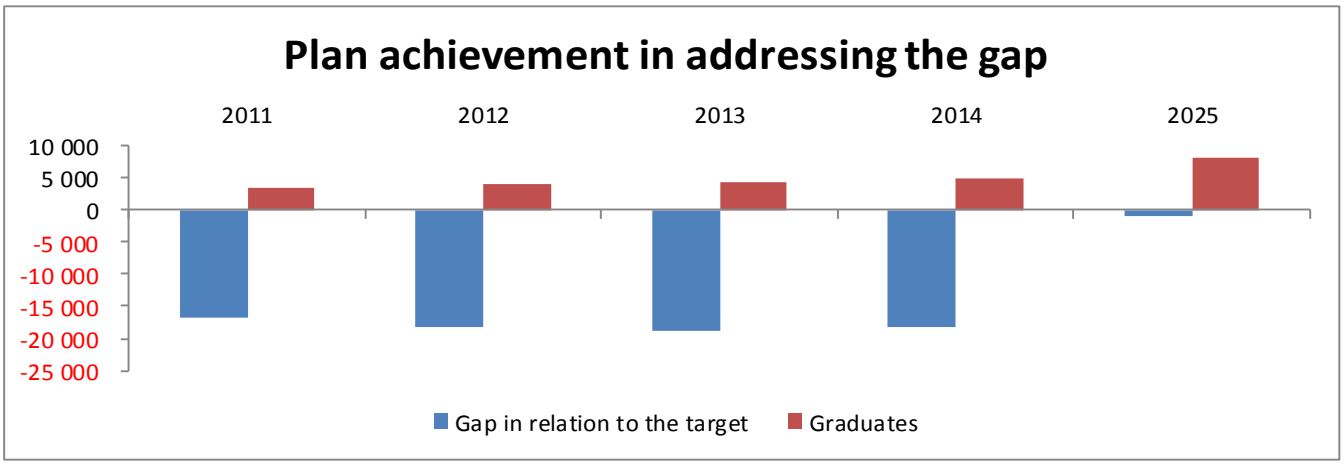


Professional Nurses

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	3	
Gap in 2011 based on assessment	-16 675	
Current staff to population ratio (per 1,000)	10.15	
Target staff to population ratio (per 1,000)	13.20	
Available professionals for national need	48 612	
Total entrants	3 318	
Total exits	4 374	
Total entrants less exists	-1 056	
Enrolled students	13 272	
Graduates	3 318	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	49 772	48 612	47 555	47 784	48 902	75 121
	Professionals: end of year	48 612	47 555	47 784	48 902	50 538	78 624
	annual growth: start of year	n/a	n/a	***-2.2%***	***0.5%***	***2.3%***	***4.0%***
	Gap in relation to the target	-14 932	-16 675	**-18 319**	**-18 683**	**-18 163**	**-913**
	Positions at start of year: target	64 704	65 287	65 874	66 467	67 065	76 035
	Pop per professional: actual (per 10,000)	10.15	10.15	10.05	10.01	10.15	14.13
	Pop per professional: target (per 10,000)	13.20	13.20	13.20	13.20	13.20	13.20
Entrants and exists	Intake from training	3 318	3 318	3 318	4 010	4 480	7 818
	Intake - other (require plan)	0	0	23 820			
	TOTAL ENTRANTS	3 318	3 318	**4 509**	**5 419**	**6 037**	**10 263**
	Exit - other (require plan)	1 991	1 944	1 902	1 911	1 956	3 005
	Exit - Retire at 65 (expected)	1 493	1 458	1 427	1 434	1 467	2 254
	Exit - death/invalidity/etc (expected)	995	972	951	956	978	1 502
	TOTAL EXITS	4 479	4 374	**4 280**	**4 301**	**4 401**	**6 761**
	TOTAL ENTRANTS LESS EXITS	-1 161	-1 056	***229***	***1 118***	***1 636***	***3 502***
Education and training	New student intake	3 318	3 318	6 352	6 399	6 539	9 775
	Continuing students	9 954	9 954	9 689	11 522	12 929	22 701
	Total enrolment at start of year	13 272	13 272	16 041	17 921	19 468	32 476
	% change in new intake	n/a	n/a	91.4%	0.7%	2.2%	3.8%
	Graduates	3 318	3 318	4 010	4 480	4 867	8 119
	Pre-service training loss	265	265	508	512	523	782
	Continuing students	9 689	9 689	11 522	12 929	14 078	23 575

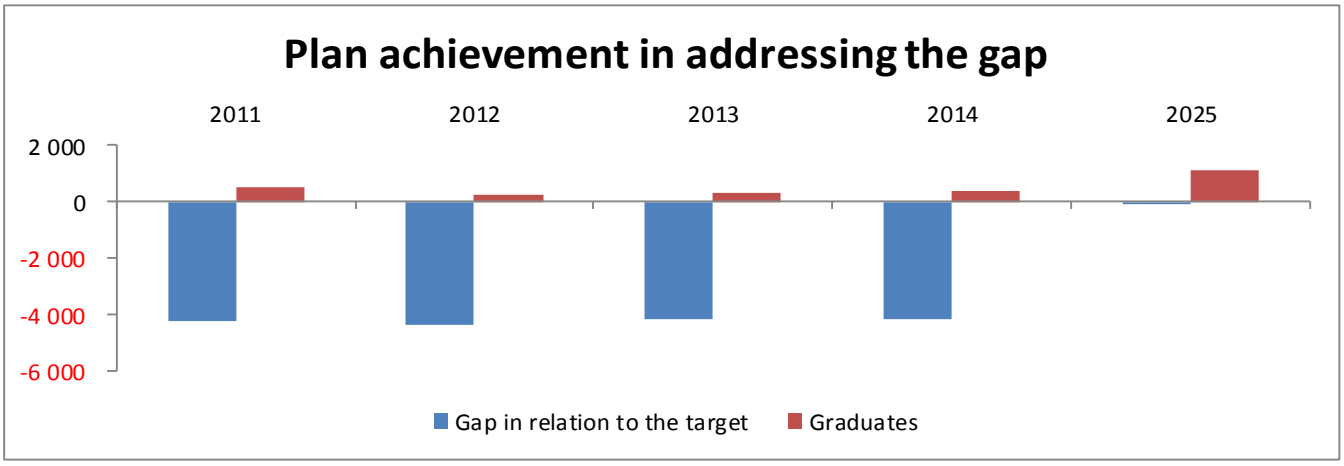


Professional Nurses: PHC

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	7	
Gap in 2011 based on assessment	-4 270	
Current staff to population ratio (per 1,000)	1.21	
Target staff to population ratio (per 1,000)	2.05	
Available professionals for national need	5 890	
Total entrants	500	
Total exits	531	
Total entrants less exists	-31	
Enrolled students	1 000	
Graduates	500	Years to achieve target = 12

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	5 923	5 890	5 859	6 188	6 241	11 816
	Professionals: end of year	5 890	5 859	6 188	6 241	6 403	11 785
	annual growth: start of year	n/a	n/a	***-0.5%***	***5.6%***	***0.9%***	***-1.0%***
	Gap in relation to the target	-4 146	-4 270	**-4 392**	**-4 155**	**-4 195**	**-16**
	Positions at start of year: target	10 069	10 160	10 251	10 343	10 436	11 832
	Pop per professional: actual (per 10,000)	1.21	1.21	1.24	1.30	1.30	2.22
	Pop per professional: target (per 10,000)	2.05	2.05	2.05	2.05	2.05	2.05
Entrants and exists	Intake from training	500	500	500	212	308	1 032
	Intake - other (require plan)	0	0	7 615			
	TOTAL ENTRANTS	500	500	**856**	**611**	**723**	**1 032**
	Exit - other (require plan)	237	236	234	248	250	473
	Exit - Retire at 65 (expected)	178	177	176	186	187	354
	Exit - death/invalidity/etc (expected)	118	118	117	124	125	236
	TOTAL EXITS	533	531	**527**	**558**	**562**	**1 063**
	TOTAL ENTRANTS LESS EXITS	-33	-31	***328***	***53***	***162***	***-31***
Education and training	New student intake	500	500	809	854	861	1 538
	Continuing students	500	500	460	993	1 470	5 037
	Total enrolment at start of year	1 000	1 000	1 269	1 847	2 331	6 575
	% change in new intake	n/a	n/a	61.9%	5.5%	0.9%	1.8%
	Graduates	500	500	212	308	389	1 096
	Pre-service training loss	40	40	65	68	69	123
	Continuing students	460	460	993	1 470	1 874	5 356

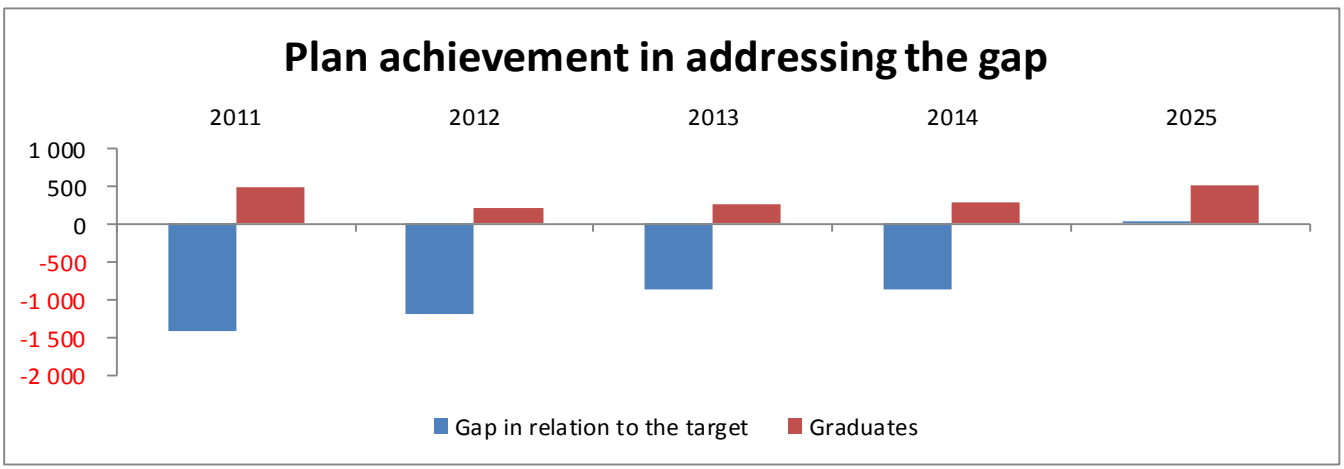


Professional Nurses: Adv. midwife

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	7	
Gap in 2011 based on assessment	-1 407	
Current staff to population ratio (per 1,000)	0.48	
Target staff to population ratio (per 1,000)	0.82	
Available professionals for national need	2 656	
Total entrants	500	
Total exits	239	
Total entrants less exists	261	
Enrolled students	1 000	
Graduates	500	Years to achieve target = 12

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	2 369	2 656	2 917	3 272	3 298	4 765
	Professionals: end of year	2 656	2 917	3 272	3 298	3 349	4 841
	annual growth: start of year	n/a	n/a	***9.8%***	***12.2%***	***0.8%***	***1.4%***
	Gap in relation to the target	-1 658	-1 407	**-1 183**	**-866**	**-876**	**32**
	Positions at start of year: target	4 028	4 064	4 100	4 137	4 175	4 733
	Pop per professional: actual (per 10,000)	0.48	0.48	0.62	0.69	0.68	0.90
	Pop per professional: target (per 10,000)	0.82	0.82	0.82	0.82	0.82	0.82
Entrants and exists	Intake from training	500	500	500	213	261	505
	Intake - other (require plan)	0	0	1 328			
	TOTAL ENTRANTS	500	500	**617**	**321**	**347**	**505**
	Exit - other (require plan)	95	106	117	131	132	191
	Exit - Retire at 65 (expected)	71	80	88	98	99	143
	Exit - death/invalidity/etc (expected)	47	53	58	65	66	95
	TOTAL EXITS	213	239	**263**	**294**	**297**	**429**
	TOTAL ENTRANTS LESS EXITS	287	261	***355***	***27***	***50***	***76***
Education and training	New student intake	500	500	392	436	439	615
	Continuing students	500	500	460	608	748	1 467
	Total enrolment at start of year	1 000	1 000	852	1 043	1 187	2 082
	% change in new intake	n/a	n/a	-21.6%	11.1%	0.8%	1.8%
	Graduates	500	500	213	261	297	520
	Pre-service training loss	40	40	31	35	35	49
	Continuing students	460	460	608	748	855	1 512

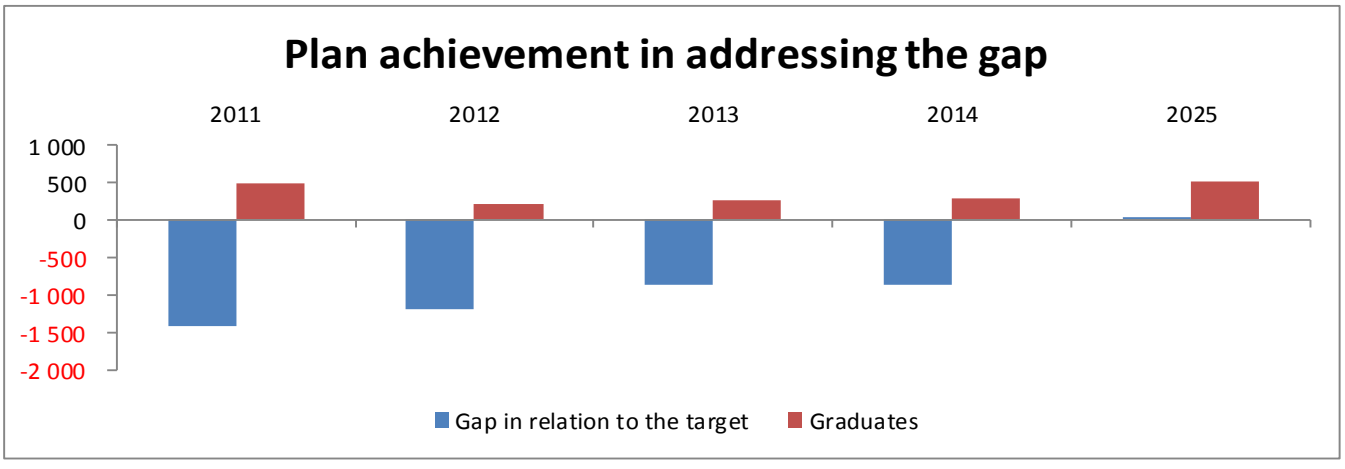


Professional Nurses: ICU

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	7	
Gap in 2011 based on assessment	-1 407	
Current staff to population ratio (per 1,000)	0.48	
Target staff to population ratio (per 1,000)	0.82	
Available professionals for national need	2 656	
Total entrants	500	
Total exits	239	
Total entrants less exists	261	
Enrolled students	1 000	
Graduates	500	Years to achieve target = 12

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	2 369	2 656	2 917	3 272	3 298	4 765
	Professionals: end of year	2 656	2 917	3 272	3 298	3 349	4 841
	annual growth: start of year	n/a	n/a	***9.8%***	***12.2%***	***0.8%***	***1.4%***
	Gap in relation to the target	-1 658	-1 407	**-1 183**	**-866**	**-876**	**32**
	Positions at start of year: target	4 028	4 064	4 100	4 137	4 175	4 733
	Pop per professional: actual (per 10,000)	0.48	0.48	0.62	0.69	0.68	0.90
	Pop per professional: target (per 10,000)	0.82	0.82	0.82	0.82	0.82	0.82
Entrants and exists	Intake from training	500	500	500	213	261	505
	Intake - other (require plan)	0	0	1 328			
	TOTAL ENTRANTS	500	500	**617**	**321**	**347**	**505**
	Exit - other (require plan)	95	106	117	131	132	191
	Exit - Retire at 65 (expected)	71	80	88	98	99	143
	Exit - death/invalidity/etc (expected)	47	53	58	65	66	95
	TOTAL EXITS	213	239	**263**	**294**	**297**	**429**
	TOTAL ENTRANTS LESS EXITS	287	261	***355***	***27***	***50***	***76***
Education and training	New student intake	500	500	392	436	439	615
	Continuing students	500	500	460	608	748	1 467
	Total enrolment at start of year	1 000	1 000	852	1 043	1 187	2 082
	% change in new intake	n/a	n/a	-21.6%	11.1%	0.8%	1.8%
	Graduates	500	500	213	261	297	520
	Pre-service training loss	40	40	31	35	35	49
	Continuing students	460	460	608	748	855	1 512

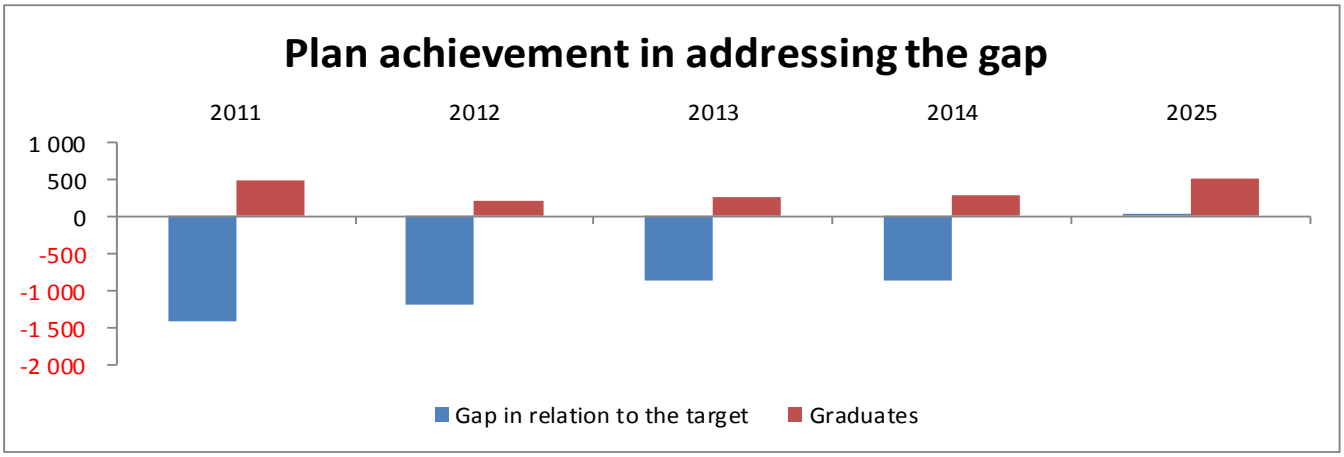


Professional Nurses: Adv. Psychiatry

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	7	
Gap in 2011 based on assessment	-1 407	
Current staff to population ratio (per 1,000)	0.48	
Target staff to population ratio (per 1,000)	0.82	
Available professionals for national need	2 656	
Total entrants	500	
Total exits	239	
Total entrants less exists	261	
Enrolled students	1 000	
Graduates	500	Years to achieve target = 12

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	2 369	2 656	2 917	3 272	3 298	4 765
	Professionals: end of year	2 656	2 917	3 272	3 298	3 349	4 841
	annual growth: start of year	n/a	n/a	***9.8%***	***12.2%***	***0.8%***	***1.4%***
	Gap in relation to the target	-1 658	-1 407	**-1 183**	**-866**	**-876**	**32**
	Positions at start of year: target	4 028	4 064	4 100	4 137	4 175	4 733
	Pop per professional: actual (per 10,000)	0.48	0.48	0.62	0.69	0.68	0.90
	Pop per professional: target (per 10,000)	0.82	0.82	0.82	0.82	0.82	0.82
Entrants and exists	Intake from training	500	500	500	213	261	505
	Intake - other (require plan)	0	0	1 328			
	TOTAL ENTRANTS	500	500	**617**	**321**	**347**	**505**
	Exit - other (require plan)	95	106	117	131	132	191
	Exit - Retire at 65 (expected)	71	80	88	98	99	143
	Exit - death/invalidity/etc (expected)	47	53	58	65	66	95
	TOTAL EXITS	213	239	**263**	**294**	**297**	**429**
	TOTAL ENTRANTS LESS EXITS	287	261	***355***	***27***	***50***	***76***
Education and training	New student intake	500	500	392	436	439	615
	Continuing students	500	500	460	608	748	1 467
	Total enrolment at start of year	1 000	1 000	852	1 043	1 187	2 082
	% change in new intake	n/a	n/a	-21.6%	11.1%	0.8%	1.8%
	Graduates	500	500	213	261	297	520
	Pre-service training loss	40	40	31	35	35	49
	Continuing students	460	460	608	748	855	1 512

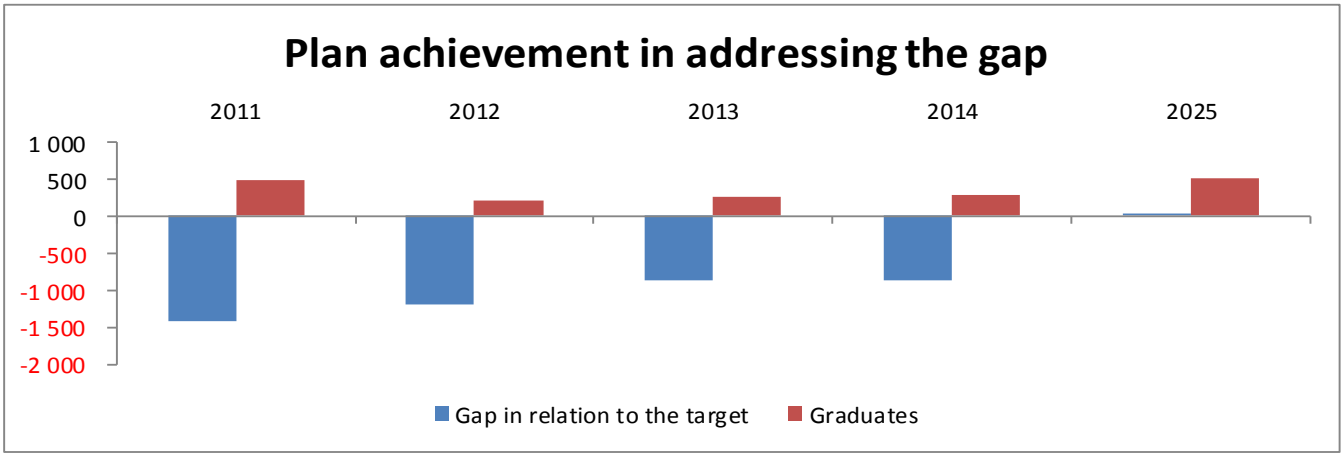


Professional Nurses: Paediatric

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	7	
Gap in 2011 based on assessment	-1 407	
Current staff to population ratio (per 1,000)	0.48	
Target staff to population ratio (per 1,000)	0.82	
Available professionals for national need	2 656	
Total entrants	500	
Total exits	239	
Total entrants less exists	261	
Enrolled students	1 000	
Graduates	500	Years to achieve target = 12

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	2 369	2 656	2 917	3 272	3 298	4 765
	Professionals: end of year	2 656	2 917	3 272	3 298	3 349	4 841
	annual growth: start of year	n/a	n/a	***9.8%***	***12.2%***	***0.8%***	***1.4%***
	Gap in relation to the target	-1 658	-1 407	**-1 183**	**-866**	**-876**	**32**
	Positions at start of year: target	4 028	4 064	4 100	4 137	4 175	4 733
	Pop per professional: actual (per 10,000)	0.48	0.48	0.62	0.69	0.68	0.90
	Pop per professional: target (per 10,000)	0.82	0.82	0.82	0.82	0.82	0.82
Entrants and exists	Intake from training	500	500	500	213	261	505
	Intake - other (require plan)	0	0	1 328			
	TOTAL ENTRANTS	500	500	**617**	**321**	**347**	**505**
	Exit - other (require plan)	95	106	117	131	132	191
	Exit - Retire at 65 (expected)	71	80	88	98	99	143
	Exit - death/invalidity/etc (expected)	47	53	58	65	66	95
	TOTAL EXITS	213	239	**263**	**294**	**297**	**429**
	TOTAL ENTRANTS LESS EXITS	287	261	***355***	***27***	***50***	***76***
Education and training	New student intake	500	500	392	436	439	615
	Continuing students	500	500	460	608	748	1 467
	Total enrolment at start of year	1 000	1 000	852	1 043	1 187	2 082
	% change in new intake	n/a	n/a	-21.6%	11.1%	0.8%	1.8%
	Graduates	500	500	213	261	297	520
	Pre-service training loss	40	40	31	35	35	49
	Continuing students	460	460	608	748	855	1 512

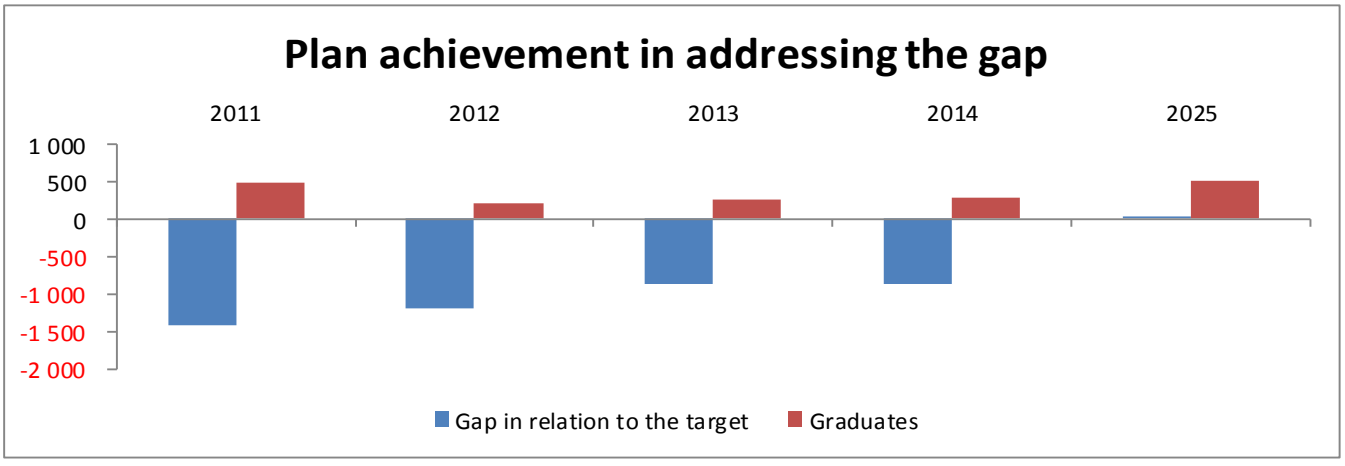


Professional Nurses: Theatre

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	7	
Gap in 2011 based on assessment	-1 407	
Current staff to population ratio (per 1,000)	0.48	
Target staff to population ratio (per 1,000)	0.82	
Available professionals for national need	2 656	
Total entrants	500	
Total exits	239	
Total entrants less exists	261	
Enrolled students	1 000	
Graduates	500	Years to achieve target = 12

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	2 369	2 656	2 917	3 272	3 298	4 765
	Professionals: end of year	2 656	2 917	3 272	3 298	3 349	4 841
	annual growth: start of year	n/a	n/a	***9.8%***	***12.2%***	***0.8%***	***1.4%***
	Gap in relation to the target	-1 658	-1 407	**-1 183**	**-866**	**-876**	**32**
	Positions at start of year: target	4 028	4 064	4 100	4 137	4 175	4 733
	Pop per professional: actual (per 10,000)	0.48	0.48	0.62	0.69	0.68	0.90
	Pop per professional: target (per 10,000)	0.82	0.82	0.82	0.82	0.82	0.82
Entrants and exists	Intake from training	500	500	500	213	261	505
	Intake - other (require plan)	0	0	1 328			
	TOTAL ENTRANTS	500	500	**617**	**321**	**347**	**505**
	Exit - other (require plan)	95	106	117	131	132	191
	Exit - Retire at 65 (expected)	71	80	88	98	99	143
	Exit - death/invalidity/etc (expected)	47	53	58	65	66	95
	TOTAL EXITS	213	239	**263**	**294**	**297**	**429**
	TOTAL ENTRANTS LESS EXITS	287	261	***355***	***27***	***50***	***76***
Education and training	New student intake	500	500	392	436	439	615
	Continuing students	500	500	460	608	748	1 467
	Total enrolment at start of year	1 000	1 000	852	1 043	1 187	2 082
	% change in new intake	n/a	n/a	-21.6%	11.1%	0.8%	1.8%
	Graduates	500	500	213	261	297	520
	Pre-service training loss	40	40	31	35	35	49
	Continuing students	460	460	608	748	855	1 512

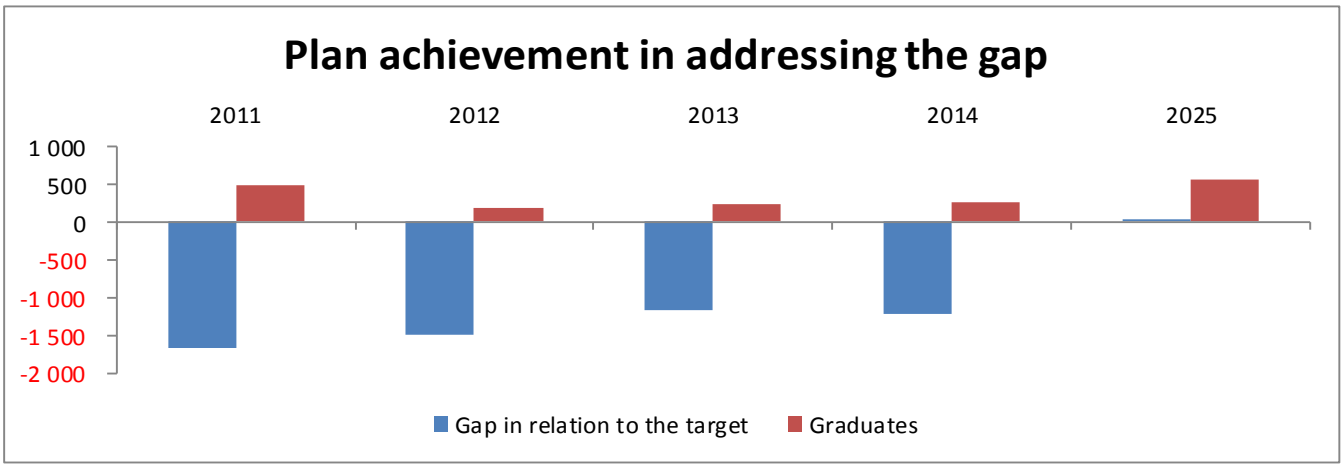


Staff Nurse

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	85	
Gap in 2011 based on assessment	-1 677	
Current staff to population ratio (per 1,000)	0.55	
Target staff to population ratio (per 1,000)	0.94	
Available professionals for national need	2 960	
Total entrants	500	
Total exits	266	
Total entrants less exists	234	
Enrolled students	1 000	
Graduates	500	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	2 703	2 960	3 194	3 546	3 540	5 414
	Professionals: end of year	2 960	3 194	3 546	3 540	3 570	5 462
	annual growth: start of year	n/a	n/a	***7.9%***	***11.0%***	***-0.2%***	***0.4%***
	Gap in relation to the target	-1 892	-1 677	**-1 485**	**-1 175**	**-1 223**	**14**
	Positions at start of year: target	4 595	4 637	4 679	4 721	4 763	5 400
	Pop per professional: actual (per 10,000)	0.55	0.55	0.68	0.74	0.74	1.02
	Pop per professional: target (per 10,000)	0.94	0.94	0.94	0.94	0.94	0.94
Entrants and exists	Intake from training	500	500	500	178	231	534
	Intake - other (require plan)	0	0	2 186			
	TOTAL ENTRANTS	500	500	**640**	**313**	**348**	**534**
	Exit - other (require plan)	108	118	128	142	142	217
	Exit - Retire at 65 (expected)	81	89	96	106	106	162
	Exit - death/invalidity/etc (expected)	54	59	64	71	71	108
	TOTAL EXITS	243	266	**288**	**319**	**319**	**487**
	TOTAL ENTRANTS LESS EXITS	257	234	***352***	***-6***	***30***	***48***
Education and training	New student intake	500	500	431	475	475	702
	Continuing students	500	500	460	679	885	2 081
	Total enrolment at start of year	1 000	1 000	891	1 153	1 359	2 783
	% change in new intake	n/a	n/a	-13.7%	10.1%	0.0%	1.8%
	Graduates	500	500	178	231	272	557
	Pre-service training loss	40	40	35	38	38	56
	Continuing students	460	460	679	885	1 050	2 171

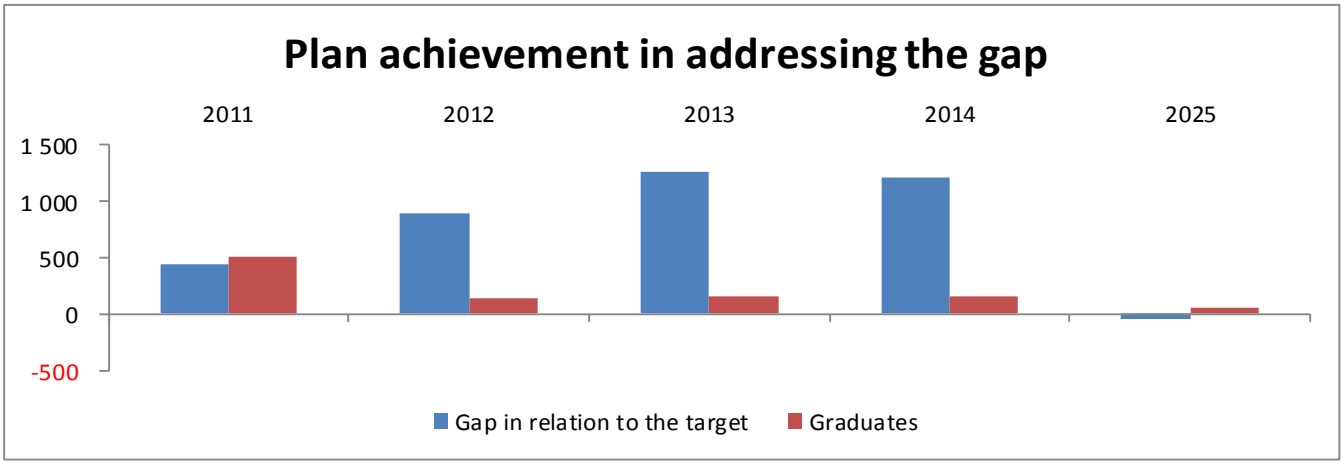


Staff Nurse: 4 year

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	85	
Gap in 2011 based on assessment	446	
Current staff to population ratio (per 1,000)	0.01	
Target staff to population ratio (per 1,000)	0.02	
Available professionals for national need	562	
Total entrants	500	
Total exits	50	
Total entrants less exists	450	
Enrolled students	1 000	
Graduates	500	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	68	562	1 011	1 384	1 323	81
	Professionals: end of year	562	1 011	1 384	1 323	1 225	130
	annual growth: start of year	n/a	n/a	***80.0%***	***36.8%***	***-4.4%***	***649.1%***
	Gap in relation to the target	-47	446	**894**	**1 266**	**1 204**	**-54**
	Positions at start of year: target	115	116	117	118	119	135
	Pop per professional: actual (per 10,000)	0.01	0.01	0.21	0.29	0.27	0.02
	Pop per professional: target (per 10,000)	0.02	0.02	0.02	0.02	0.02	0.02
Entrants and exists	Intake from training	500	500	500	145	148	57
	Intake - other (require plan)	0	0	-1 902			
	TOTAL ENTRANTS	500	500	**463**	**64**	**21**	**57**
	Exit - other (require plan)	3	22	40	55	53	3
	Exit - Retire at 65 (expected)	2	17	30	42	40	2
	Exit - death/invalidity/etc (expected)	1	11	20	28	26	2
	TOTAL EXITS	6	50	**90**	**125**	**119**	**7**
	TOTAL ENTRANTS LESS EXITS	494	450	***372***	***-61***	***-98***	***49***
Education and training	New student intake	500	500	122	165	158	18
	Continuing students	500	500	460	427	430	168
	Total enrolment at start of year	1 000	1 000	582	592	588	186
	% change in new intake	n/a	n/a	-75.6%	35.4%	-4.4%	1.8%
	Graduates	500	500	145	148	147	46
	Pre-service training loss	40	40	10	13	13	1
	Continuing students	460	460	427	430	428	138

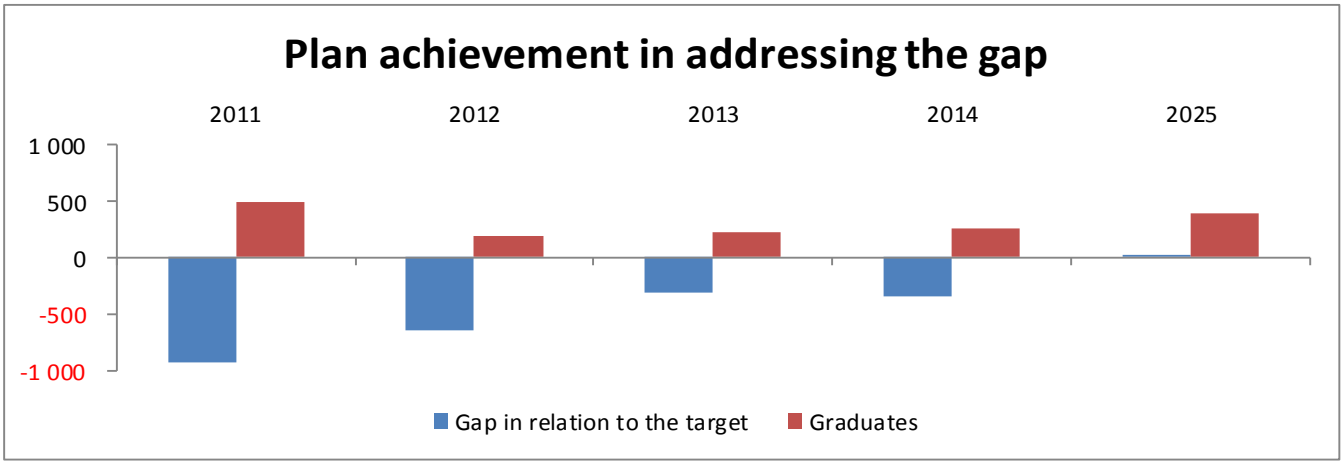


Staff Nurse: 2 year conversion

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	85	
Gap in 2011 based on assessment	-927	
Current staff to population ratio (per 1,000)	0.36	
Target staff to population ratio (per 1,000)	0.61	
Available professionals for national need	2 114	
Total entrants	500	
Total exits	190	
Total entrants less exists	310	
Enrolled students	1 000	
Graduates	500	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	1 773	2 114	2 425	2 784	2 787	3 551
	Professionals: end of year	2 114	2 425	2 784	2 787	2 798	3 620
	annual growth: start of year	n/a	n/a	***14.7%***	***14.8%***	***0.1%***	***1.9%***
	Gap in relation to the target	-1 241	-927	**-644**	**-313**	**-338**	**8**
	Positions at start of year: target	3 015	3 042	3 069	3 097	3 125	3 543
	Pop per professional: actual (per 10,000)	0.36	0.36	0.51	0.58	0.58	0.67
	Pop per professional: target (per 10,000)	0.61	0.61	0.61	0.61	0.61	0.61
Entrants and exists	Intake from training	500	500	500	196	232	389
	Intake - other (require plan)	0	0	492			
	TOTAL ENTRANTS	500	500	**577**	**254**	**263**	**389**
	Exit - other (require plan)	71	85	97	111	111	142
	Exit - Retire at 65 (expected)	53	63	73	84	84	107
	Exit - death/invalidity/etc (expected)	35	42	48	56	56	71
	TOTAL EXITS	159	190	**218**	**251**	**251**	**320**
	TOTAL ENTRANTS LESS EXITS	341	310	***359***	***3***	***11***	***69***
Education and training	New student intake	500	500	322	366	366	461
	Continuing students	500	500	460	561	666	1 130
	Total enrolment at start of year	1 000	1 000	782	927	1 032	1 591
	% change in new intake	n/a	n/a	-35.6%	13.5%	0.2%	1.8%
	Graduates	500	500	196	232	258	398
	Pre-service training loss	40	40	26	29	29	37
	Continuing students	460	460	561	666	745	1 156



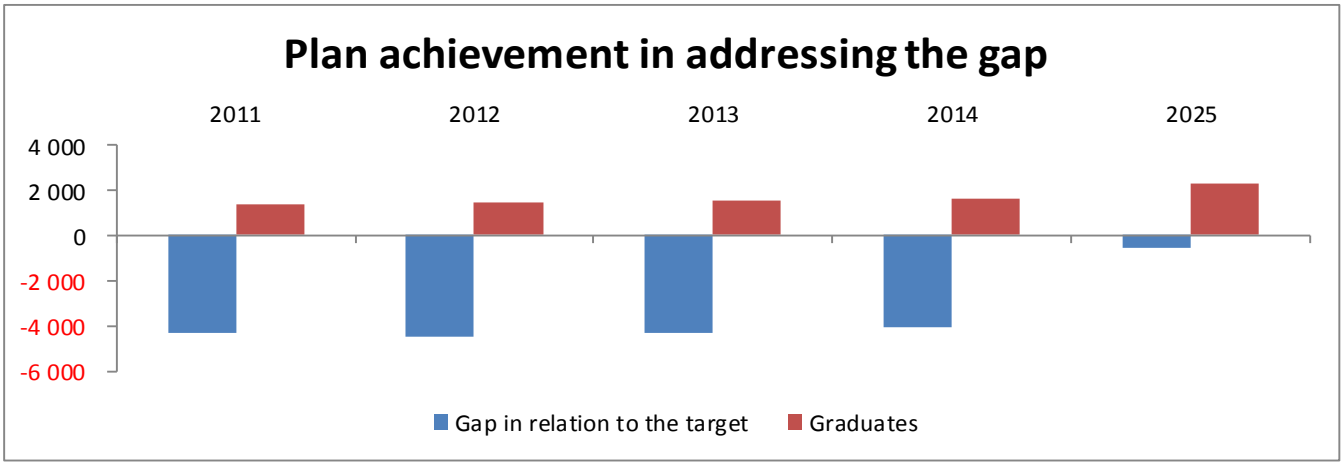
MEDICAL PROFESSIONALS

Medical practitioners

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	3	
Gap in 2011 based on assessment	-4 294	
Current staff to population ratio (per 1,000)	2.82	
Target staff to population ratio (per 1,000)	3.66	
Available professionals for national need	13 829	
Total entrants	1 394	
Total exits	1 383	
Total entrants less exists	11	
Enrolled students	8 364	
Graduates	1 394	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	13 817	13 829	13 840	14 156	14 549	20 582
	Professionals: end of year	13 829	13 840	14 156	14 549	14 985	21 645
	annual growth: start of year	n/a	n/a	***0.1%***	***2.3%***	***2.8%***	***3.8%***
	Gap in relation to the target	-4 145	-4 294	**-4 447**	**-4 295**	**-4 068**	**-525**
	Positions at start of year: target	17 962	18 124	18 287	18 451	18 617	21 107
	Pop per professional: actual (per 10,000)	2.82	2.82	2.93	2.97	3.02	3.87
	Pop per professional: target (per 10,000)	3.66	3.66	3.66	3.66	3.66	3.66
Entrants and exists	Intake from training	1 394	1 394	1 394	1 466	1 533	2 226
	Intake - other (require plan)	0	0	6 078			
	TOTAL ENTRANTS	1 394	1 394	**1 701**	**1 808**	**1 890**	**3 121**
	Exit - other (require plan)	553	553	554	566	582	823
	Exit - Retire at 65 (expected)	553	553	554	566	582	823
	Exit - death/invalidity/etc (expected)	276	277	277	283	291	412
	TOTAL EXITS	1 382	1 383	**1 385**	**1 415**	**1 455**	**2 058**
	TOTAL ENTRANTS LESS EXITS	12	11	***316***	***393***	***436***	***1 063***
Education and training	New student intake	1 394	1 394	1 841	1 883	1 932	2 681
	Continuing students	6 970	6 970	6 956	7 312	7 644	11 105
	Total enrolment at start of year	8 364	8 364	8 797	9 195	9 576	13 786
	% change in new intake	n/a	n/a	32.0%	2.3%	2.6%	3.6%
	Graduates	1 394	1 394	1 466	1 533	1 596	2 298
	Pre-service training loss	14	14	18	19	19	27
	Continuing students	6 956	6 956	7 312	7 644	7 961	11 462

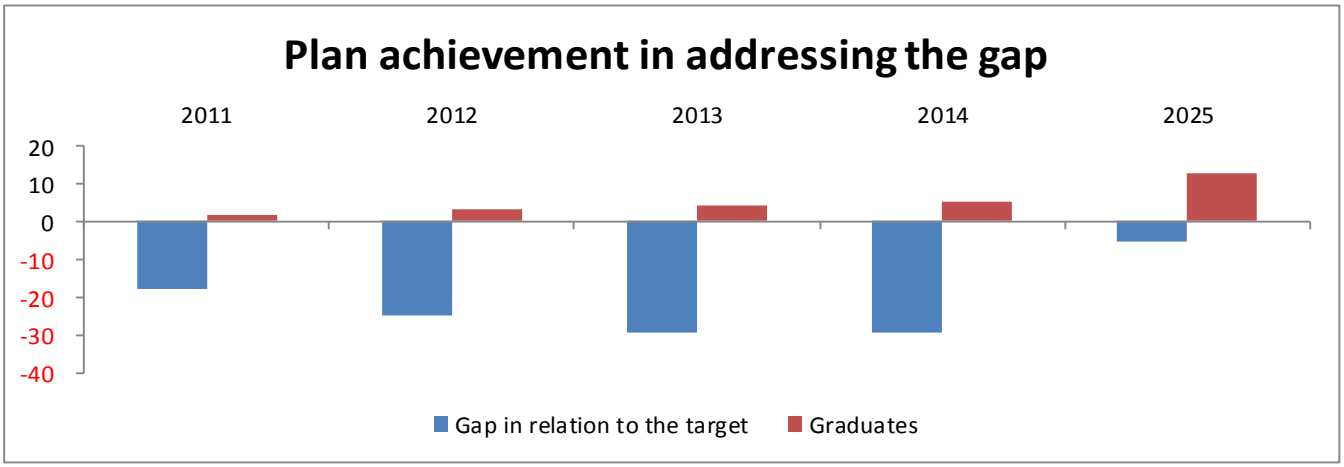


Medical Physicist

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	1	
Gap in 2011 based on assessment	-18	
Current staff to population ratio (per 1,000)	0.02	
Target staff to population ratio (per 1,000)	0.02	
Available professionals for national need	83	
Total entrants	2	
Total exits	8	
Total entrants less exists	-6	
Enrolled students	12	
Graduates	2	Years to achieve target = 7

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	91	83	77	73	74	112
	Professionals: end of year	83	77	73	74	77	114
	annual growth: start of year	n/a	n/a	*-7.6%*	*-4.6%*	*0.8%*	*1.3%*
	Gap in relation to the target	-9	-18	-25	-29	-30	-5
	Positions at start of year: target	100	101	102	102	103	117
	Pop per professional: actual (per 10,000)	0.02	0.02	0.02	0.02	0.02	0.02
	Pop per professional: target (per 10,000)	0.02	0.02	0.02	0.02	0.02	0.02
Entrants and exists	Intake from training	2	2	2	3	4	12
	Intake - other (require plan)	0	0	58			
	TOTAL ENTRANTS	2	2	**5**	**8**	**10**	**12**
	Exit - other (require plan)	4	3	3	3	3	4
	Exit - Retire at 65 (expected)	4	3	3	3	3	4
	Exit - death/invalidity/etc (expected)	2	2	2	1	1	2
	TOTAL EXITS	10	8	**8**	**7**	**7**	**10**
	TOTAL ENTRANTS LESS EXITS	-8	-6	***-4***	***1***	***3***	***2***
Education and training	New student intake	2	2	10	10	10	15
	Continuing students	10	10	10	17	22	61
	Total enrolment at start of year	12	12	20	27	32	77
	% change in new intake	n/a	n/a	421.8%	-2.8%	0.8%	1.8%
	Graduates	2	2	3	4	5	13
	Pre-service training loss	0	0	0	0	0	0
	Continuing students	10	10	17	22	27	64

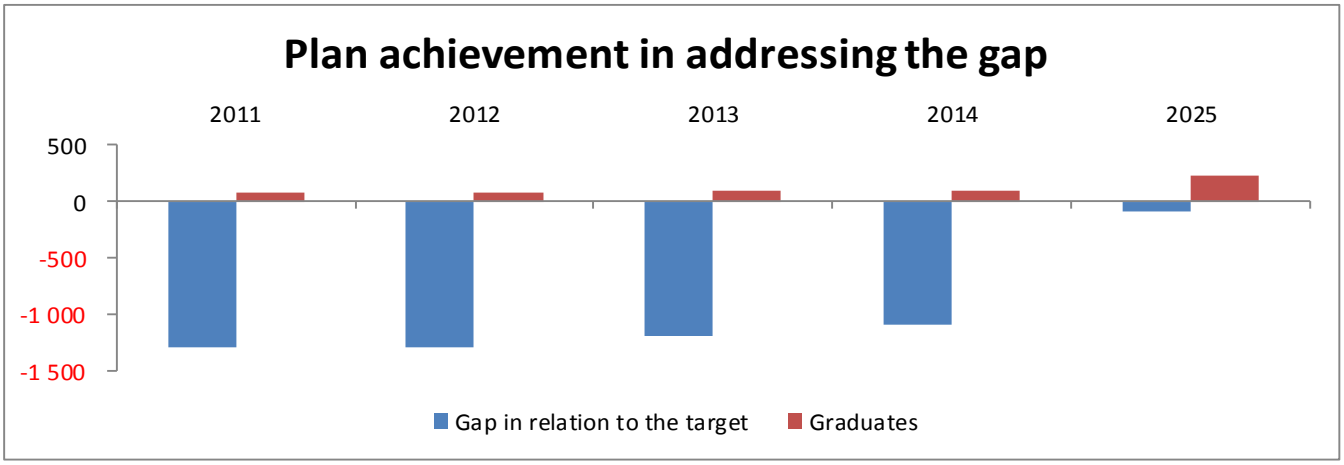


Anaesthesiology

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	25	
Gap in 2011 based on assessment	-1 299	
Current staff to population ratio (per 1,000)	0.11	
Target staff to population ratio (per 1,000)	0.37	
Available professionals for national need	554	
Total entrants	82	
Total exits	55	
Total entrants less exists	26	
Enrolled students	326	
Graduates	82	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	525	554	581	697	809	2 060
	Professionals: end of year	554	581	697	809	914	2 274
	annual growth: start of year	n/a	n/a	***4.8%***	***20.0%***	***16.1%***	***8.1%***
	Gap in relation to the target	-1 312	-1 299	**-1 289**	**-1 190**	**-1 095**	**-99**
	Positions at start of year: target	1 837	1 853	1 870	1 887	1 904	2 158
	Pop per professional: actual (per 10,000)	0.11	0.11	0.12	0.15	0.17	0.39
	Pop per professional: target (per 10,000)	0.37	0.37	0.37	0.37	0.37	0.37
Entrants and exists	Intake from training	82	82	82	83	87	204
	Intake - other (require plan)	0	0	1 650			
	TOTAL ENTRANTS	82	82	**174**	**182**	**186**	**420**
	Exit - other (require plan)	21	22	23	28	32	82
	Exit - Retire at 65 (expected)	21	22	23	28	32	82
	Exit - death/invalidity/etc (expected)	10	11	12	14	16	41
	TOTAL EXITS	52	55	**58**	**70**	**80**	**205**
	TOTAL ENTRANTS LESS EXITS	30	26	***116***	***112***	***106***	***215***
Education and training	New student intake	82	82	87	102	116	269
	Continuing students	245	245	243	246	259	608
	Total enrolment at start of year	326	326	330	348	375	877
	% change in new intake	n/a	n/a	7.3%	17.2%	13.3%	7.6%
	Graduates	82	82	83	87	94	219
	Pre-service training loss	2	2	2	2	2	5
	Continuing students	243	243	246	259	279	652

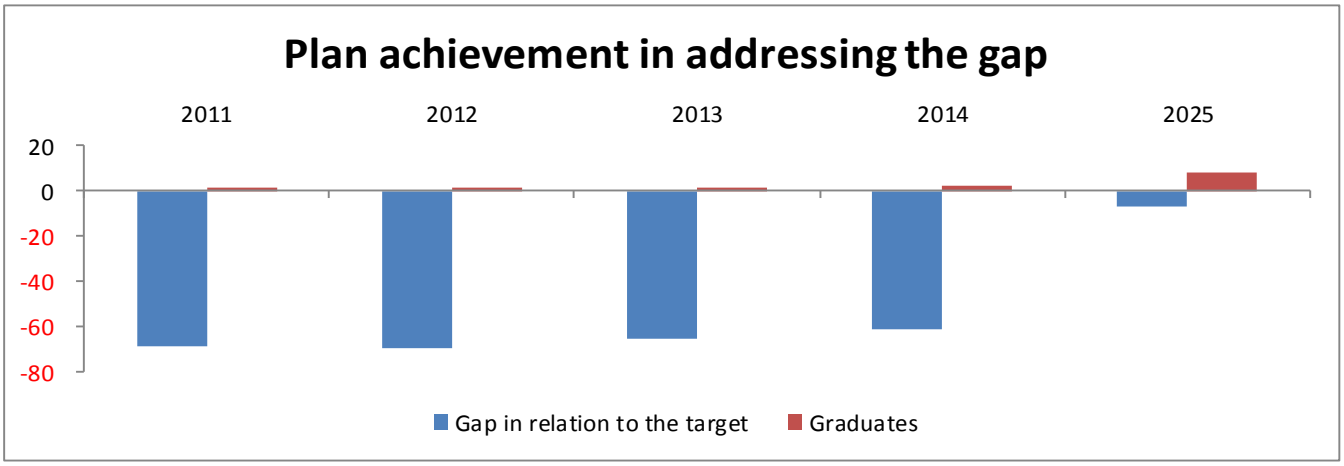


Cardiology

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	50	
Gap in 2011 based on assessment	-69	
Current staff to population ratio (per 1,000)	0.00	
Target staff to population ratio (per 1,000)	0.02	
Available professionals for national need	13	
Total entrants	1	
Total exits	2	
Total entrants less exists	-1	
Enrolled students	5	
Graduates	1	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	14	13	12	18	23	88
	Professionals: end of year	13	12	18	23	28	100
	annual growth: start of year	n/a	n/a	*-4.0%*	*43.5%*	*27.6%*	*10.9%*
	Gap in relation to the target	-68	-69	-70	-65	-61	-7
	Positions at start of year: target	81	82	82	83	84	95
	Pop per professional: actual (per 10,000)	0.00	0.00	0.00	0.00	0.00	0.02
	Pop per professional: target (per 10,000)	0.02	0.02	0.02	0.02	0.02	0.02
Entrants and exists	Intake from training	1	1	1	1	2	7
	Intake - other (require plan)	0	0	100			
	TOTAL ENTRANTS	1	1	**6**	**7**	**7**	**22**
	Exit - other (require plan)	1	1	0	1	1	4
	Exit - Retire at 65 (expected)	1	1	0	1	1	4
	Exit - death/invalidity/etc (expected)	0	0	0	0	0	2
	TOTAL EXITS	2	2	**0**	**2**	**2**	**10**
	TOTAL ENTRANTS LESS EXITS	-1	-1	***5***	***5***	***5***	***12***
Education and training	New student intake	1	1	2	3	4	11
	Continuing students	4	4	4	5	6	30
	Total enrolment at start of year	5	5	6	8	10	41
	% change in new intake	n/a	n/a	126.8%	31.2%	20.1%	10.1%
	Graduates	1	1	1	2	2	8
	Pre-service training loss	0	0	0	0	0	0
	Continuing students	4	4	5	6	8	33

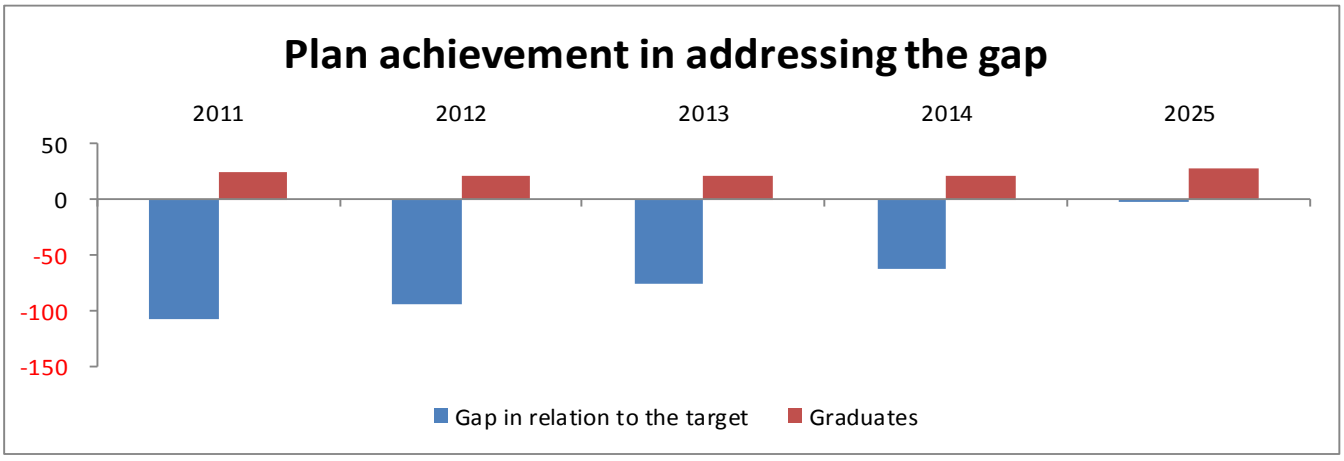


Community Health

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	15	
Gap in 2011 based on assessment	-108	
Current staff to population ratio (per 1,000)	0.02	
Target staff to population ratio (per 1,000)	0.04	
Available professionals for national need	97	
Total entrants	24	
Total exits	10	
Total entrants less exists	14	
Enrolled students	96	
Graduates	24	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	81	97	111	132	148	235
	Professionals: end of year	97	111	132	148	160	244
	annual growth: start of year	n/a	n/a	***14.6%***	***19.2%***	***11.9%***	***3.0%***
	Gap in relation to the target	-122	-108	**-95**	**-76**	**-62**	**-3**
	Positions at start of year: target	203	204	206	208	210	238
	Pop per professional: actual (per 10,000)	0.02	0.02	0.02	0.03	0.03	0.04
	Pop per professional: target (per 10,000)	0.04	0.04	0.04	0.04	0.04	0.04
Entrants and exists	Intake from training	24	24	24	22	21	27
	Intake - other (require plan)	0	0	70			
	TOTAL ENTRANTS	24	24	**32**	**29**	**27**	**32**
	Exit - other (require plan)	3	4	4	5	6	9
	Exit - Retire at 65 (expected)	3	4	4	5	6	9
	Exit - death/invalidity/etc (expected)	2	2	2	3	3	5
	TOTAL EXITS	8	10	**10**	**13**	**15**	**23**
	TOTAL ENTRANTS LESS EXITS	16	14	***21***	***16***	***12***	***9***
Education and training	New student intake	24	24	15	18	20	31
	Continuing students	72	72	72	65	62	80
	Total enrolment at start of year	96	96	87	83	82	110
	% change in new intake	n/a	n/a	-36.2%	17.2%	10.6%	2.9%
	Graduates	24	24	22	21	20	28
	Pre-service training loss	0	0	0	0	0	1
	Continuing students	72	72	65	62	61	82

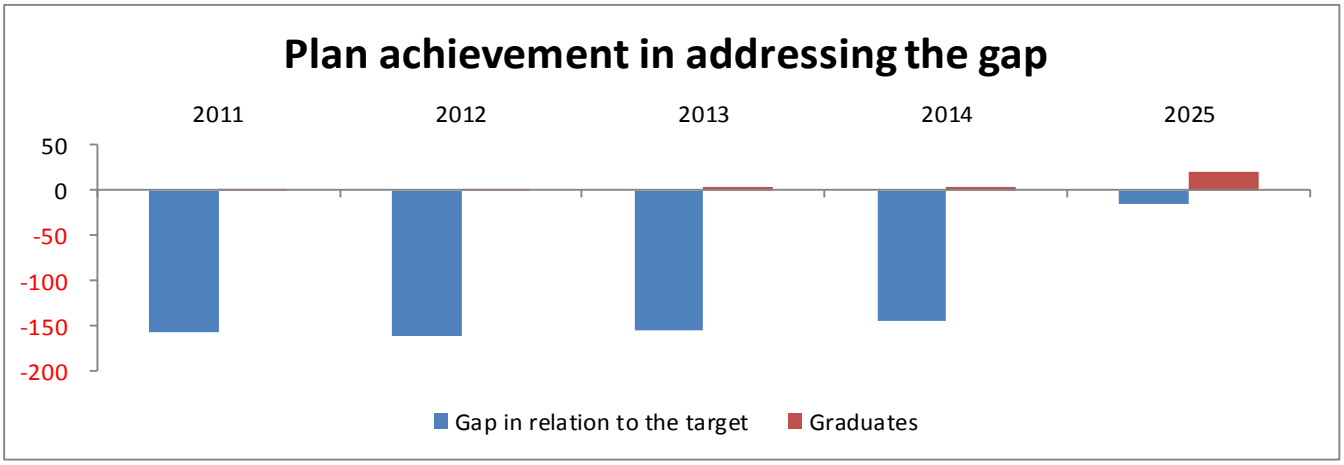


Critical Care

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	50	
Gap in 2011 based on assessment	-158	
Current staff to population ratio (per 1,000)	0.01	
Target staff to population ratio (per 1,000)	0.04	
Available professionals for national need	28	
Total entrants	1	
Total exits	3	
Total entrants less exists	-2	
Enrolled students	3	
Graduates	1	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	31	28	26	35	46	203
	Professionals: end of year	28	26	35	46	57	233
	annual growth: start of year	n/a	n/a	*-8.4%*	*34.7%*	*31.1%*	*11.6%*
	Gap in relation to the target	-154	-158	-163	-155	-146	-15
	Positions at start of year: target	185	187	189	190	192	218
	Pop per professional: actual (per 10,000)	0.01	0.01	0.01	0.01	0.01	0.04
	Pop per professional: target (per 10,000)	0.04	0.04	0.04	0.04	0.04	0.04
Entrants and exists	Intake from training	1	1	1	2	3	18
	Intake - other (require plan)	0	0	231			
	TOTAL ENTRANTS	1	1	**12**	**14**	**16**	**50**
	Exit - other (require plan)	1	1	1	1	2	8
	Exit - Retire at 65 (expected)	1	1	1	1	2	8
	Exit - death/invalidity/etc (expected)	1	1	1	1	1	4
	TOTAL EXITS	3	3	**3**	**3**	**5**	**20**
	TOTAL ENTRANTS LESS EXITS	-2	-2	***9***	***11***	***11***	***30***
Education and training	New student intake	1	1	5	6	7	27
	Continuing students	2	2	2	5	8	54
	Total enrolment at start of year	3	3	7	11	16	81
	% change in new intake	n/a	n/a	551.9%	24.9%	21.7%	10.7%
	Graduates	1	1	2	3	4	20
	Pre-service training loss	0	0	0	0	0	1
	Continuing students	2	2	5	8	12	60

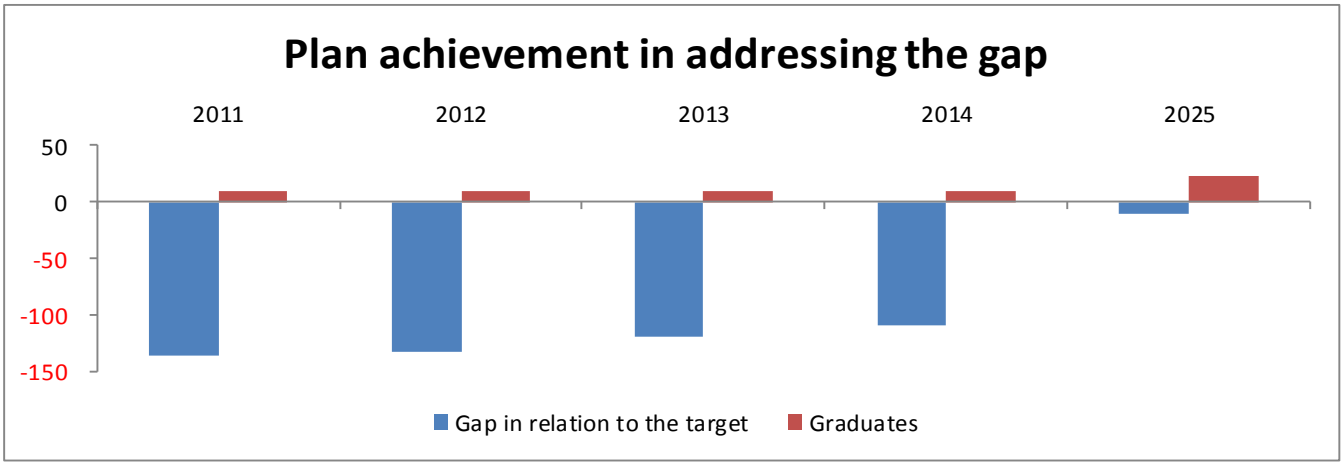


Dermatology

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	30	
Gap in 2011 based on assessment	-136	
Current staff to population ratio (per 1,000)	0.01	
Target staff to population ratio (per 1,000)	0.04	
Available professionals for national need	51	
Total entrants	10	
Total exits	5	
Total entrants less exists	5	
Enrolled students	39	
Graduates	10	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	46	51	56	70	83	207
	Professionals: end of year	51	56	70	83	94	229
	annual growth: start of year	n/a	n/a	***9.2%***	***25.4%***	***18.2%***	***7.6%***
	Gap in relation to the target	-139	-136	**-133**	**-120**	**-109**	**-10**
	Positions at start of year: target	185	187	189	190	192	218
	Pop per professional: actual (per 10,000)	0.01	0.01	0.01	0.01	0.02	0.04
	Pop per professional: target (per 10,000)	0.04	0.04	0.04	0.04	0.04	0.04
Entrants and exists	Intake from training	10	10	10	9	10	21
	Intake - other (require plan)	0	0	163			
	TOTAL ENTRANTS	10	10	**19**	**20**	**20**	**42**
	Exit - other (require plan)	2	2	2	3	3	8
	Exit - Retire at 65 (expected)	2	2	2	3	3	8
	Exit - death/invalidity/etc (expected)	1	1	1	1	2	4
	TOTAL EXITS	5	5	**5**	**7**	**8**	**20**
	TOTAL ENTRANTS LESS EXITS	5	5	***14***	***13***	***11***	***21***
Education and training	New student intake	10	10	8	10	12	27
	Continuing students	29	29	29	28	29	62
	Total enrolment at start of year	39	39	38	38	40	89
	% change in new intake	n/a	n/a	-12.8%	21.4%	15.0%	7.1%
	Graduates	10	10	9	10	10	22
	Pre-service training loss	0	0	0	0	0	1
	Continuing students	29	29	28	29	30	66

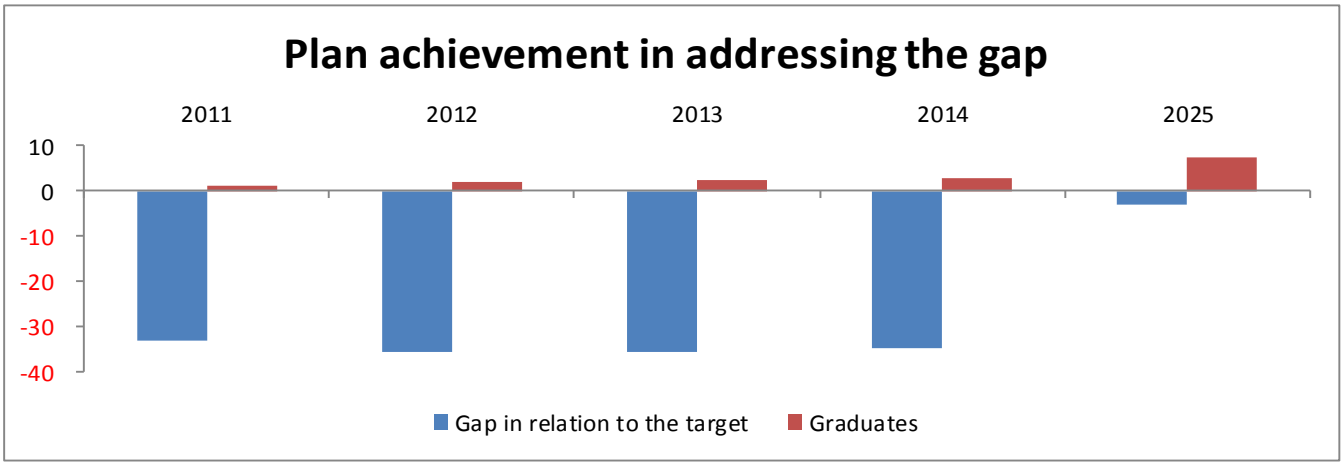


Endocrinology

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	10	
Gap in 2011 based on assessment	-33	
Current staff to population ratio (per 1,000)	0.01	
Target staff to population ratio (per 1,000)	0.01	
Available professionals for national need	29	
Total entrants	1	
Total exits	3	
Total entrants less exists	-2	
Enrolled students	5	
Graduates	1	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	31	29	27	28	29	69
	Professionals: end of year	29	27	28	29	31	76
	annual growth: start of year	n/a	n/a	*-6.6%*	*2.1%*	*5.6%*	*8.0%*
	Gap in relation to the target	-31	-33	-36	-36	-35	-3
	Positions at start of year: target	62	62	63	63	64	73
	Pop per professional: actual (per 10,000)	0.01	0.01	0.01	0.01	0.01	0.01
	Pop per professional: target (per 10,000)	0.01	0.01	0.01	0.01	0.01	0.01
Entrants and exists	Intake from training	1	1	1	2	2	7
	Intake - other (require plan)	0	0	55			
	TOTAL ENTRANTS	1	1	**4**	**5**	**5**	**14**
	Exit - other (require plan)	1	1	1	1	1	3
	Exit - Retire at 65 (expected)	1	1	1	1	1	3
	Exit - death/invalidity/etc (expected)	1	1	1	1	1	1
	TOTAL EXITS	3	3	**3**	**3**	**3**	**7**
	TOTAL ENTRANTS LESS EXITS	-2	-2	***1***	***2***	***2***	***7***
Education and training	New student intake	1	1	4	4	4	9
	Continuing students	4	4	4	6	7	20
	Total enrolment at start of year	5	5	8	10	11	29
	% change in new intake	n/a	n/a	207.2%	2.6%	4.9%	7.5%
	Graduates	1	1	2	2	3	7
	Pre-service training loss	0	0	0	0	0	0
	Continuing students	4	4	6	7	8	22

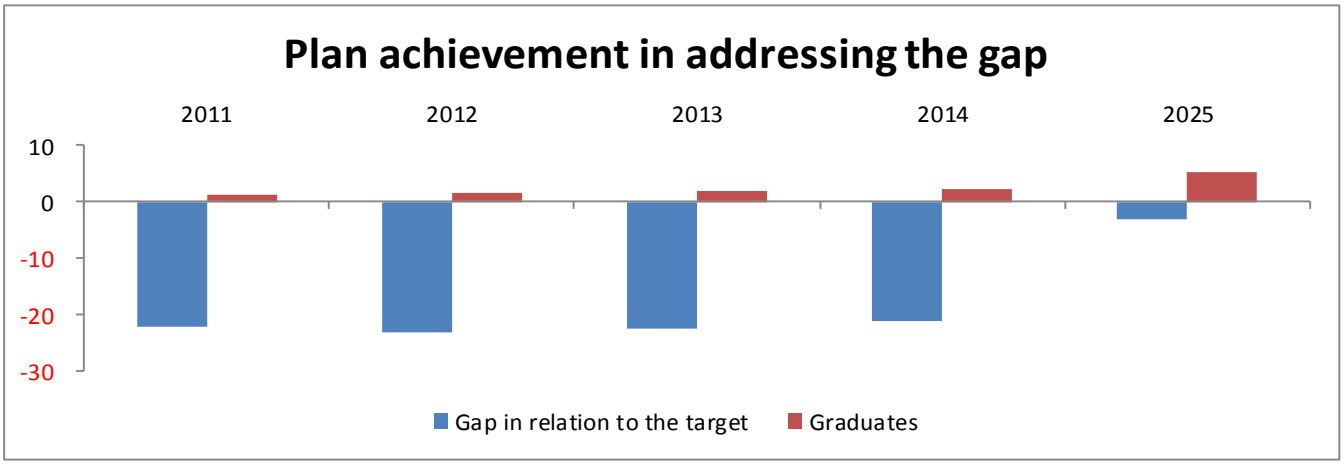


Gastroenterology

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	10	
Gap in 2011 based on assessment	-22	
Current staff to population ratio (per 1,000)	0.00	
Target staff to population ratio (per 1,000)	0.01	
Available professionals for national need	21	
Total entrants	1	
Total exits	2	
Total entrants less exists	-1	
Enrolled students	5	
Graduates	1	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	21	21	20	21	23	47
	Professionals: end of year	21	20	21	23	25	52
	annual growth: start of year	n/a	n/a	*-2.8%*	*5.2%*	*7.5%*	*7.5%*
	Gap in relation to the target	-21	-22	-23	-23	-21	-3
	Positions at start of year: target	42	43	43	44	44	50
	Pop per professional: actual (per 10,000)	0.00	0.00	0.00	0.00	0.00	0.01
	Pop per professional: target (per 10,000)	0.01	0.01	0.01	0.01	0.01	0.01
Entrants and exists	Intake from training	1	1	1	2	2	5
	Intake - other (require plan)	0	0	34			
	TOTAL ENTRANTS	1	1	3	3	4	10
	Exit - other (require plan)	1	1	1	1	1	2
	Exit - Retire at 65 (expected)	1	1	1	1	1	2
	Exit - death/invalidity/etc (expected)	0	0	0	0	0	1
	TOTAL EXITS	2	2	2	2	2	5
	TOTAL ENTRANTS LESS EXITS	-1	-1	*1*	*2*	*2*	*5*
Education and training	New student intake	1	1	3	3	3	6
	Continuing students	4	4	4	5	6	14
	Total enrolment at start of year	5	5	7	8	9	20
	% change in new intake	n/a	n/a	125.7%	5.1%	6.5%	7.0%
	Graduates	1	1	2	2	2	5
	Pre-service training loss	0	0	0	0	0	0
	Continuing students	4	4	5	6	7	15

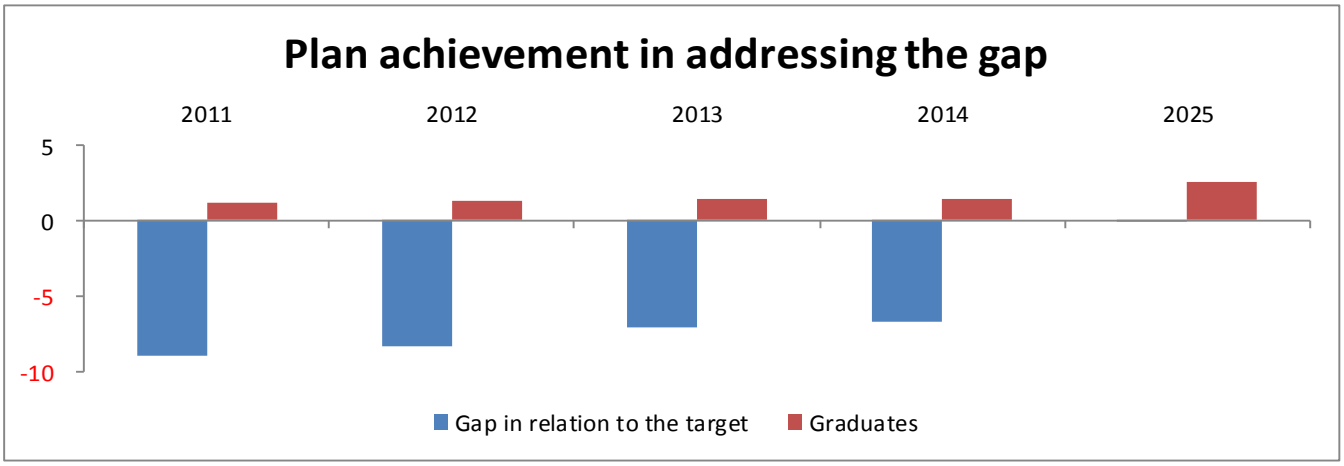


Genetics: Human

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	10	
Gap in 2011 based on assessment	-9	
Current staff to population ratio (per 1,000)	0.00	
Target staff to population ratio (per 1,000)	0.00	
Available professionals for national need	11	
Total entrants	1	
Total exits	0	
Total entrants less exists	1	
Enrolled students	5	
Graduates	1	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	10	11	11	13	13	23
	Professionals: end of year	11	11	13	13	14	24
	annual growth: start of year	n/a	n/a	***7.9%***	***12.7%***	***3.5%***	***5.7%***
	Gap in relation to the target	-10	-9	**-8**	**-7**	**-7**	**-0**
	Positions at start of year: target	19	19	20	20	20	23
	Pop per professional: actual (per 10,000)	0.00	0.00	0.00	0.00	0.00	0.00
	Pop per professional: target (per 10,000)	0.00	0.00	0.00	0.00	0.00	0.00
Entrants and exists	Intake from training	1	1	1	1	1	2
	Intake - other (require plan)	0	0	10			
	TOTAL ENTRANTS	1	1	**2**	**2**	**2**	**3**
	Exit - other (require plan)	0	0	0	1	1	1
	Exit - Retire at 65 (expected)	0	0	0	1	1	1
	Exit - death/invalidity/etc (expected)	0	0	0	0	0	0
	TOTAL EXITS	0	0	**0**	**2**	**2**	**2**
	TOTAL ENTRANTS LESS EXITS	1	1	***1***	***0***	***0***	***1***
Education and training	New student intake	1	1	2	2	2	3
	Continuing students	4	4	4	4	4	7
	Total enrolment at start of year	5	5	5	6	6	10
	% change in new intake	n/a	n/a	24.1%	11.6%	3.2%	5.4%
	Graduates	1	1	1	1	1	3
	Pre-service training loss	0	0	0	0	0	0
	Continuing students	4	4	4	4	4	7

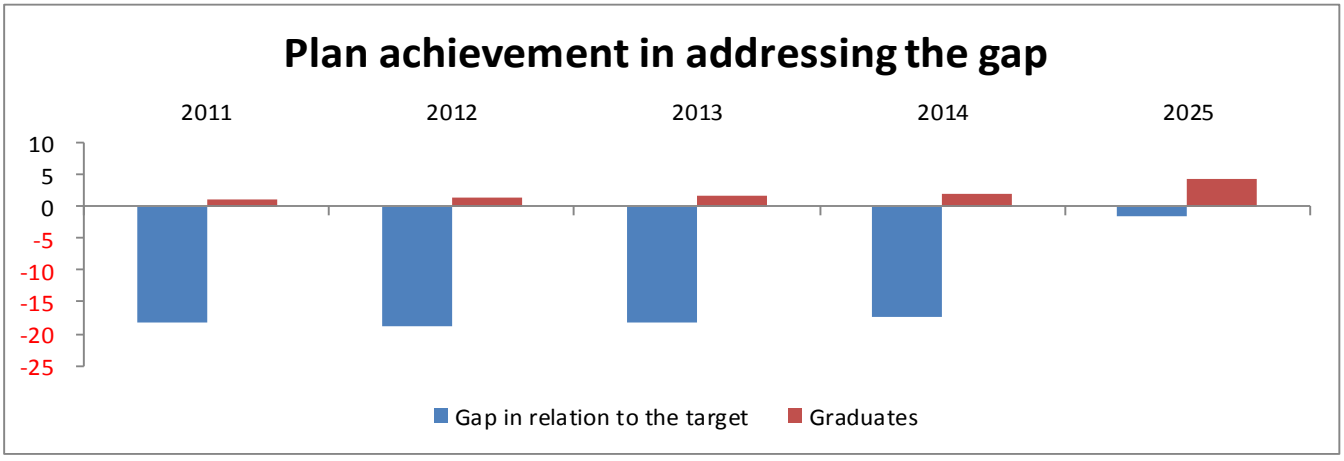


Genetics: Medical

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	10	
Gap in 2011 based on assessment	-18	
Current staff to population ratio (per 1,000)	0.00	
Target staff to population ratio (per 1,000)	0.01	
Available professionals for national need	17	
Total entrants	1	
Total exits	2	
Total entrants less exists	0	
Enrolled students	5	
Graduates	1	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	17	17	16	17	19	39
	Professionals: end of year	17	16	17	19	20	43
	annual growth: start of year	n/a	n/a	*-2.5%*	*5.4%*	*7.3%*	*8.4%*
	Gap in relation to the target	-17	-18	-19	-18	-17	-1
	Positions at start of year: target	35	35	35	36	36	41
	Pop per professional: actual (per 10,000)	0.00	0.00	0.00	0.00	0.00	0.01
	Pop per professional: target (per 10,000)	0.01	0.01	0.01	0.01	0.01	0.01
Entrants and exists	Intake from training	1	1	1	2	2	4
	Intake - other (require plan)	0	0	27			
	TOTAL ENTRANTS	1	1	3	3	3	8
	Exit - other (require plan)	1	1	1	1	1	2
	Exit - Retire at 65 (expected)	1	1	1	1	1	2
	Exit - death/invalidity/etc (expected)	0	0	0	0	0	1
	TOTAL EXITS	2	2	2	2	2	5
	TOTAL ENTRANTS LESS EXITS	-0	-0	*1*	*1*	*2*	*3*
Education and training	New student intake	1	1	2	2	3	5
	Continuing students	4	4	4	4	5	12
	Total enrolment at start of year	5	5	6	7	8	17
	% change in new intake	n/a	n/a	85.5%	5.3%	6.4%	7.8%
	Graduates	1	1	2	2	2	4
	Pre-service training loss	0	0	0	0	0	0
	Continuing students	4	4	4	5	6	13

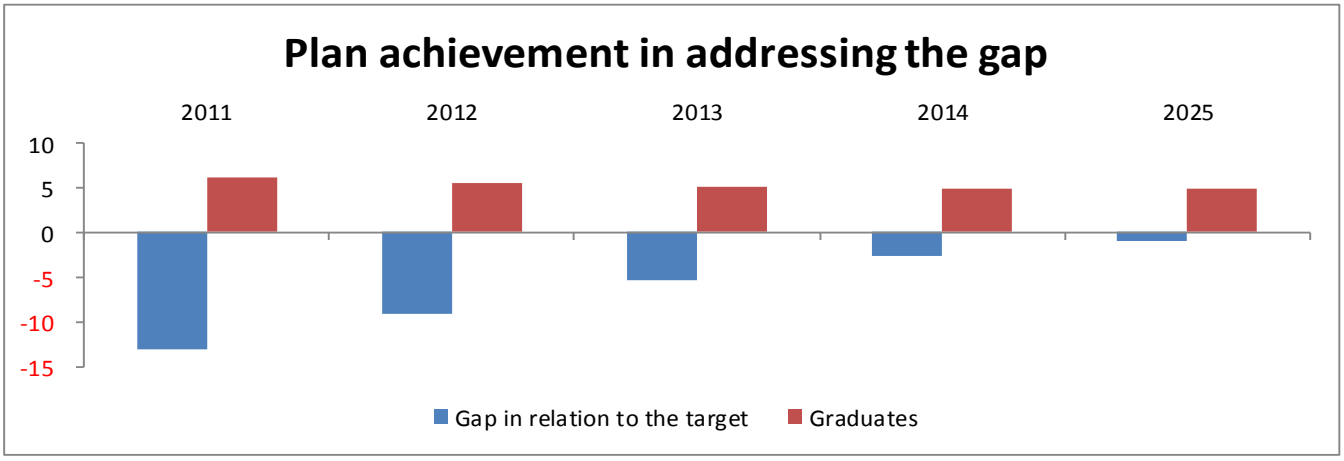


Haematology: Clinical

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	10	
Gap in 2011 based on assessment	-13	
Current staff to population ratio (per 1,000)	0.00	
Target staff to population ratio (per 1,000)	0.01	
Available professionals for national need	22	
Total entrants	6	
Total exits	2	
Total entrants less exists	4	
Enrolled students	25	
Graduates	6	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	17	22	26	30	33	40
	Professionals: end of year	22	26	30	33	36	41
	annual growth: start of year	n/a	n/a	***20.0%***	***15.7%***	***9.9%***	***1.0%***
	Gap in relation to the target	-17	-13	**-9**	**-5**	**-3**	**-1**
	Positions at start of year: target	35	35	35	36	36	41
	Pop per professional: actual (per 10,000)	0.00	0.00	0.01	0.01	0.01	0.01
	Pop per professional: target (per 10,000)	0.01	0.01	0.01	0.01	0.01	0.01
Entrants and exists	Intake from training	6	6	6	6	5	5
	Intake - other (require plan)	0	0	1			
	TOTAL ENTRANTS	6	6	**7**	**6**	**6**	**6**
	Exit - other (require plan)	1	1	1	1	1	2
	Exit - Retire at 65 (expected)	1	1	1	1	1	2
	Exit - death/invalidity/etc (expected)	0	0	1	1	1	1
	TOTAL EXITS	2	2	**3**	**3**	**3**	**5**
	TOTAL ENTRANTS LESS EXITS	5	4	***4***	***3***	***2***	***1***
Education and training	New student intake	6	6	4	4	4	5
	Continuing students	19	19	19	17	15	15
	Total enrolment at start of year	25	25	22	21	20	20
	% change in new intake	n/a	n/a	-44.0%	14.4%	9.1%	1.0%
	Graduates	6	6	6	5	5	5
	Pre-service training loss	0	0	0	0	0	0
	Continuing students	19	19	17	15	15	15

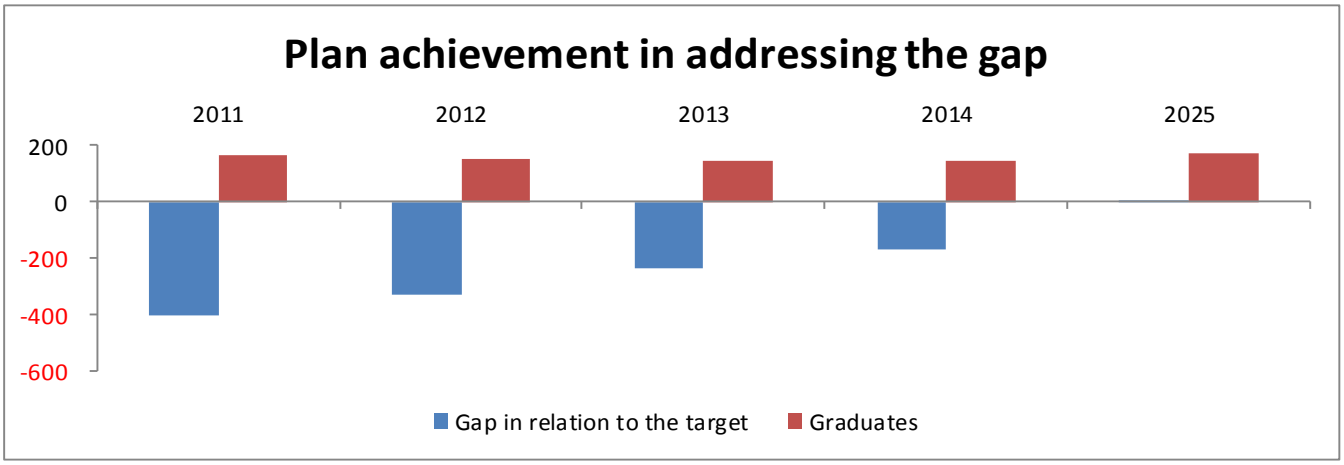


Medicine

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	7	
Gap in 2011 based on assessment	-405	
Current staff to population ratio (per 1,000)	0.14	
Target staff to population ratio (per 1,000)	0.24	
Available professionals for national need	790	
Total entrants	164	
Total exits	80	
Total entrants less exists	84	
Enrolled students	654	
Graduates	164	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	696	790	874	979	1 058	1 396
	Professionals: end of year	790	874	979	1 058	1 117	1 411
	annual growth: start of year	n/a	n/a	***10.6%***	***12.1%***	***8.0%***	***1.2%***
	Gap in relation to the target	-488	-405	**-331**	**-237**	**-169**	**4**
	Positions at start of year: target	1 184	1 195	1 205	1 216	1 227	1 391
	Pop per professional: actual (per 10,000)	0.14	0.14	0.18	0.21	0.22	0.26
	Pop per professional: target (per 10,000)	0.24	0.24	0.24	0.24	0.24	0.24
Entrants and exists	Intake from training	164	164	164	151	145	168
	Intake - other (require plan)	0	0		88		
	TOTAL ENTRANTS	164	164	**192**	**176**	**165**	**155**
	Exit - other (require plan)	28	32	35	39	42	56
	Exit - Retire at 65 (expected)	28	32	35	39	42	56
	Exit - death/invalidity/etc (expected)	14	16	17	20	21	28
	TOTAL EXITS	70	80	**87**	**98**	**105**	**140**
	TOTAL ENTRANTS LESS EXITS	94	84	***105***	***78***	***60***	***15***
Education and training	New student intake	164	164	117	130	139	181
	Continuing students	491	491	487	451	433	499
	Total enrolment at start of year	654	654	604	580	572	680
	% change in new intake	n/a	n/a	-28.6%	11.1%	7.3%	1.2%
	Graduates	164	164	151	145	143	170
	Pre-service training loss	3	3	2	3	3	4
	Continuing students	487	487	451	433	426	507

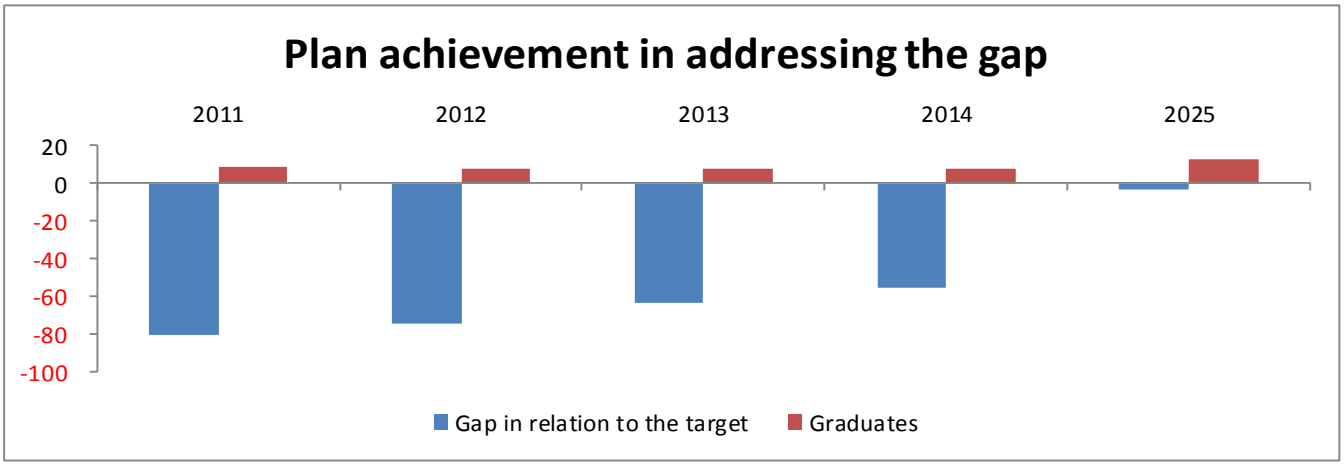


Medicine: Emergency

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	50	
Gap in 2011 based on assessment	-80	
Current staff to population ratio (per 1,000)	0.00	
Target staff to population ratio (per 1,000)	0.02	
Available professionals for national need	25	
Total entrants	9	
Total exits	2	
Total entrants less exists	7	
Enrolled students	36	
Graduates	9	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	17	25	32	43	52	119
	Professionals: end of year	25	32	43	52	60	129
	annual growth: start of year	n/a	n/a	***28.4%***	***36.2%***	***20.6%***	***7.3%***
	Gap in relation to the target	-87	-80	**-74**	**-64**	**-56**	**-3**
	Positions at start of year: target	104	105	106	107	108	122
	Pop per professional: actual (per 10,000)	0.00	0.00	0.01	0.01	0.01	0.02
	Pop per professional: target (per 10,000)	0.02	0.02	0.02	0.02	0.02	0.02
Entrants and exists	Intake from training	9	9	9	8	7	12
	Intake - other (require plan)	0	0	78			
	TOTAL ENTRANTS	9	9	**15**	**14**	**13**	**22**
	Exit - other (require plan)	1	1	1	2	2	5
	Exit - Retire at 65 (expected)	1	1	1	2	2	5
	Exit - death/invalidity/etc (expected)	0	0	1	1	1	2
	TOTAL EXITS	2	2	**3**	**5**	**5**	**12**
	TOTAL ENTRANTS LESS EXITS	7	7	***11***	***9***	***8***	***10***
Education and training	New student intake	9	9	5	6	7	16
	Continuing students	27	27	27	24	22	37
	Total enrolment at start of year	36	36	32	30	30	52
	% change in new intake	n/a	n/a	-46.6%	29.9%	17.2%	6.8%
	Graduates	9	9	8	7	7	13
	Pre-service training loss	0	0	0	0	0	0
	Continuing students	27	27	24	22	22	39

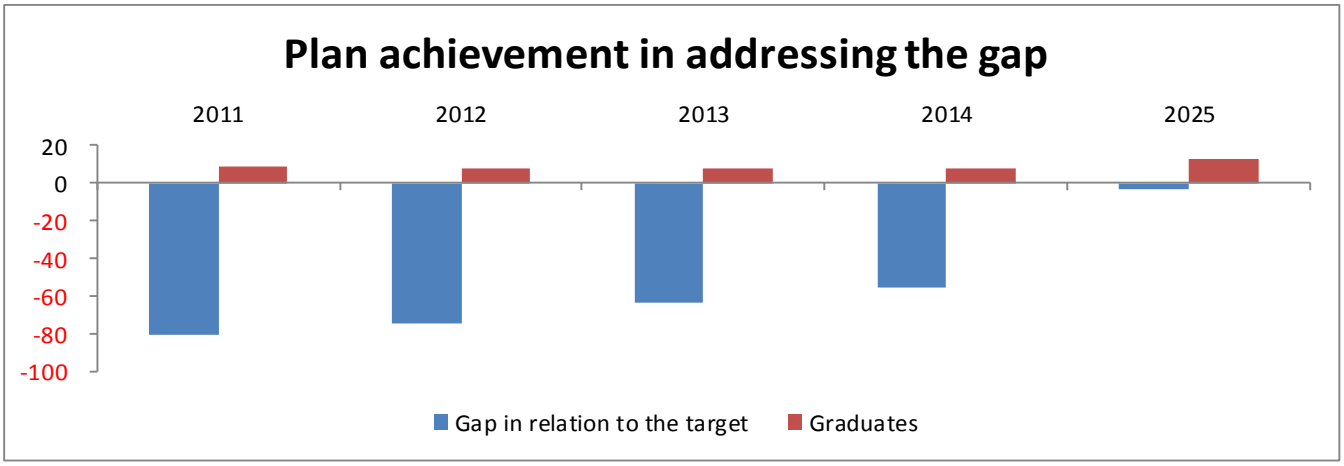


Medicine: Family

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	15	
Gap in 2011 based on assessment	-80	
Current staff to population ratio (per 1,000)	0.00	
Target staff to population ratio (per 1,000)	0.02	
Available professionals for national need	25	
Total entrants	9	
Total exits	2	
Total entrants less exists	7	
Enrolled students	36	
Graduates	9	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	17	25	32	43	52	119
	Professionals: end of year	25	32	43	52	60	129
	annual growth: start of year	n/a	n/a	***28.4%***	***36.2%***	***20.6%***	***7.3%***
	Gap in relation to the target	-87	-80	**-74**	**-64**	**-56**	**-3**
	Positions at start of year: target	104	105	106	107	108	122
	Pop per professional: actual (per 10,000)	0.00	0.00	0.01	0.01	0.01	0.02
	Pop per professional: target (per 10,000)	0.02	0.02	0.02	0.02	0.02	0.02
Entrants and exists	Intake from training	9	9	9	8	7	12
	Intake - other (require plan)	0	0	78			
	TOTAL ENTRANTS	9	9	**15**	**14**	**13**	**22**
	Exit - other (require plan)	1	1	1	2	2	5
	Exit - Retire at 65 (expected)	1	1	1	2	2	5
	Exit - death/invalidity/etc (expected)	0	0	1	1	1	2
	TOTAL EXITS	2	2	**3**	**5**	**5**	**12**
	TOTAL ENTRANTS LESS EXITS	7	7	***11***	***9***	***8***	***10***
Education and training	New student intake	9	9	5	6	7	16
	Continuing students	27	27	27	24	22	37
	Total enrolment at start of year	36	36	32	30	30	52
	% change in new intake	n/a	n/a	-46.6%	29.9%	17.2%	6.8%
	Graduates	9	9	8	7	7	13
	Pre-service training loss	0	0	0	0	0	0
	Continuing students	27	27	24	22	22	39

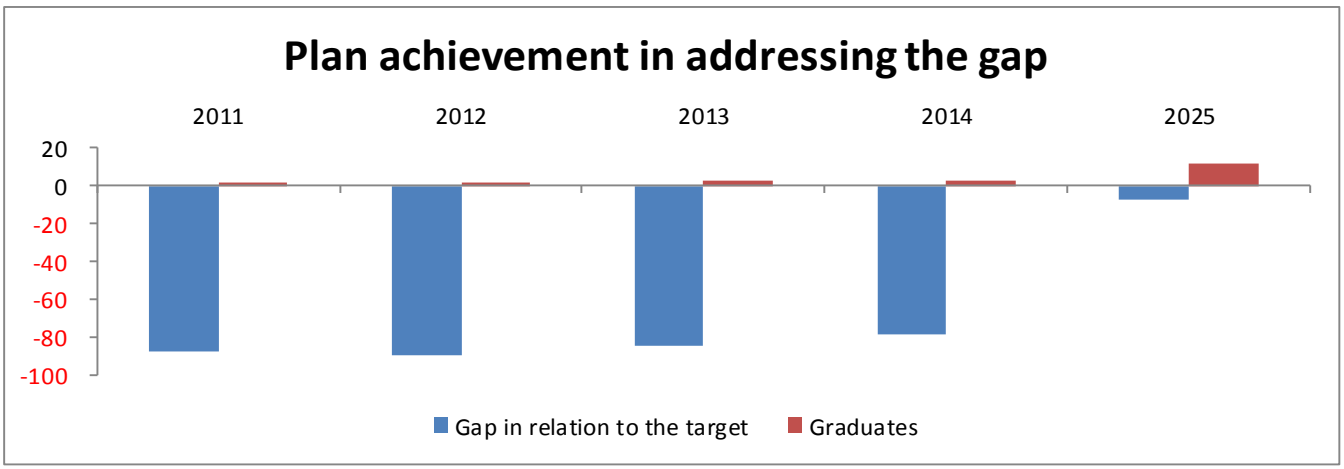


Medicine: Geriatric

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	50	
Gap in 2011 based on assessment	-88	
Current staff to population ratio (per 1,000)	0.00	
Target staff to population ratio (per 1,000)	0.02	
Available professionals for national need	17	
Total entrants	1	
Total exits	2	
Total entrants less exists	0	
Enrolled students	5	
Graduates	1	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	17	17	16	22	29	114
	Professionals: end of year	17	16	22	29	35	131
	annual growth: start of year	n/a	n/a	*-2.5%*	*35.7%*	*29.8%*	*11.2%*
	Gap in relation to the target	-87	-88	-90	-85	-79	-8
	Positions at start of year: target	104	105	106	107	108	122
	Pop per professional: actual (per 10,000)	0.00	0.00	0.00	0.00	0.01	0.02
	Pop per professional: target (per 10,000)	0.02	0.02	0.02	0.02	0.02	0.02
Entrants and exists	Intake from training	1	1	1	2	2	10
	Intake - other (require plan)	0	0	124			
	TOTAL ENTRANTS	1	1	8	9	9	28
	Exit - other (require plan)	1	1	1	1	1	5
	Exit - Retire at 65 (expected)	1	1	1	1	1	5
	Exit - death/invalidity/etc (expected)	0	0	0	0	1	2
	TOTAL EXITS	2	2	2	2	3	12
	TOTAL ENTRANTS LESS EXITS	-0	-0	*6*	*7*	*6*	*16*
Education and training	New student intake	1	1	3	4	5	15
	Continuing students	4	4	4	5	6	31
	Total enrolment at start of year	5	5	7	9	11	46
	% change in new intake	n/a	n/a	138.1%	26.2%	21.6%	10.4%
	Graduates	1	1	2	2	3	12
	Pre-service training loss	0	0	0	0	0	0
	Continuing students	4	4	5	6	8	34

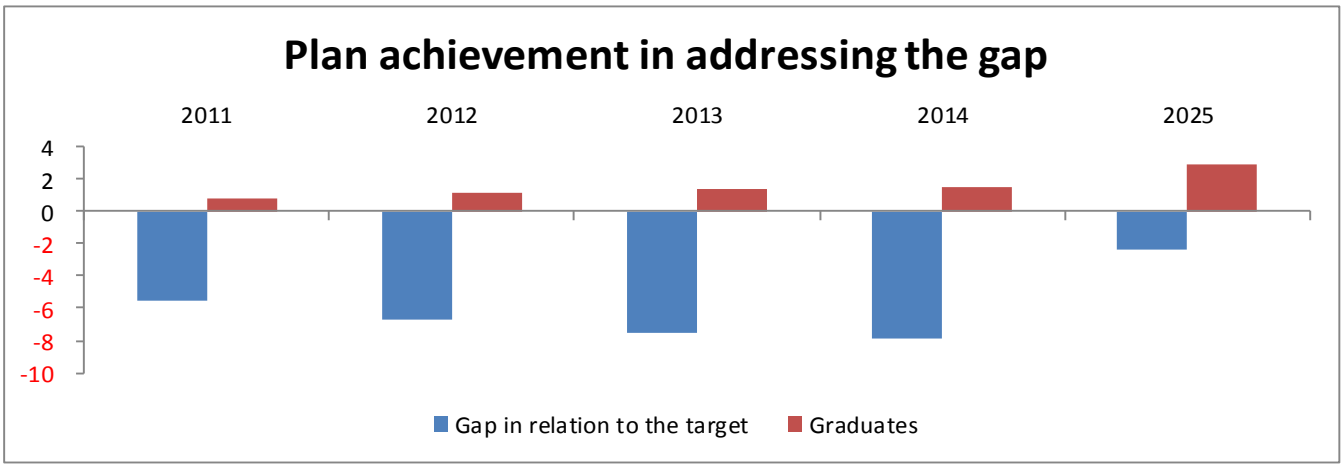


Neonatology

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	2	
Gap in 2011 based on assessment	-5	
Current staff to population ratio (per 1,000)	0.00	
Target staff to population ratio (per 1,000)	0.01	
Available professionals for national need	20	
Total entrants	1	
Total exits	2	
Total entrants less exists	-1	
Enrolled students	5	
Graduates	1	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	21	20	19	19	19	28
	Professionals: end of year	20	19	19	19	19	30
	annual growth: start of year	n/a	n/a	*-4.8%*	*-2.8%*	*-0.6%*	*4.3%*
	Gap in relation to the target	-4	-5	-7	-7	-8	-2
	Positions at start of year: target	25	26	26	26	26	30
	Pop per professional: actual (per 10,000)	0.00	0.00	0.00	0.00	0.00	0.01
	Pop per professional: target (per 10,000)	0.01	0.01	0.01	0.01	0.01	0.01
Entrants and exists	Intake from training	1	1	1	1	1	3
	Intake - other (require plan)	0	0	14			
	TOTAL ENTRANTS	1	1	**1**	**2**	**2**	**6**
	Exit - other (require plan)	1	1	1	1	1	1
	Exit - Retire at 65 (expected)	1	1	1	1	1	1
	Exit - death/invalidity/etc (expected)	0	0	0	0	0	1
	TOTAL EXITS	2	2	**2**	**2**	**2**	**3**
	TOTAL ENTRANTS LESS EXITS	-1	-1	*-1*	*-0*	*0*	*3*
Education and training	New student intake	1	1	3	3	2	4
	Continuing students	4	4	4	6	7	14
	Total enrolment at start of year	5	5	7	8	9	18
	% change in new intake	n/a	n/a	207.5%	-2.3%	-0.5%	4.1%
	Graduates	1	1	1	1	2	3
	Pre-service training loss	0	0	0	0	0	0
	Continuing students	4	4	6	7	8	15

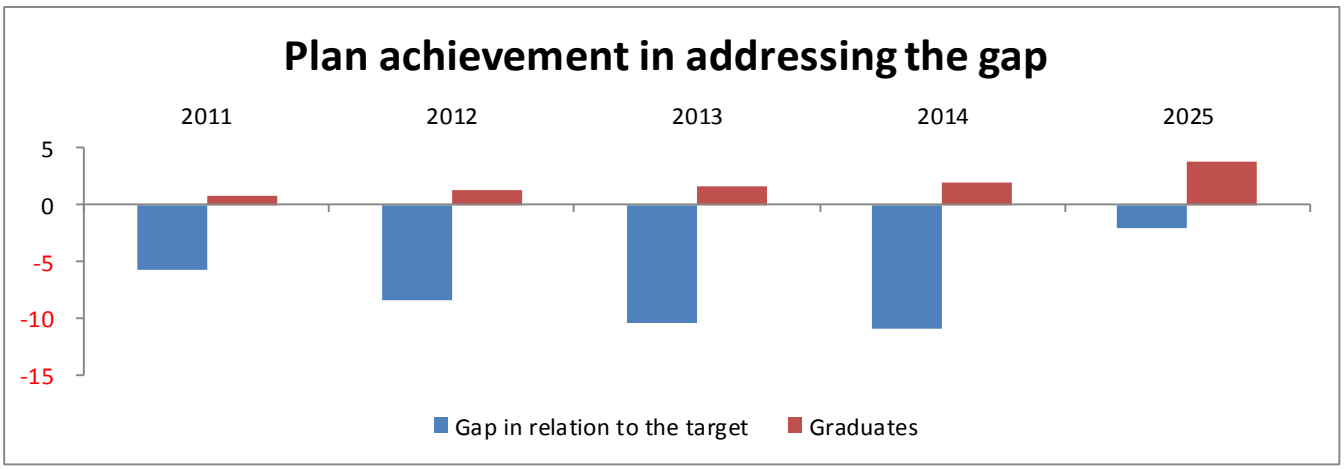


Nephrology

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	1	
Gap in 2011 based on assessment	-6	
Current staff to population ratio (per 1,000)	0.01	
Target staff to population ratio (per 1,000)	0.01	
Available professionals for national need	28	
Total entrants	1	
Total exits	3	
Total entrants less exists	-2	
Enrolled students	5	
Graduates	1	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	31	28	26	24	24	38
	Professionals: end of year	28	26	24	24	25	41
	annual growth: start of year	n/a	n/a	*-8.1%*	*-6.9%*	*-0.2%*	*8.3%*
	Gap in relation to the target	-3	-6	-8	-11	-11	-2
	Positions at start of year: target	34	34	35	35	35	40
	Pop per professional: actual (per 10,000)	0.01	0.01	0.01	0.01	0.01	0.01
	Pop per professional: target (per 10,000)	0.01	0.01	0.01	0.01	0.01	0.01
Entrants and exists	Intake from training	1	1	1	1	2	4
	Intake - other (require plan)	0	0	23			
	TOTAL ENTRANTS	1	1	**1**	**2**	**2**	**8**
	Exit - other (require plan)	1	1	1	1	1	2
	Exit - Retire at 65 (expected)	1	1	1	1	1	2
	Exit - death/invalidity/etc (expected)	1	1	1	0	0	1
	TOTAL EXITS	3	3	**3**	**2**	**2**	**5**
	TOTAL ENTRANTS LESS EXITS	-2	-2	*-2*	*-0*	*0*	*3*
Education and training	New student intake	1	1	3	3	3	5
	Continuing students	4	4	4	6	8	18
	Total enrolment at start of year	5	5	8	10	11	23
	% change in new intake	n/a	n/a	317.5%	-5.9%	-0.1%	7.7%
	Graduates	1	1	1	2	2	4
	Pre-service training loss	0	0	0	0	0	0
	Continuing students	4	4	6	8	9	19

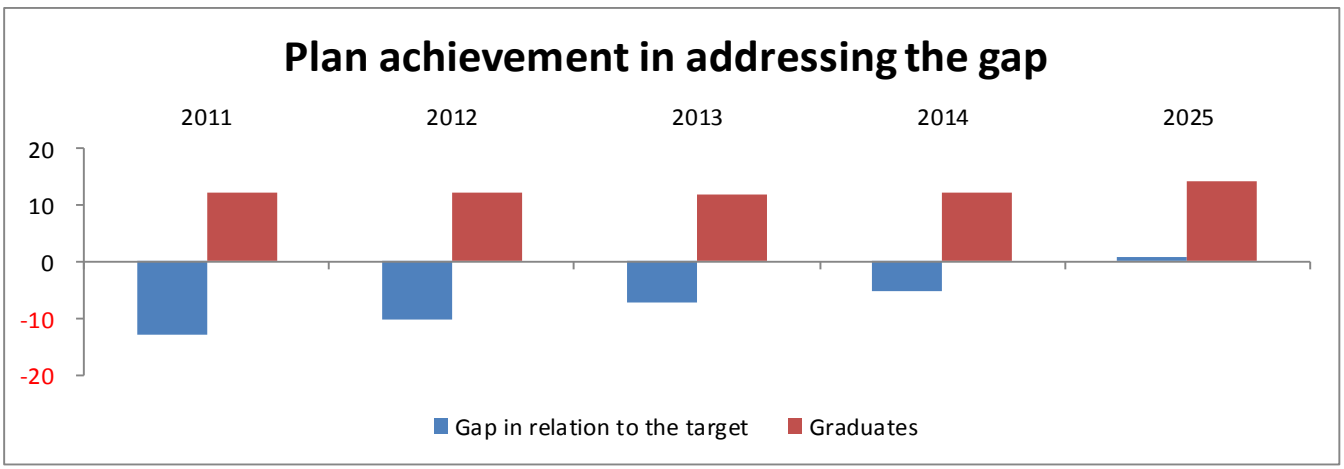


Neurology

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	2	
Gap in 2011 based on assessment	-13	
Current staff to population ratio (per 1,000)	0.02	
Target staff to population ratio (per 1,000)	0.02	
Available professionals for national need	85	
Total entrants	12	
Total exits	8	
Total entrants less exists	4	
Enrolled students	49	
Graduates	12	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	81	85	89	93	96	115
	Professionals: end of year	85	89	93	96	98	115
	annual growth: start of year	n/a	n/a	***4.5%***	***4.1%***	***3.4%***	***0.4%***
	Gap in relation to the target	-16	-13	**-10**	**-7**	**-5**	**1**
	Positions at start of year: target	97	98	99	100	101	114
	Pop per professional: actual (per 10,000)	0.02	0.02	0.02	0.02	0.02	0.02
	Pop per professional: target (per 10,000)	0.02	0.02	0.02	0.02	0.02	0.02
Entrants and exists	Intake from training	12	12	12	12	12	14
	Intake - other (require plan)	0	0	-6			
	TOTAL ENTRANTS	12	12	**13**	**13**	**13**	**12**
	Exit - other (require plan)	3	3	4	4	4	5
	Exit - Retire at 65 (expected)	3	3	4	4	4	5
	Exit - death/invalidity/etc (expected)	2	2	2	2	2	2
	TOTAL EXITS	8	8	**10**	**10**	**10**	**12**
	TOTAL ENTRANTS LESS EXITS	4	4	***4***	***3***	***3***	***0***
Education and training	New student intake	12	12	12	12	12	15
	Continuing students	37	37	37	36	36	42
	Total enrolment at start of year	49	49	48	48	48	57
	% change in new intake	n/a	n/a	-4.9%	3.9%	3.2%	0.5%
	Graduates	12	12	12	12	12	14
	Pre-service training loss	0	0	0	0	0	0
	Continuing students	37	37	36	36	36	42

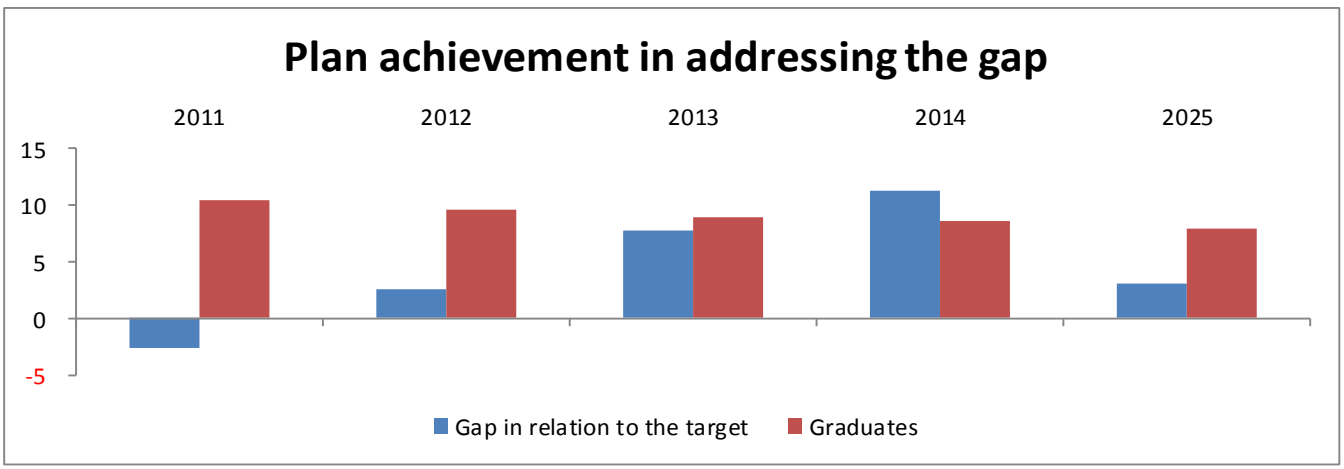


Nuclear Medicine

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	2	
Gap in 2011 based on assessment	-3	
Current staff to population ratio (per 1,000)	0.01	
Target staff to population ratio (per 1,000)	0.01	
Available professionals for national need	46	
Total entrants	11	
Total exits	5	
Total entrants less exists	6	
Enrolled students	42	
Graduates	11	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	41	46	52	58	62	60
	Professionals: end of year	46	52	58	62	64	57
	annual growth: start of year	n/a	n/a	***12.2%***	***10.8%***	***7.0%***	***-2.2%***
	Gap in relation to the target	-8	-3	**3**	**8**	**11**	**3**
	Positions at start of year: target	49	49	49	50	50	57
	Pop per professional: actual (per 10,000)	0.01	0.01	0.01	0.01	0.01	0.01
	Pop per professional: target (per 10,000)	0.01	0.01	0.01	0.01	0.01	0.01
Entrants and exists	Intake from training	11	11	11	10	9	8
	Intake - other (require plan)	0	0	-29			
	TOTAL ENTRANTS	11	11	**11**	**9**	**8**	**3**
	Exit - other (require plan)	2	2	2	2	2	2
	Exit - Retire at 65 (expected)	2	2	2	2	2	2
	Exit - death/invalidity/etc (expected)	1	1	1	1	1	1
	TOTAL EXITS	5	5	**5**	**5**	**5**	**5**
	TOTAL ENTRANTS LESS EXITS	6	6	***6***	***4***	***3***	***-3***
Education and training	New student intake	11	11	7	7	8	8
	Continuing students	32	32	31	28	27	24
	Total enrolment at start of year	42	42	38	36	35	32
	% change in new intake	n/a	n/a	-35.8%	10.0%	6.5%	-1.9%
	Graduates	11	11	10	9	9	8
	Pre-service training loss	0	0	0	0	0	0
	Continuing students	31	31	28	27	26	24

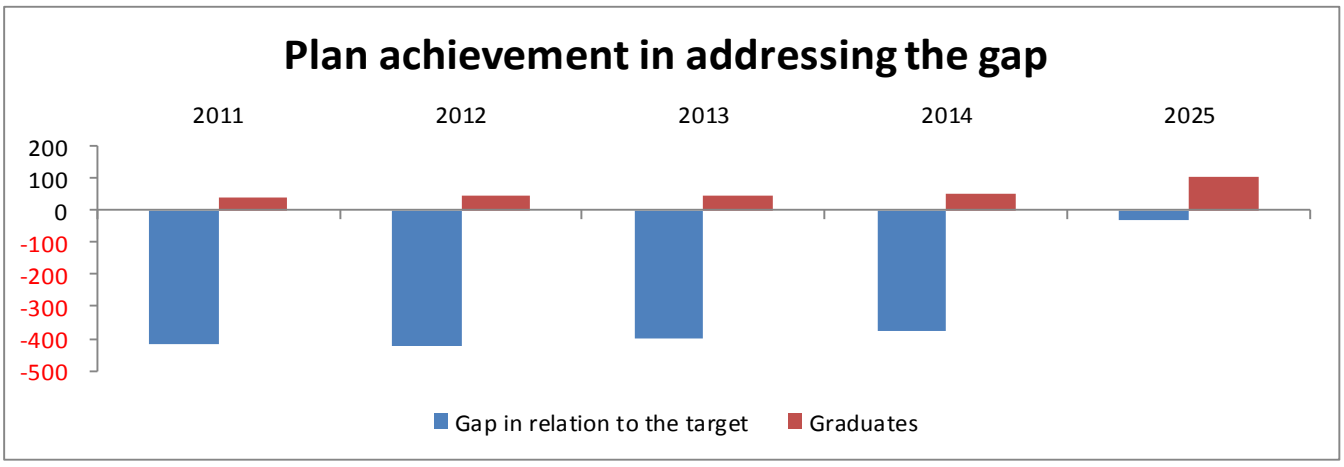


Obstetrics and Gynaecology

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	10	
Gap in 2011 based on assessment	-416	
Current staff to population ratio (per 1,000)	0.08	
Target staff to population ratio (per 1,000)	0.17	
Available professionals for national need	409	
Total entrants	40	
Total exits	40	
Total entrants less exists	0	
Enrolled students	161	
Graduates	40	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	409	409	409	438	471	928
	Professionals: end of year	409	409	438	471	506	1 004
	annual growth: start of year	n/a	n/a	***0.0%***	***7.3%***	***7.4%***	***6.5%***
	Gap in relation to the target	-409	-416	**-424**	**-402**	**-377**	**-33**
	Positions at start of year: target	818	825	833	840	848	961
	Pop per professional: actual (per 10,000)	0.08	0.08	0.09	0.09	0.10	0.17
	Pop per professional: target (per 10,000)	0.17	0.17	0.17	0.17	0.17	0.17
Entrants and exists	Intake from training	40	40	40	44	48	97
	Intake - other (require plan)	0	0	560			
	TOTAL ENTRANTS	40	40	**70**	**77**	**82**	**169**
	Exit - other (require plan)	16	16	16	18	19	37
	Exit - Retire at 65 (expected)	16	16	16	18	19	37
	Exit - death/invalidity/etc (expected)	8	8	8	9	9	19
	TOTAL EXITS	40	40	**40**	**45**	**47**	**93**
	TOTAL ENTRANTS LESS EXITS	-0	-0	***30***	***32***	***35***	***76***
Education and training	New student intake	40	40	57	61	65	121
	Continuing students	121	121	120	132	143	287
	Total enrolment at start of year	161	161	177	193	208	408
	% change in new intake	n/a	n/a	41.8%	6.9%	6.5%	6.1%
	Graduates	40	40	44	48	52	102
	Pre-service training loss	1	1	1	1	1	2
	Continuing students	120	120	132	143	155	304

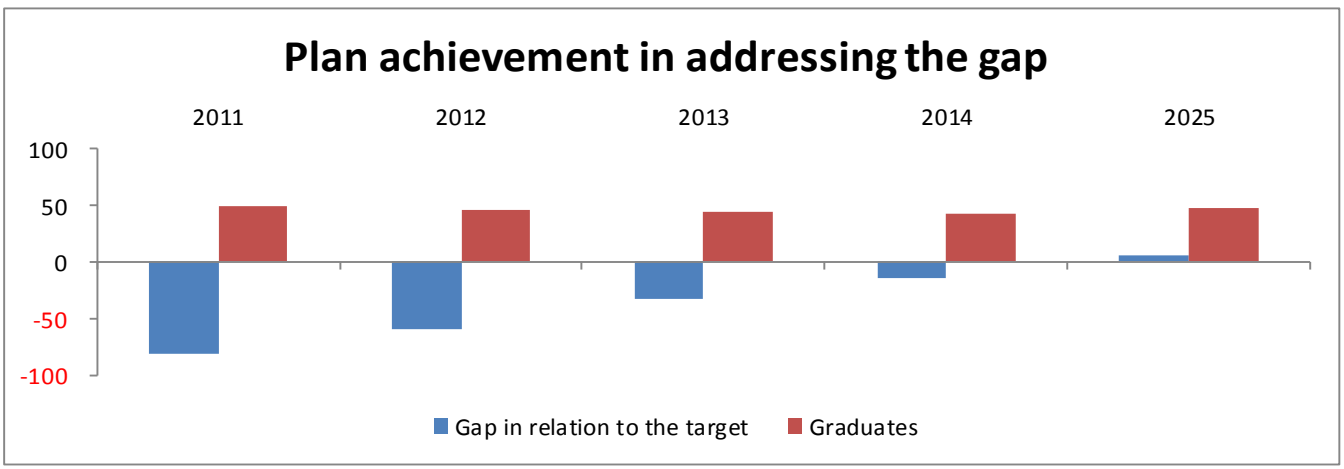


Occupational Health

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	5	
Gap in 2011 based on assessment	-82	
Current staff to population ratio (per 1,000)	0.04	
Target staff to population ratio (per 1,000)	0.07	
Available professionals for national need	243	
Total entrants	50	
Total exits	25	
Total entrants less exists	25	
Enrolled students	200	
Graduates	50	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	214	243	268	297	318	382
	Professionals: end of year	243	268	297	318	333	380
	annual growth: start of year	n/a	n/a	***10.4%***	***10.9%***	***7.0%***	***0.0%***
	Gap in relation to the target	-107	-82	**-59**	**-33**	**-15**	**5**
	Positions at start of year: target	321	324	327	330	333	377
	Pop per professional: actual (per 10,000)	0.04	0.04	0.06	0.06	0.07	0.07
	Pop per professional: target (per 10,000)	0.07	0.07	0.07	0.07	0.07	0.07
Entrants and exists	Intake from training	50	50	50	46	44	47
	Intake - other (require plan)	0	0	-31			
	TOTAL ENTRANTS	50	50	**56**	**51**	**47**	**36**
	Exit - other (require plan)	9	10	11	12	13	15
	Exit - Retire at 65 (expected)	9	10	11	12	13	15
	Exit - death/invalidity/etc (expected)	4	5	5	6	6	8
	TOTAL EXITS	22	25	**27**	**30**	**32**	**38**
	TOTAL ENTRANTS LESS EXITS	28	25	***29***	***21***	***15***	***-3***
Education and training	New student intake	50	50	35	39	41	50
	Continuing students	150	150	149	138	132	141
	Total enrolment at start of year	200	200	184	177	173	191
	% change in new intake	n/a	n/a	-29.3%	10.1%	6.5%	0.1%
	Graduates	50	50	46	44	43	48
	Pre-service training loss	1	1	1	1	1	1
	Continuing students	149	149	138	132	129	142

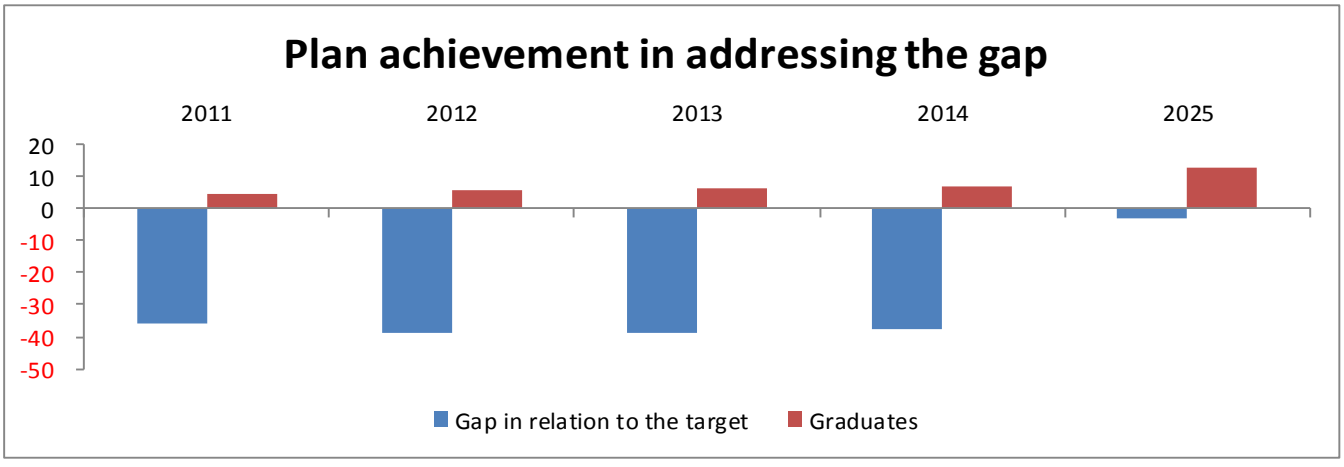


Oncology: Medical

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	5	
Gap in 2011 based on assessment	-36	
Current staff to population ratio (per 1,000)	0.01	
Target staff to population ratio (per 1,000)	0.02	
Available professionals for national need	65	
Total entrants	5	
Total exits	7	
Total entrants less exists	-2	
Enrolled students	19	
Graduates	5	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	67	65	63	64	66	114
	Professionals: end of year	65	63	64	66	69	123
	annual growth: start of year	n/a	n/a	*-2.8%*	*1.3%*	*3.3%*	*6.4%*
	Gap in relation to the target	-33	-36	-39	-39	-38	-3
	Positions at start of year: target	100	101	102	103	103	117
	Pop per professional: actual (per 10,000)	0.01	0.01	0.01	0.01	0.01	0.02
	Pop per professional: target (per 10,000)	0.02	0.02	0.02	0.02	0.02	0.02
Entrants and exists	Intake from training	5	5	5	6	6	12
	Intake - other (require plan)	0	0	57			
	TOTAL ENTRANTS	5	5	7	9	10	20
	Exit - other (require plan)	3	3	3	3	3	5
	Exit - Retire at 65 (expected)	3	3	3	3	3	5
	Exit - death/invalidity/etc (expected)	1	1	1	1	1	2
	TOTAL EXITS	7	7	7	7	7	12
	TOTAL ENTRANTS LESS EXITS	-2	-2	*1*	*2*	*3*	*8*
Education and training	New student intake	5	5	9	9	9	15
	Continuing students	14	14	14	17	19	36
	Total enrolment at start of year	19	19	23	26	28	51
	% change in new intake	n/a	n/a	79.5%	1.6%	3.0%	6.1%
	Graduates	5	5	6	6	7	13
	Pre-service training loss	0	0	0	0	0	0
	Continuing students	14	14	17	19	21	38

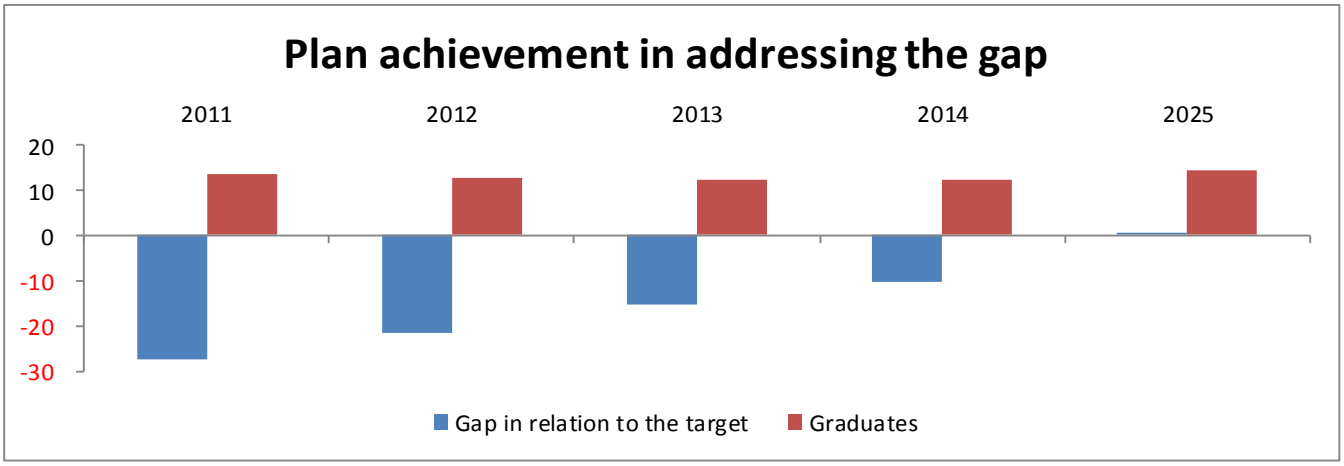


Oncology: Radiation

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	5	
Gap in 2011 based on assessment	-27	
Current staff to population ratio (per 1,000)	0.01	
Target staff to population ratio (per 1,000)	0.02	
Available professionals for national need	73	
Total entrants	14	
Total exits	7	
Total entrants less exists	7	
Enrolled students	54	
Graduates	14	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	67	73	80	87	93	118
	Professionals: end of year	73	80	87	93	97	119
	annual growth: start of year	n/a	n/a	***8.9%***	***9.1%***	***6.7%***	***0.8%***
	Gap in relation to the target	-33	-27	**-22**	**-15**	**-10**	**1**
	Positions at start of year: target	100	101	102	103	103	117
	Pop per professional: actual (per 10,000)	0.01	0.01	0.02	0.02	0.02	0.02
	Pop per professional: target (per 10,000)	0.02	0.02	0.02	0.02	0.02	0.02
Entrants and exists	Intake from training	14	14	14	13	12	14
	Intake - other (require plan)	0	0	1			
	TOTAL ENTRANTS	14	14	**15**	**14**	**14**	**12**
	Exit - other (require plan)	3	3	3	3	4	5
	Exit - Retire at 65 (expected)	3	3	3	3	4	5
	Exit - death/invalidity/etc (expected)	1	1	2	2	2	2
	TOTAL EXITS	7	7	**8**	**8**	**10**	**12**
	TOTAL ENTRANTS LESS EXITS	7	7	***7***	***6***	***4***	***1***
Education and training	New student intake	14	14	11	11	12	15
	Continuing students	41	41	40	38	37	43
	Total enrolment at start of year	54	54	51	49	49	58
	% change in new intake	n/a	n/a	-21.5%	8.4%	6.2%	0.8%
	Graduates	14	14	13	12	12	15
	Pre-service training loss	0	0	0	0	0	0
	Continuing students	40	40	38	37	37	43

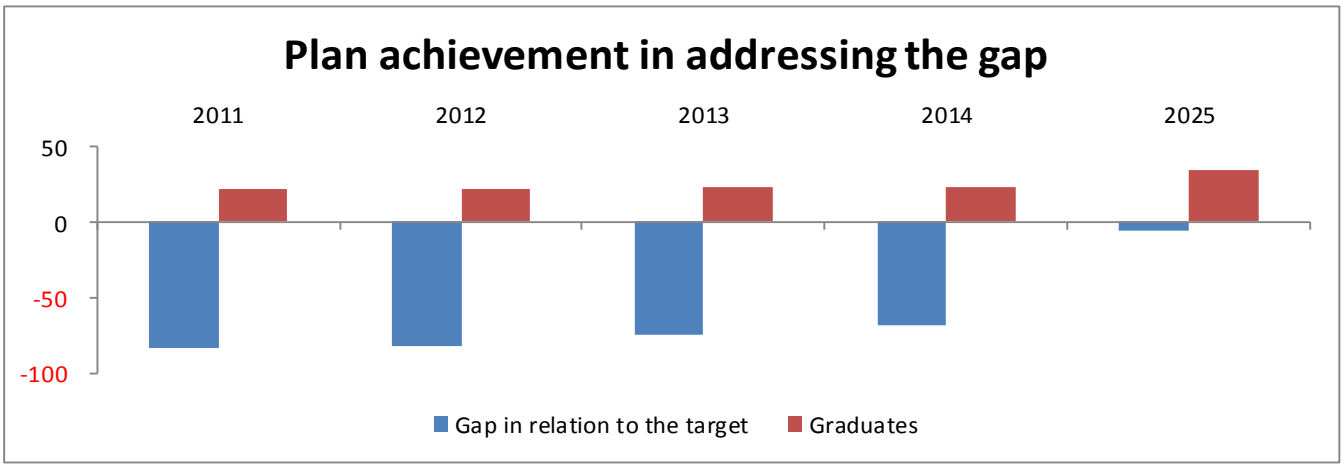


Ophthalmology

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	5	
Gap in 2011 based on assessment	-83	
Current staff to population ratio (per 1,000)	0.04	
Target staff to population ratio (per 1,000)	0.05	
Available professionals for national need	177	
Total entrants	22	
Total exits	18	
Total entrants less exists	4	
Enrolled students	87	
Graduates	22	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	172	177	180	190	199	298
	Professionals: end of year	177	180	190	199	208	310
	annual growth: start of year	n/a	n/a	***2.1%***	***5.3%***	***4.7%***	***3.1%***
	Gap in relation to the target	-86	-83	**-82**	**-75**	**-68**	**-5**
	Positions at start of year: target	258	260	262	265	267	303
	Pop per professional: actual (per 10,000)	0.04	0.04	0.04	0.04	0.04	0.06
	Pop per professional: target (per 10,000)	0.05	0.05	0.05	0.05	0.05	0.05
Entrants and exists	Intake from training	22	22	22	22	23	34
	Intake - other (require plan)	0	0	85			
	TOTAL ENTRANTS	22	22	**28**	**29**	**29**	**42**
	Exit - other (require plan)	7	7	7	8	8	12
	Exit - Retire at 65 (expected)	7	7	7	8	8	12
	Exit - death/invalidity/etc (expected)	3	4	4	4	4	6
	TOTAL EXITS	17	18	**18**	**20**	**20**	**30**
	TOTAL ENTRANTS LESS EXITS	5	4	***9***	***9***	***9***	***12***
Education and training	New student intake	22	22	24	25	27	39
	Continuing students	65	65	65	66	68	100
	Total enrolment at start of year	87	87	89	92	95	139
	% change in new intake	n/a	n/a	11.2%	5.0%	4.3%	3.0%
	Graduates	22	22	22	23	24	35
	Pre-service training loss	0	0	0	1	1	1
	Continuing students	65	65	66	68	71	104

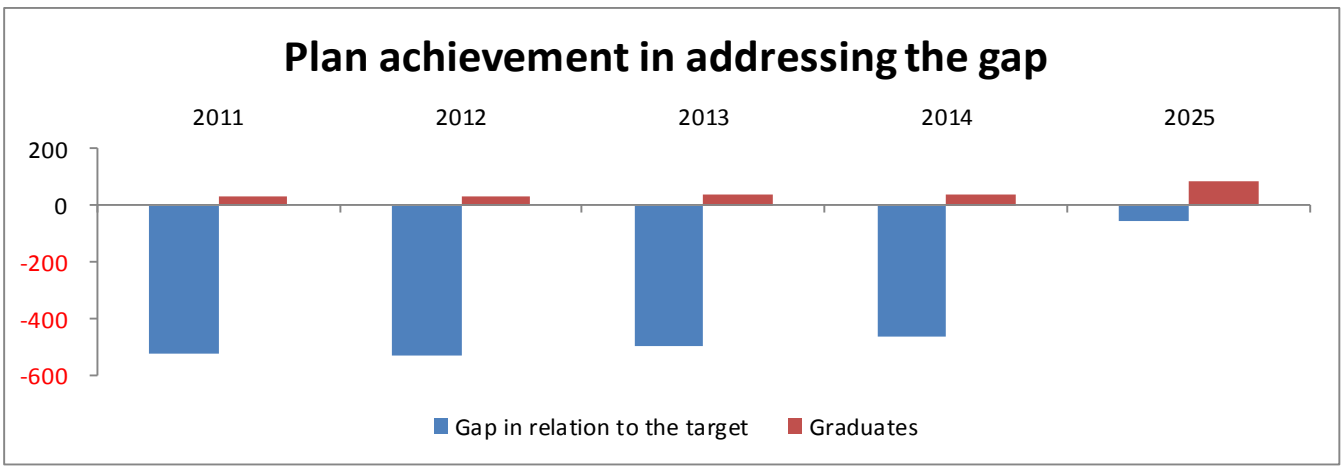


Orthopaedics

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	20	
Gap in 2011 based on assessment	-528	
Current staff to population ratio (per 1,000)	0.05	
Target staff to population ratio (per 1,000)	0.16	
Available professionals for national need	266	
Total entrants	29	
Total exits	27	
Total entrants less exists	3	
Enrolled students	146	
Graduates	29	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	262	266	269	309	351	871
	Professionals: end of year	266	269	309	351	391	973
	annual growth: start of year	n/a	n/a	***1.0%***	***15.0%***	***13.5%***	***8.7%***
	Gap in relation to the target	-525	-528	**-533**	**-500**	**-465**	**-54**
	Positions at start of year: target	787	794	801	809	816	925
	Pop per professional: actual (per 10,000)	0.05	0.05	0.06	0.06	0.07	0.16
	Pop per professional: target (per 10,000)	0.16	0.16	0.16	0.16	0.16	0.16
Entrants and exists	Intake from training	29	29	29	31	34	81
	Intake - other (require plan)	0	0	742			
	TOTAL ENTRANTS	29	29	**67**	**72**	**75**	**189**
	Exit - other (require plan)	10	11	11	12	14	35
	Exit - Retire at 65 (expected)	10	11	11	12	14	35
	Exit - death/invalidity/etc (expected)	5	5	5	6	7	17
	TOTAL EXITS	25	27	**27**	**30**	**35**	**87**
	TOTAL ENTRANTS LESS EXITS	4	3	***40***	***42***	***40***	***102***
Education and training	New student intake	29	29	40	45	50	114
	Continuing students	117	117	116	124	134	323
	Total enrolment at start of year	146	146	156	169	185	437
	% change in new intake	n/a	n/a	36.5%	13.2%	11.3%	8.1%
	Graduates	29	29	31	34	37	87
	Pre-service training loss	1	1	1	1	1	2
	Continuing students	116	116	124	134	147	347

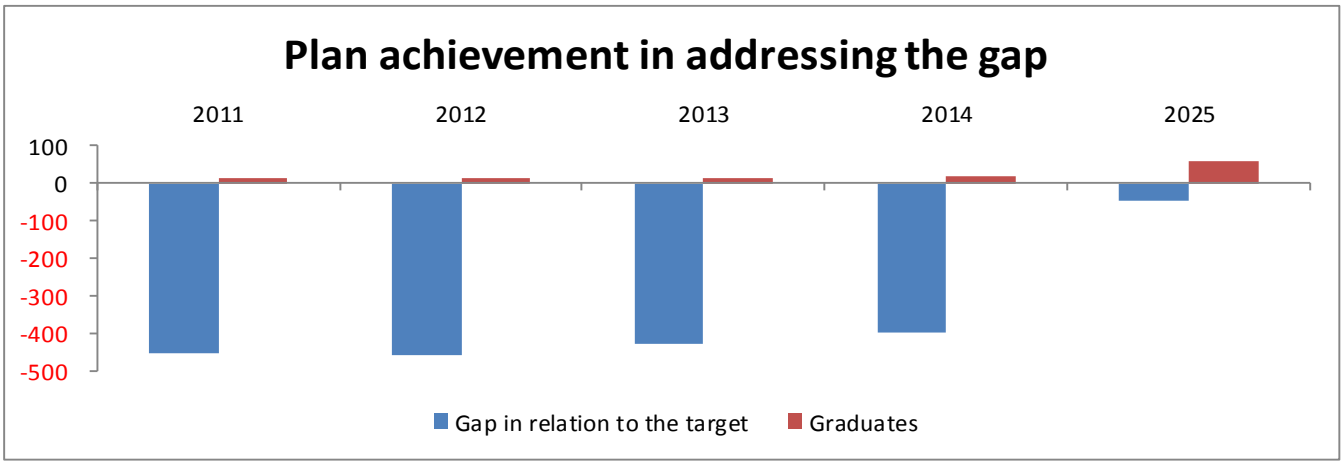


Otorhinolaryngology

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	50	
Gap in 2011 based on assessment	-456	
Current staff to population ratio (per 1,000)	0.02	
Target staff to population ratio (per 1,000)	0.11	
Available professionals for national need	93	
Total entrants	12	
Total exits	10	
Total entrants less exists	2	
Enrolled students	58	
Graduates	12	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	91	93	95	129	164	592
	Professionals: end of year	93	95	129	164	197	678
	annual growth: start of year	n/a	n/a	***2.0%***	***36.4%***	***26.9%***	***11.0%***
	Gap in relation to the target	-453	-456	**-459**	**-430**	**-400**	**-47**
	Positions at start of year: target	544	549	554	559	564	639
	Pop per professional: actual (per 10,000)	0.02	0.02	0.02	0.03	0.03	0.11
	Pop per professional: target (per 10,000)	0.11	0.11	0.11	0.11	0.11	0.11
Entrants and exists	Intake from training	12	12	12	13	14	51
	Intake - other (require plan)	0	0	647			
	TOTAL ENTRANTS	12	12	**44**	**48**	**50**	**145**
	Exit - other (require plan)	4	4	4	5	7	24
	Exit - Retire at 65 (expected)	4	4	4	5	7	24
	Exit - death/invalidity/etc (expected)	2	2	2	3	3	12
	TOTAL EXITS	10	10	**10**	**13**	**17**	**60**
	TOTAL ENTRANTS LESS EXITS	2	2	***34***	***35***	***33***	***86***
Education and training	New student intake	12	12	17	21	25	77
	Continuing students	46	46	46	50	56	203
	Total enrolment at start of year	58	58	63	71	82	280
	% change in new intake	n/a	n/a	42.7%	27.2%	20.0%	10.2%
	Graduates	12	12	13	14	16	56
	Pre-service training loss	0	0	0	0	1	2
	Continuing students	46	46	50	56	65	223

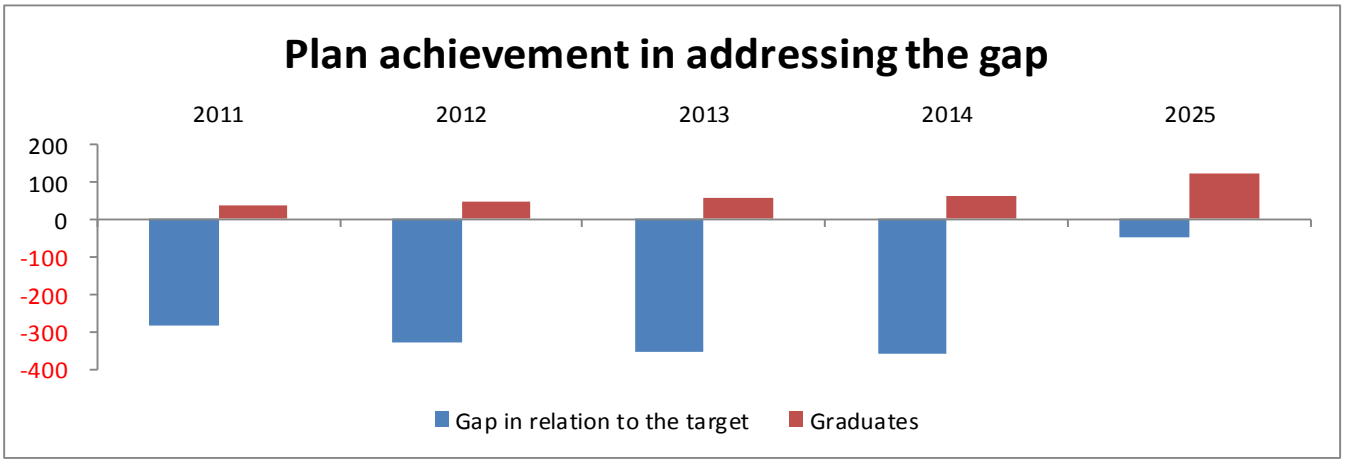


Paediatrics

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	3	
Gap in 2011 based on assessment	-284	
Current staff to population ratio (per 1,000)	0.16	
Target staff to population ratio (per 1,000)	0.21	
Available professionals for national need	738	
Total entrants	37	
Total exits	75	
Total entrants less exists	-38	
Enrolled students	184	
Graduates	37	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	779	738	700	687	693	1 143
	Professionals: end of year	738	700	687	693	709	1 236
	annual growth: start of year	n/a	n/a	*-5.1%*	*-1.8%*	*0.7%*	*6.1%*
	Gap in relation to the target	-234	-284	-331	-353	-358	-48
	Positions at start of year: target	1 013	1 022	1 032	1 041	1 050	1 191
	Pop per professional: actual (per 10,000)	0.16	0.16	0.15	0.14	0.14	0.22
	Pop per professional: target (per 10,000)	0.21	0.21	0.21	0.21	0.21	0.21
Entrants and exists	Intake from training	37	37	37	48	57	116
	Intake - other (require plan)	0	0	600			
	TOTAL ENTRANTS	37	37	**57**	**74**	**86**	**208**
	Exit - other (require plan)	31	30	28	27	28	46
	Exit - Retire at 65 (expected)	31	30	28	27	28	46
	Exit - death/invalidity/etc (expected)	16	15	14	14	14	23
	TOTAL EXITS	78	75	**70**	**68**	**70**	**115**
	TOTAL ENTRANTS LESS EXITS	-41	-38	***-13***	***5***	***16***	***93***
Education and training	New student intake	37	37	94	93	94	149
	Continuing students	147	147	146	191	225	461
	Total enrolment at start of year	184	184	241	283	319	610
	% change in new intake	n/a	n/a	155.8%	-1.3%	0.8%	5.7%
	Graduates	37	37	48	57	64	122
	Pre-service training loss	1	1	2	2	2	3
	Continuing students	146	146	191	225	253	485

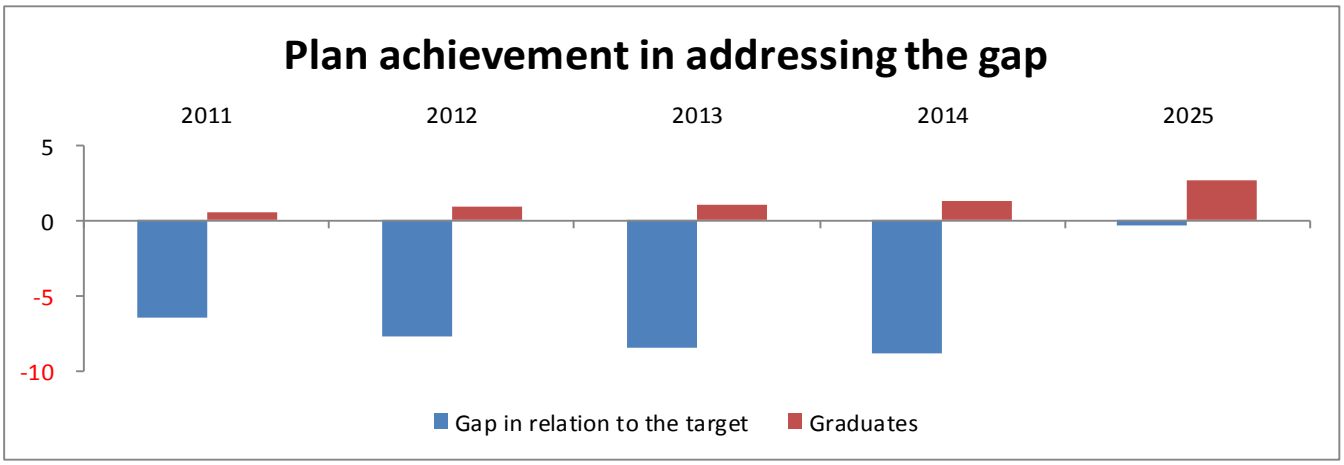


Paediatrics: Cardiology

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	3	
Gap in 2011 based on assessment	-7	
Current staff to population ratio (per 1,000)	0.00	
Target staff to population ratio (per 1,000)	0.00	
Available professionals for national need	16	
Total entrants	1	
Total exits	2	
Total entrants less exists	-1	
Enrolled students	3	
Graduates	1	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	17	16	15	15	15	26
	Professionals: end of year	16	15	15	15	15	27
	annual growth: start of year	n/a	n/a	*-6.5%*	*-3.6%*	*-0.7%*	*7.2%*
	Gap in relation to the target	-5	-7	-8	-9	-9	-0
	Positions at start of year: target	23	23	23	23	23	27
	Pop per professional: actual (per 10,000)	0.00	0.00	0.00	0.00	0.00	0.00
	Pop per professional: target (per 10,000)	0.00	0.00	0.00	0.00	0.00	0.00
Entrants and exists	Intake from training	1	1	1	1	1	3
	Intake - other (require plan)	0	0	14			
	TOTAL ENTRANTS	1	1	1	1	2	4
	Exit - other (require plan)	1	1	1	1	1	1
	Exit - Retire at 65 (expected)	1	1	1	1	1	1
	Exit - death/invalidity/etc (expected)	0	0	0	0	0	1
	TOTAL EXITS	2	2	2	2	2	3
	TOTAL ENTRANTS LESS EXITS	-1	-1	*-1*	*-0*	*0*	*1*
Education and training	New student intake	1	1	2	2	2	3
	Continuing students	2	2	2	4	4	10
	Total enrolment at start of year	3	3	4	6	6	13
	% change in new intake	n/a	n/a	241.7%	-2.8%	-0.5%	6.8%
	Graduates	1	1	1	1	1	3
	Pre-service training loss	0	0	0	0	0	0
	Continuing students	2	2	4	4	5	11

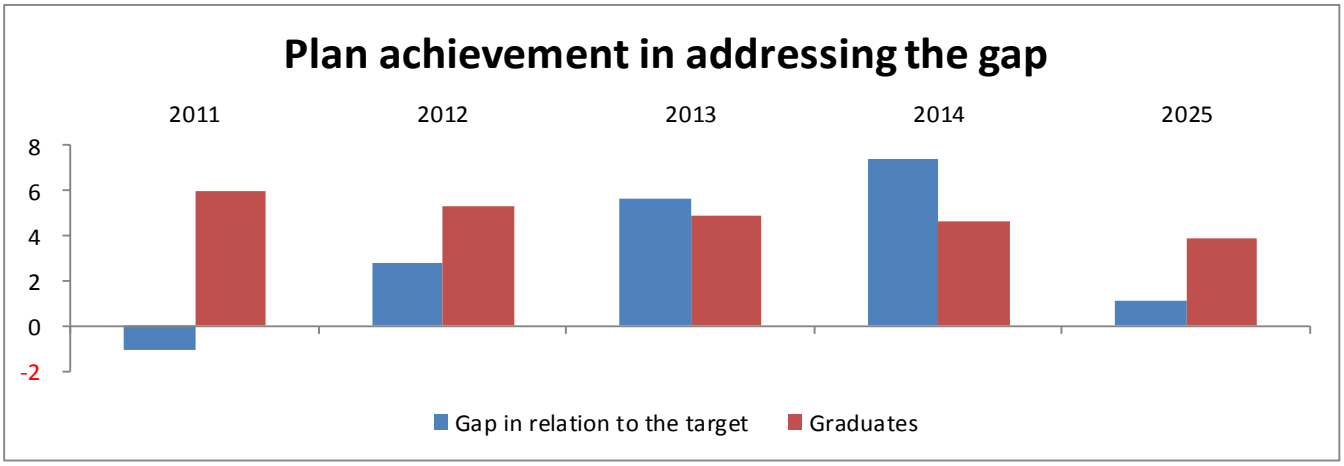


Paediatrics: Developmental

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	3	
Gap in 2011 based on assessment	-1	
Current staff to population ratio (per 1,000)	0.00	
Target staff to population ratio (per 1,000)	0.00	
Available professionals for national need	22	
Total entrants	6	
Total exits	2	
Total entrants less exists	4	
Enrolled students	24	
Graduates	6	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	17	22	26	29	31	28
	Professionals: end of year	22	26	29	31	32	25
	annual growth: start of year	n/a	n/a	***19.1%***	***11.8%***	***6.7%***	***-5.4%***
	Gap in relation to the target	-5	-1	**3**	**6**	**7**	**1**
	Positions at start of year: target	23	23	23	23	23	27
	Pop per professional: actual (per 10,000)	0.00	0.00	0.01	0.01	0.01	0.01
	Pop per professional: target (per 10,000)	0.00	0.00	0.00	0.00	0.00	0.00
Entrants and exists	Intake from training	6	6	6	5	5	4
	Intake - other (require plan)	0	0	-18			
	TOTAL ENTRANTS	6	6	**6**	**5**	**4**	**1**
	Exit - other (require plan)	1	1	1	1	1	1
	Exit - Retire at 65 (expected)	1	1	1	1	1	1
	Exit - death/invalidity/etc (expected)	0	0	1	1	1	1
	TOTAL EXITS	2	2	**3**	**3**	**3**	**3**
	TOTAL ENTRANTS LESS EXITS	4	4	***3***	***2***	***1***	***-2***
Education and training	New student intake	6	6	3	4	4	4
	Continuing students	18	18	18	16	15	12
	Total enrolment at start of year	24	24	21	20	19	15
	% change in new intake	n/a	n/a	-44.5%	11.0%	6.3%	-4.9%
	Graduates	6	6	5	5	5	4
	Pre-service training loss	0	0	0	0	0	0
	Continuing students	18	18	16	15	14	11

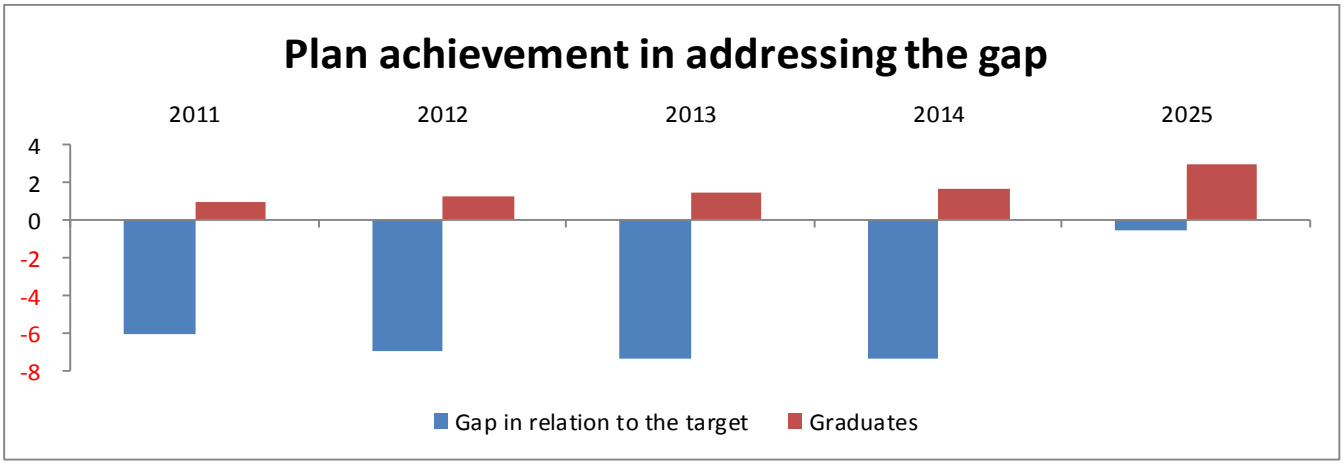


Paediatrics: Neurology

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	3	
Gap in 2011 based on assessment	-6	
Current staff to population ratio (per 1,000)	0.00	
Target staff to population ratio (per 1,000)	0.00	
Available professionals for national need	17	
Total entrants	1	
Total exits	2	
Total entrants less exists	-1	
Enrolled students	4	
Graduates	1	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	17	17	16	16	16	26
	Professionals: end of year	17	16	16	16	16	26
	annual growth: start of year	n/a	n/a	*-4.0%*	*-1.3%*	*1.2%*	*1.0%*
	Gap in relation to the target	-5	-6	-7	-7	-7	-1
	Positions at start of year: target	23	23	23	23	23	27
	Pop per professional: actual (per 10,000)	0.00	0.00	0.00	0.00	0.00	0.00
	Pop per professional: target (per 10,000)	0.00	0.00	0.00	0.00	0.00	0.00
Entrants and exists	Intake from training	1	1	1	1	1	3
	Intake - other (require plan)	0	0	9			
	TOTAL ENTRANTS	1	1	**1**	**2**	**2**	**3**
	Exit - other (require plan)	1	1	1	1	1	1
	Exit - Retire at 65 (expected)	1	1	1	1	1	1
	Exit - death/invalidity/etc (expected)	0	0	0	0	0	1
	TOTAL EXITS	2	2	**2**	**2**	**2**	**3**
	TOTAL ENTRANTS LESS EXITS	-1	-1	***-0***	***0***	***0***	***0***
Education and training	New student intake	1	1	2	2	2	3
	Continuing students	3	3	3	4	4	9
	Total enrolment at start of year	4	4	5	6	7	12
	% change in new intake	n/a	n/a	114.5%	-0.8%	1.1%	1.0%
	Graduates	1	1	1	1	2	3
	Pre-service training loss	0	0	0	0	0	0
	Continuing students	3	3	4	4	5	9

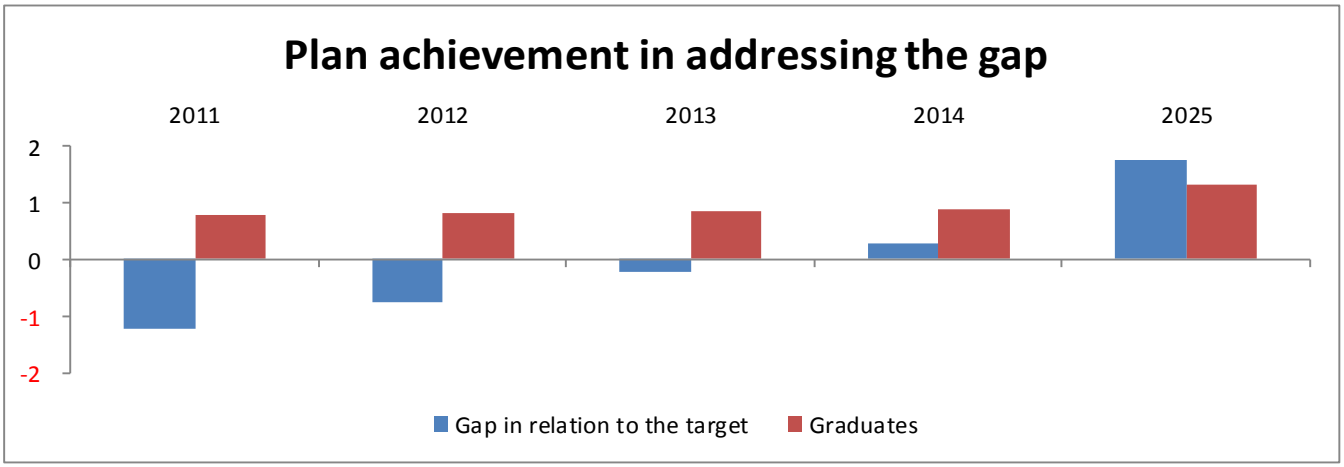


Paediatrics: Surgery

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	3	
Gap in 2011 based on assessment	-1	
Current staff to population ratio (per 1,000)	0.00	
Target staff to population ratio (per 1,000)	0.00	
Available professionals for national need	6	
Total entrants	1	
Total exits	0	
Total entrants less exists	1	
Enrolled students	4	
Graduates	1	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	6	6	7	8	8	11
	Professionals: end of year	6	7	8	8	9	9
	annual growth: start of year	n/a	n/a	*8.6%*	*8.9%*	*7.7%*	*-5.2%*
	Gap in relation to the target	-2	-1	-1	-0	0	2
	Positions at start of year: target	8	8	8	8	8	9
	Pop per professional: actual (per 10,000)	0.00	0.00	0.00	0.00	0.00	0.00
	Pop per professional: target (per 10,000)	0.00	0.00	0.00	0.00	0.00	0.00
Entrants and exists	Intake from training	1	1	1	1	1	1
	Intake - other (require plan)	0	0	-7			
	TOTAL ENTRANTS	1	1	1	1	1	-1
	Exit - other (require plan)	0	0	0	0	0	0
	Exit - Retire at 65 (expected)	0	0	0	0	0	0
	Exit - death/invalidity/etc (expected)	0	0	0	0	0	0
	TOTAL EXITS	0	0	0	0	0	0
	TOTAL ENTRANTS LESS EXITS	1	1	*1*	*1*	*1*	*-2*
Education and training	New student intake	1	1	1	1	1	1
	Continuing students	3	3	3	3	3	5
	Total enrolment at start of year	4	4	4	4	4	7
	% change in new intake	n/a	n/a	13.0%	8.3%	7.1%	-4.8%
	Graduates	1	1	1	1	1	1
	Pre-service training loss	0	0	0	0	0	0
	Continuing students	3	3	3	3	4	5

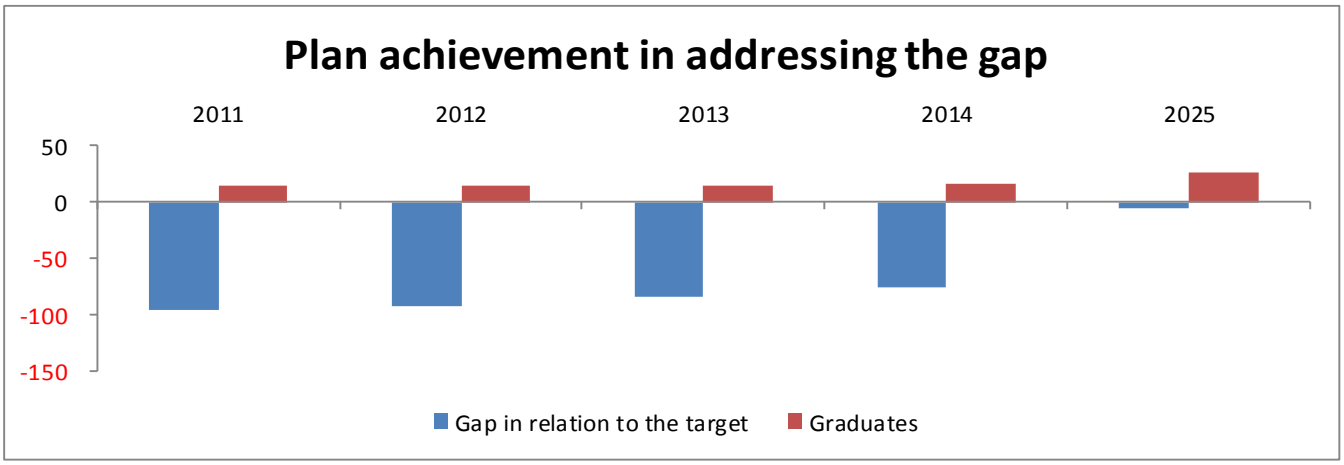


Pathology: Anatomical

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	10	
Gap in 2011 based on assessment	-96	
Current staff to population ratio (per 1,000)	0.02	
Target staff to population ratio (per 1,000)	0.04	
Available professionals for national need	103	
Total entrants	15	
Total exits	10	
Total entrants less exists	4	
Enrolled students	58	
Graduates	15	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	98	103	107	118	128	225
	Professionals: end of year	103	107	118	128	137	239
	annual growth: start of year	n/a	n/a	***4.3%***	***10.3%***	***8.4%***	***5.1%***
	Gap in relation to the target	-98	-96	**-93**	**-84**	**-76**	**-6**
	Positions at start of year: target	197	198	200	202	204	231
	Pop per professional: actual (per 10,000)	0.02	0.02	0.02	0.02	0.03	0.04
	Pop per professional: target (per 10,000)	0.04	0.04	0.04	0.04	0.04	0.04
Entrants and exists	Intake from training	15	15	15	15	15	24
	Intake - other (require plan)	0	0	105			
	TOTAL ENTRANTS	15	15	**21**	**22**	**22**	**37**
	Exit - other (require plan)	4	4	4	5	5	9
	Exit - Retire at 65 (expected)	4	4	4	5	5	9
	Exit - death/invalidity/etc (expected)	2	2	2	2	3	5
	TOTAL EXITS	10	10	**10**	**12**	**13**	**23**
	TOTAL ENTRANTS LESS EXITS	5	4	***11***	***10***	***9***	***14***
Education and training	New student intake	15	15	15	16	17	29
	Continuing students	44	44	43	43	44	73
	Total enrolment at start of year	58	58	58	59	62	102
	% change in new intake	n/a	n/a	2.1%	9.5%	7.5%	4.8%
	Graduates	15	15	15	15	15	25
	Pre-service training loss	0	0	0	0	0	1
	Continuing students	43	43	43	44	46	76

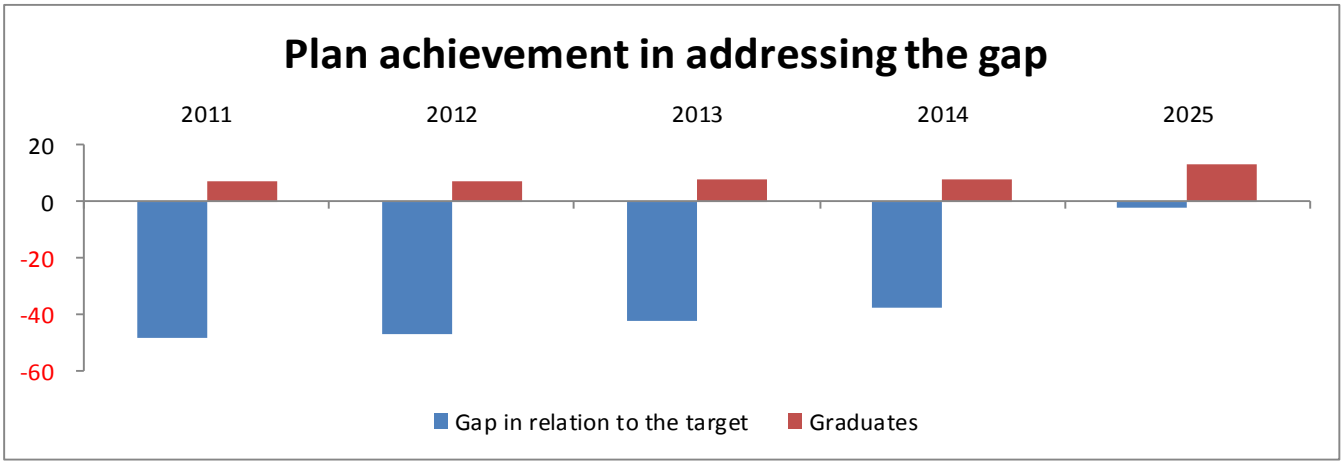


Pathology: Chemical

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	10	
Gap in 2011 based on assessment	-48	
Current staff to population ratio (per 1,000)	0.01	
Target staff to population ratio (per 1,000)	0.02	
Available professionals for national need	52	
Total entrants	7	
Total exits	5	
Total entrants less exists	2	
Enrolled students	29	
Graduates	7	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	50	52	54	60	65	115
	Professionals: end of year	52	54	60	65	70	122
	annual growth: start of year	n/a	n/a	***4.2%***	***10.2%***	***9.2%***	***5.7%***
	Gap in relation to the target	-50	-48	**-47**	**-42**	**-38**	**-2**
	Positions at start of year: target	100	100	101	102	103	117
	Pop per professional: actual (per 10,000)	0.01	0.01	0.01	0.01	0.01	0.02
	Pop per professional: target (per 10,000)	0.02	0.02	0.02	0.02	0.02	0.02
Entrants and exists	Intake from training	7	7	7	7	7	12
	Intake - other (require plan)	0	0	54			
	TOTAL ENTRANTS	7	7	**11**	**11**	**11**	**19**
	Exit - other (require plan)	2	2	2	2	3	5
	Exit - Retire at 65 (expected)	2	2	2	2	3	5
	Exit - death/invalidity/etc (expected)	1	1	1	1	1	2
	TOTAL EXITS	5	5	**5**	**5**	**7**	**12**
	TOTAL ENTRANTS LESS EXITS	2	2	***6***	***6***	***4***	***7***
Education and training	New student intake	7	7	7	8	9	15
	Continuing students	22	22	22	22	22	37
	Total enrolment at start of year	29	29	29	30	31	52
	% change in new intake	n/a	n/a	3.2%	9.5%	8.2%	5.4%
	Graduates	7	7	7	7	8	13
	Pre-service training loss	0	0	0	0	0	0
	Continuing students	22	22	22	22	23	38

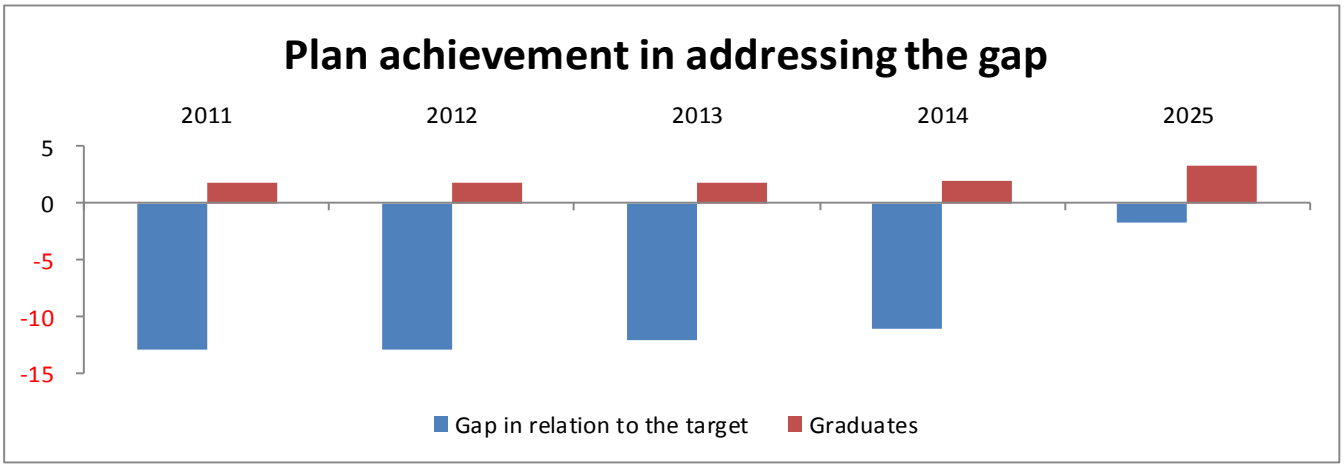


Pathology: Clinical

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	10	
Gap in 2011 based on assessment	-13	
Current staff to population ratio (per 1,000)	0.00	
Target staff to population ratio (per 1,000)	0.01	
Available professionals for national need	13	
Total entrants	2	
Total exits	2	
Total entrants less exists	0	
Enrolled students	7	
Graduates	2	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	13	13	13	15	16	29
	Professionals: end of year	13	13	15	16	17	32
	annual growth: start of year	n/a	n/a	***1.7%***	***8.5%***	***8.1%***	***5.5%***
	Gap in relation to the target	-13	-13	**-13**	**-12**	**-11**	**-2**
	Positions at start of year: target	26	26	27	27	27	31
	Pop per professional: actual (per 10,000)	0.00	0.00	0.00	0.00	0.00	0.01
	Pop per professional: target (per 10,000)	0.01	0.01	0.01	0.01	0.01	0.01
Entrants and exists	Intake from training	2	2	2	2	2	3
	Intake - other (require plan)	0	0	16			
	TOTAL ENTRANTS	2	2	**3**	**3**	**3**	**6**
	Exit - other (require plan)	1	1	1	1	1	1
	Exit - Retire at 65 (expected)	1	1	1	1	1	1
	Exit - death/invalidity/etc (expected)	0	0	0	0	0	1
	TOTAL EXITS	2	2	**2**	**2**	**2**	**3**
	TOTAL ENTRANTS LESS EXITS	0	0	***1***	***1***	***1***	***3***
Education and training	New student intake	2	2	2	2	2	4
	Continuing students	5	5	5	5	5	9
	Total enrolment at start of year	7	7	7	7	8	13
	% change in new intake	n/a	n/a	7.1%	7.9%	7.2%	5.2%
	Graduates	2	2	2	2	2	3
	Pre-service training loss	0	0	0	0	0	0
	Continuing students	5	5	5	5	6	10

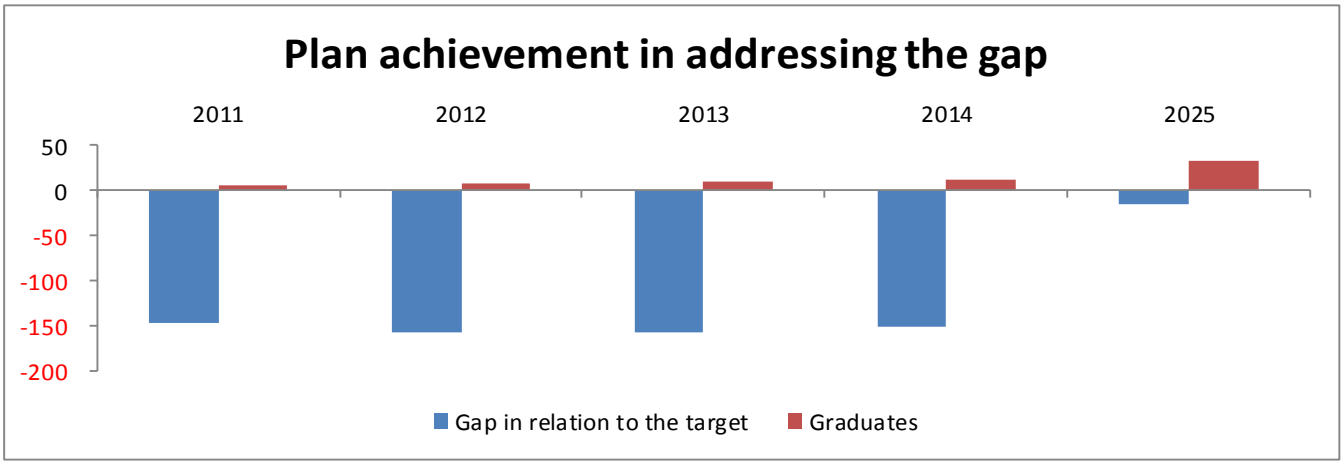


Pathology: Forensic

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	10	
Gap in 2011 based on assessment	-147	
Current staff to population ratio (per 1,000)	0.03	
Target staff to population ratio (per 1,000)	0.06	
Available professionals for national need	128	
Total entrants	5	
Total exits	13	
Total entrants less exists	-8	
Enrolled students	19	
Graduates	5	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	136	128	119	123	131	305
	Professionals: end of year	128	119	123	131	141	338
	annual growth: start of year	n/a	n/a	*-6.5%*	*2.9%*	*6.6%*	*8.4%*
	Gap in relation to the target	-136	-147	-158	-157	-152	-15
	Positions at start of year: target	272	275	277	280	282	320
	Pop per professional: actual (per 10,000)	0.03	0.03	0.03	0.03	0.03	0.06
	Pop per professional: target (per 10,000)	0.06	0.06	0.06	0.06	0.06	0.06
Entrants and exists	Intake from training	5	5	5	8	10	30
	Intake - other (require plan)	0	0	240			
	TOTAL ENTRANTS	5	5	**15**	**20**	**23**	**63**
	Exit - other (require plan)	5	5	5	5	5	12
	Exit - Retire at 65 (expected)	5	5	5	5	5	12
	Exit - death/invalidity/etc (expected)	3	3	2	2	3	6
	TOTAL EXITS	13	13	**12**	**12**	**13**	**30**
	TOTAL ENTRANTS LESS EXITS	-9	-8	***4***	***8***	***10***	***33***
Education and training	New student intake	5	5	17	18	19	40
	Continuing students	14	14	14	23	30	89
	Total enrolment at start of year	19	19	31	41	49	129
	% change in new intake	n/a	n/a	257.1%	3.3%	5.7%	7.8%
	Graduates	5	5	8	10	12	32
	Pre-service training loss	0	0	0	0	0	1
	Continuing students	14	14	23	30	36	96

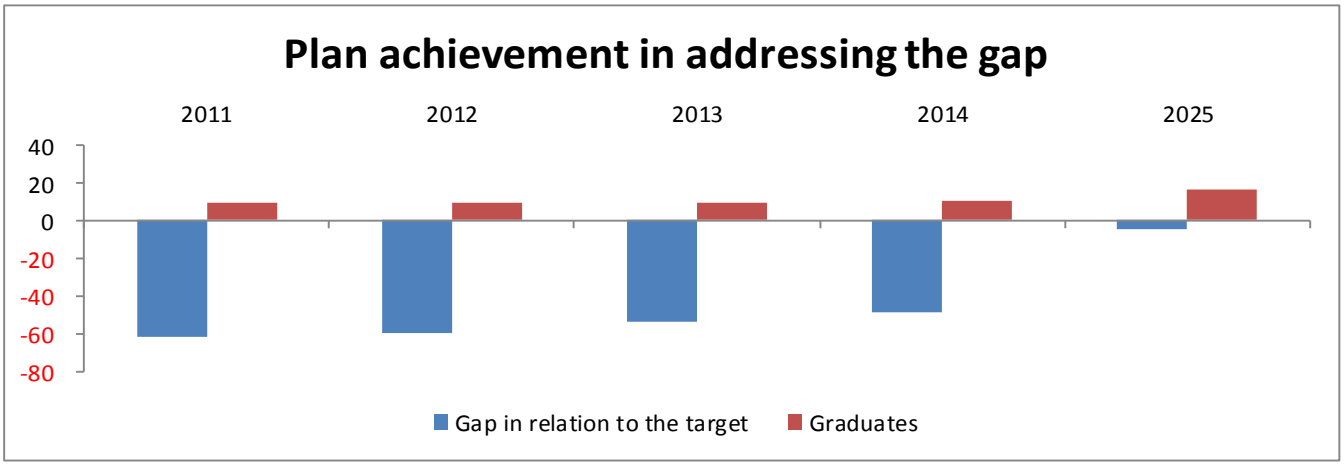


Pathology: Haematology

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	10	
Gap in 2011 based on assessment	-62	
Current staff to population ratio (per 1,000)	0.01	
Target staff to population ratio (per 1,000)	0.03	
Available professionals for national need	67	
Total entrants	10	
Total exits	7	
Total entrants less exists	3	
Enrolled students	39	
Graduates	10	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	64	67	70	78	84	146
	Professionals: end of year	67	70	78	84	90	155
	annual growth: start of year	n/a	n/a	***4.6%***	***10.5%***	***8.0%***	***4.4%***
	Gap in relation to the target	-64	-62	**-60**	**-54**	**-49**	**-4**
	Positions at start of year: target	128	129	130	131	133	150
	Pop per professional: actual (per 10,000)	0.01	0.01	0.01	0.02	0.02	0.03
	Pop per professional: target (per 10,000)	0.03	0.03	0.03	0.03	0.03	0.03
Entrants and exists	Intake from training	10	10	10	10	10	16
	Intake - other (require plan)	0	0	67			
	TOTAL ENTRANTS	10	10	**14**	**14**	**14**	**24**
	Exit - other (require plan)	3	3	3	3	3	6
	Exit - Retire at 65 (expected)	3	3	3	3	3	6
	Exit - death/invalidity/etc (expected)	1	1	1	2	2	3
	TOTAL EXITS	7	7	**7**	**8**	**8**	**15**
	TOTAL ENTRANTS LESS EXITS	3	3	***7***	***6***	***6***	***9***
Education and training	New student intake	10	10	10	11	11	19
	Continuing students	29	29	29	29	29	47
	Total enrolment at start of year	39	39	39	39	41	66
	% change in new intake	n/a	n/a	-0.7%	9.7%	7.1%	4.2%
	Graduates	10	10	10	10	10	17
	Pre-service training loss	0	0	0	0	0	0
	Continuing students	29	29	29	29	30	49

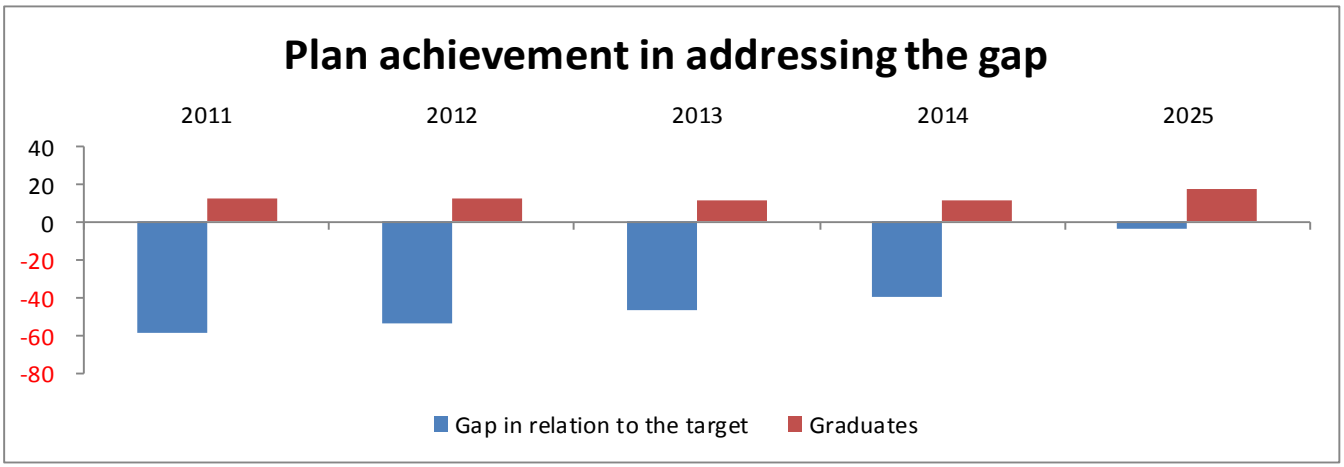


Pathology: Microbiology

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	10	
Gap in 2011 based on assessment	-59	
Current staff to population ratio (per 1,000)	0.01	
Target staff to population ratio (per 1,000)	0.03	
Available professionals for national need	70	
Total entrants	13	
Total exits	7	
Total entrants less exists	6	
Enrolled students	51	
Graduates	13	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	64	70	76	85	93	147
	Professionals: end of year	70	76	85	93	99	154
	annual growth: start of year	n/a	n/a	***8.5%***	***11.7%***	***9.2%***	***3.5%***
	Gap in relation to the target	-64	-59	**-54**	**-46**	**-40**	**-3**
	Positions at start of year: target	128	129	130	131	133	150
	Pop per professional: actual (per 10,000)	0.01	0.01	0.02	0.02	0.02	0.03
	Pop per professional: target (per 10,000)	0.03	0.03	0.03	0.03	0.03	0.03
Entrants and exists	Intake from training	13	13	13	12	12	17
	Intake - other (require plan)	0	0	50			
	TOTAL ENTRANTS	13	13	**17**	**16**	**16**	**22**
	Exit - other (require plan)	3	3	3	3	4	6
	Exit - Retire at 65 (expected)	3	3	3	3	4	6
	Exit - death/invalidity/etc (expected)	1	1	2	2	2	3
	TOTAL EXITS	7	7	**8**	**8**	**10**	**15**
	TOTAL ENTRANTS LESS EXITS	6	6	***9***	***8***	***6***	***7***
Education and training	New student intake	13	13	10	12	12	19
	Continuing students	38	38	38	36	35	49
	Total enrolment at start of year	51	51	48	48	48	69
	% change in new intake	n/a	n/a	-18.5%	10.8%	8.3%	3.4%
	Graduates	13	13	12	12	12	17
	Pre-service training loss	0	0	0	0	0	0
	Continuing students	38	38	36	35	36	51

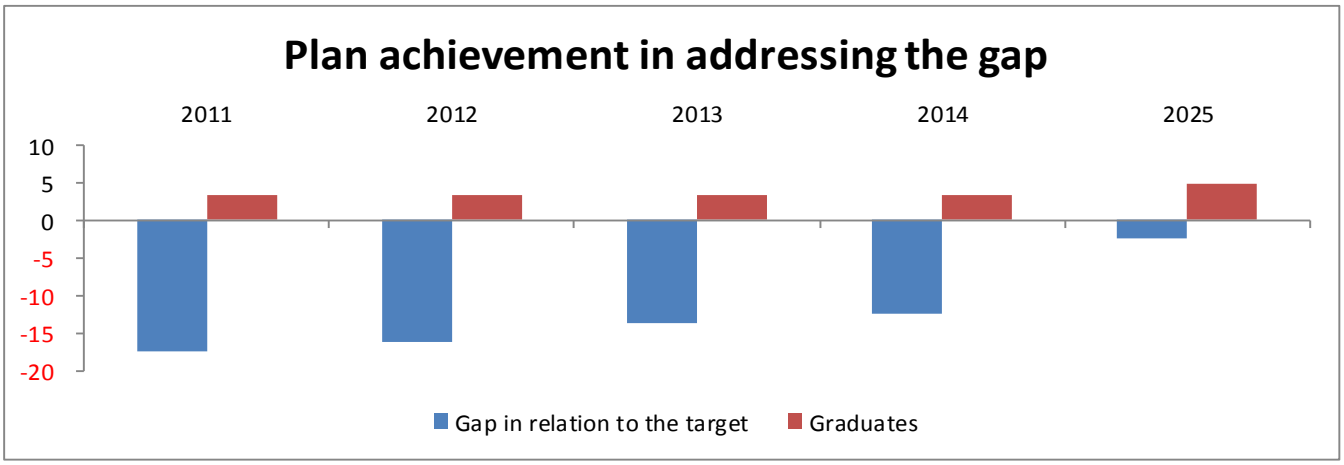


Pathology: Virological

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	10	
Gap in 2011 based on assessment	-18	
Current staff to population ratio (per 1,000)	0.00	
Target staff to population ratio (per 1,000)	0.01	
Available professionals for national need	21	
Total entrants	4	
Total exits	2	
Total entrants less exists	2	
Enrolled students	14	
Graduates	4	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	19	21	22	25	27	42
	Professionals: end of year	21	22	25	27	28	46
	annual growth: start of year	n/a	n/a	***8.1%***	***12.8%***	***6.4%***	***4.8%***
	Gap in relation to the target	-19	-18	**-16**	**-14**	**-12**	**-2**
	Positions at start of year: target	38	38	39	39	39	45
	Pop per professional: actual (per 10,000)	0.00	0.00	0.00	0.01	0.01	0.01
	Pop per professional: target (per 10,000)	0.01	0.01	0.01	0.01	0.01	0.01
Entrants and exists	Intake from training	4	4	4	3	3	5
	Intake - other (require plan)	0	0	19			
	TOTAL ENTRANTS	4	4	**5**	**5**	**5**	**8**
	Exit - other (require plan)	1	1	1	1	1	2
	Exit - Retire at 65 (expected)	1	1	1	1	1	2
	Exit - death/invalidity/etc (expected)	0	0	0	1	1	1
	TOTAL EXITS	2	2	**2**	**3**	**3**	**5**
	TOTAL ENTRANTS LESS EXITS	2	2	***3***	***2***	***1***	***4***
Education and training	New student intake	4	4	3	3	4	6
	Continuing students	11	11	10	10	10	14
	Total enrolment at start of year	14	14	13	13	14	20
	% change in new intake	n/a	n/a	-12.6%	11.7%	5.8%	4.6%
	Graduates	4	4	3	3	3	5
	Pre-service training loss	0	0	0	0	0	0
	Continuing students	10	10	10	10	10	15

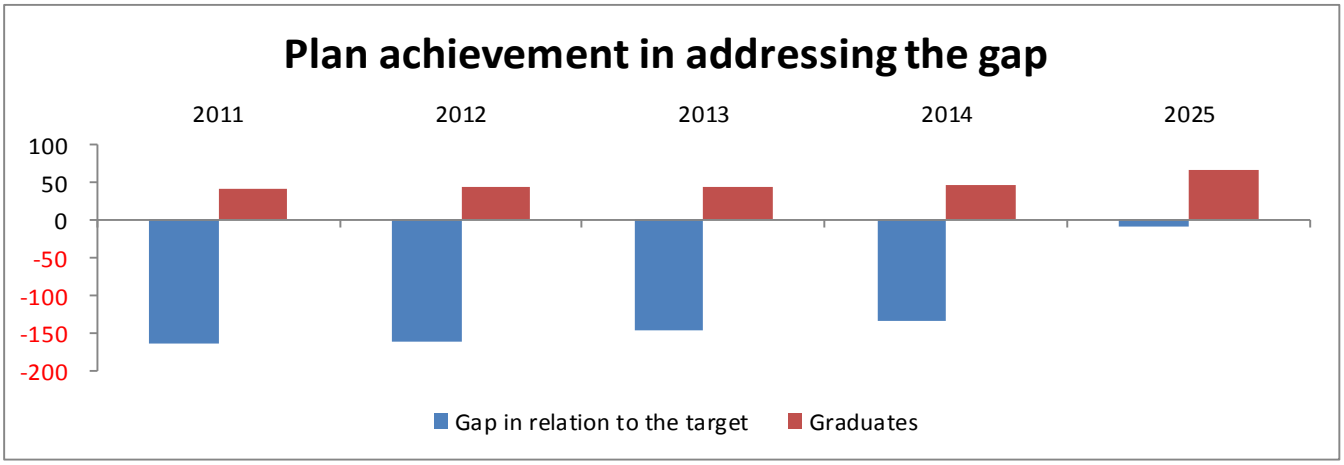


Psychiatry

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	5	
Gap in 2011 based on assessment	-164	
Current staff to population ratio (per 1,000)	0.07	
Target staff to population ratio (per 1,000)	0.10	
Available professionals for national need	344	
Total entrants	42	
Total exits	35	
Total entrants less exists	7	
Enrolled students	167	
Graduates	42	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	336	344	351	369	388	583
	Professionals: end of year	344	351	369	388	405	609
	annual growth: start of year	n/a	n/a	***2.0%***	***5.3%***	***5.0%***	***3.7%***
	Gap in relation to the target	-168	-164	**-162**	**-148**	**-134**	**-8**
	Positions at start of year: target	504	508	513	517	522	592
	Pop per professional: actual (per 10,000)	0.07	0.07	0.07	0.08	0.08	0.11
	Pop per professional: target (per 10,000)	0.10	0.10	0.10	0.10	0.10	0.10
Entrants and exists	Intake from training	42	42	42	43	44	66
	Intake - other (require plan)	0	0	172			
	TOTAL ENTRANTS	42	42	**53**	**55**	**57**	**84**
	Exit - other (require plan)	13	14	14	15	16	23
	Exit - Retire at 65 (expected)	13	14	14	15	16	23
	Exit - death/invalidity/etc (expected)	7	7	7	7	8	12
	TOTAL EXITS	33	35	**35**	**37**	**40**	**58**
	TOTAL ENTRANTS LESS EXITS	8	7	***18***	***19***	***17***	***26***
Education and training	New student intake	42	42	47	50	52	76
	Continuing students	125	125	124	128	132	195
	Total enrolment at start of year	167	167	172	177	184	271
	% change in new intake	n/a	n/a	12.9%	5.0%	4.6%	3.6%
	Graduates	42	42	43	44	46	68
	Pre-service training loss	1	1	1	1	1	2
	Continuing students	124	124	128	132	137	202

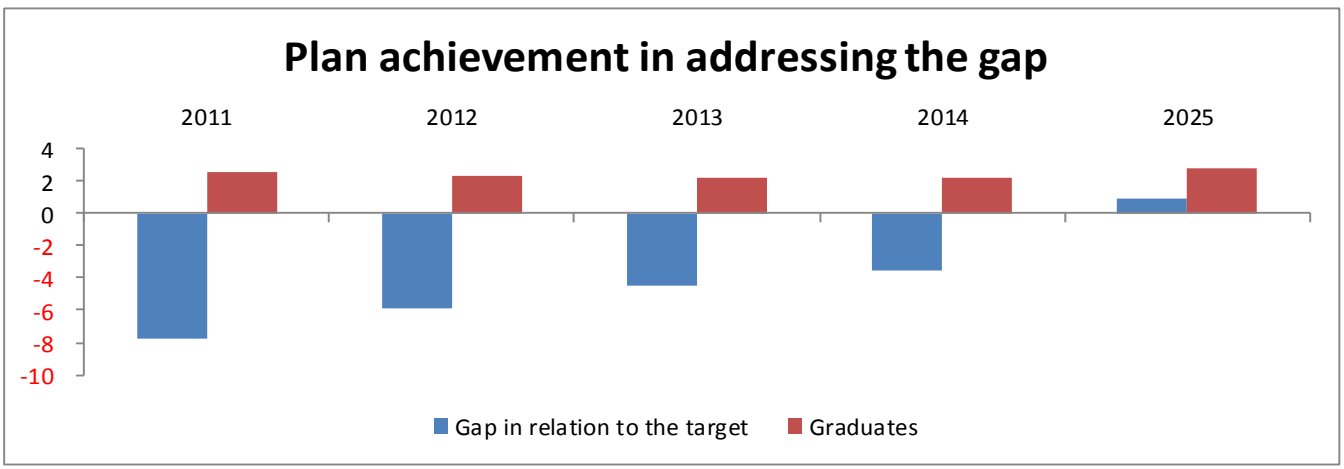


Psychiatry: Child

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	10	
Gap in 2011 based on assessment	-8	
Current staff to population ratio (per 1,000)	0.00	
Target staff to population ratio (per 1,000)	0.00	
Available professionals for national need	12	
Total entrants	3	
Total exits	0	
Total entrants less exists	2	
Enrolled students	10	
Graduates	3	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	10	12	14	15	16	24
	Professionals: end of year	12	14	15	16	17	23
	annual growth: start of year	n/a	n/a	***17.3%***	***10.9%***	***7.6%***	***1.1%***
	Gap in relation to the target	-10	-8	**-6**	**-5**	**-4**	**1**
	Positions at start of year: target	19	19	20	20	20	23
	Pop per professional: actual (per 10,000)	0.00	0.00	0.00	0.00	0.00	0.00
	Pop per professional: target (per 10,000)	0.00	0.00	0.00	0.00	0.00	0.00
Entrants and exists	Intake from training	3	3	3	2	2	3
	Intake - other (require plan)	0	0	1			
	TOTAL ENTRANTS	3	3	**3**	**3**	**3**	**2**
	Exit - other (require plan)	0	0	1	1	1	1
	Exit - Retire at 65 (expected)	0	0	1	1	1	1
	Exit - death/invalidity/etc (expected)	0	0	0	0	0	0
	TOTAL EXITS	0	0	**2**	**2**	**2**	**2**
	TOTAL ENTRANTS LESS EXITS	2	2	***1***	***1***	***1***	***-0***
Education and training	New student intake	3	3	2	2	2	3
	Continuing students	8	8	7	7	7	8
	Total enrolment at start of year	10	10	9	9	9	11
	% change in new intake	n/a	n/a	-26.1%	10.1%	7.0%	1.2%
	Graduates	3	3	2	2	2	3
	Pre-service training loss	0	0	0	0	0	0
	Continuing students	7	7	7	7	7	8

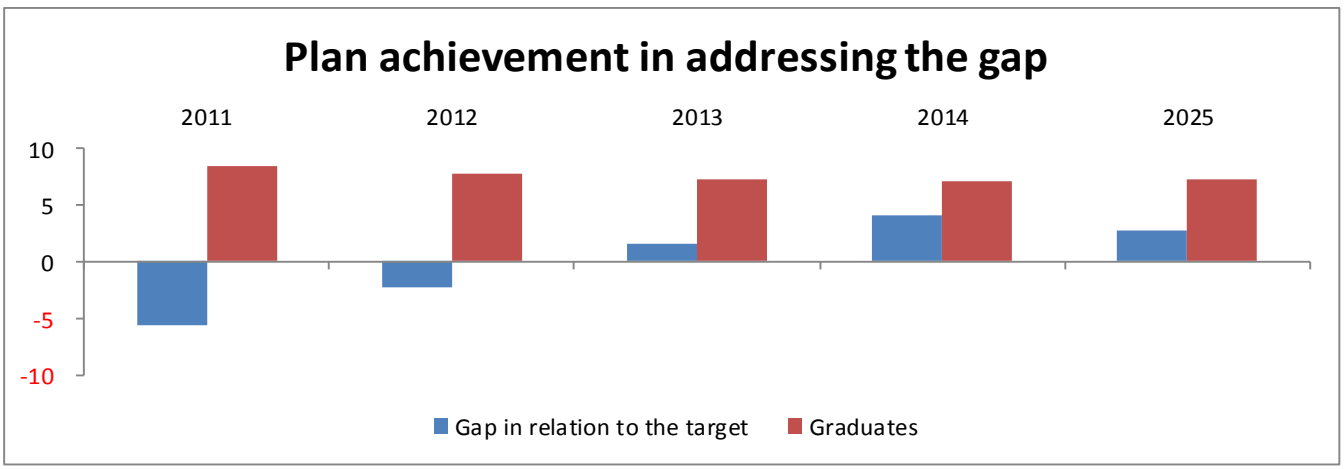


Pulmonology

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	3	
Gap in 2011 based on assessment	-6	
Current staff to population ratio (per 1,000)	0.01	
Target staff to population ratio (per 1,000)	0.01	
Available professionals for national need	40	
Total entrants	9	
Total exits	5	
Total entrants less exists	4	
Enrolled students	34	
Graduates	9	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	35	40	44	48	51	56
	Professionals: end of year	40	44	48	51	53	53
	annual growth: start of year	n/a	n/a	*9.8%*	*9.5%*	*6.3%*	*-2.6%*
	Gap in relation to the target	-10	-6	-2	2	4	3
	Positions at start of year: target	45	46	46	46	47	53
	Pop per professional: actual (per 10,000)	0.01	0.01	0.01	0.01	0.01	0.01
	Pop per professional: target (per 10,000)	0.01	0.01	0.01	0.01	0.01	0.01
Entrants and exists	Intake from training	9	9	9	8	7	7
	Intake - other (require plan)	0	0	-20			
	TOTAL ENTRANTS	9	9	9	8	7	2
	Exit - other (require plan)	1	2	2	2	2	2
	Exit - Retire at 65 (expected)	1	2	2	2	2	2
	Exit - death/invalidity/etc (expected)	1	1	1	1	1	1
	TOTAL EXITS	3	5	5	5	5	5
	TOTAL ENTRANTS LESS EXITS	5	4	*4*	*3*	*2*	*-3*
Education and training	New student intake	9	9	6	6	7	7
	Continuing students	26	26	25	23	22	22
	Total enrolment at start of year	34	34	31	29	28	29
	% change in new intake	n/a	n/a	-32.9%	8.8%	5.9%	-2.3%
	Graduates	9	9	8	7	7	7
	Pre-service training loss	0	0	0	0	0	0
	Continuing students	25	25	23	22	21	22

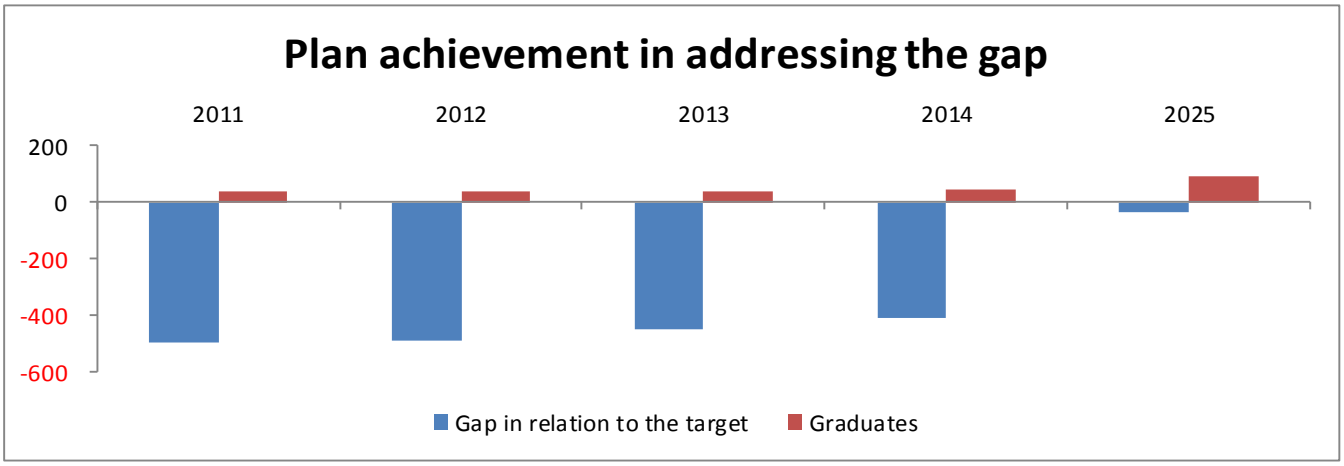


Radiology: Diagnostic

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	21	
Gap in 2011 based on assessment	-496	
Current staff to population ratio (per 1,000)	0.05	
Target staff to population ratio (per 1,000)	0.15	
Available professionals for national need	252	
Total entrants	38	
Total exits	25	
Total entrants less exists	13	
Enrolled students	151	
Graduates	38	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	239	252	265	312	357	834
	Professionals: end of year	252	265	312	357	398	915
	annual growth: start of year	n/a	n/a	***5.0%***	***17.6%***	***14.5%***	***7.5%***
	Gap in relation to the target	-502	-496	**-490**	**-450**	**-412**	**-38**
	Positions at start of year: target	742	748	755	762	769	871
	Pop per professional: actual (per 10,000)	0.05	0.05	0.06	0.07	0.07	0.16
	Pop per professional: target (per 10,000)	0.15	0.15	0.15	0.15	0.15	0.15
Entrants and exists	Intake from training	38	38	38	38	39	84
	Intake - other (require plan)	0	0	616			
	TOTAL ENTRANTS	38	38	**73**	**76**	**77**	**165**
	Exit - other (require plan)	10	10	11	12	14	33
	Exit - Retire at 65 (expected)	10	10	11	12	14	33
	Exit - death/invalidity/etc (expected)	5	5	5	6	7	17
	TOTAL EXITS	25	25	**27**	**30**	**35**	**83**
	TOTAL ENTRANTS LESS EXITS	13	13	***47***	***45***	***42***	***81***
Education and training	New student intake	38	38	39	45	50	109
	Continuing students	113	113	112	113	117	251
	Total enrolment at start of year	151	151	152	158	168	360
	% change in new intake	n/a	n/a	3.3%	15.4%	12.2%	7.0%
	Graduates	38	38	38	39	42	90
	Pre-service training loss	1	1	1	1	1	2
	Continuing students	112	112	113	117	125	268

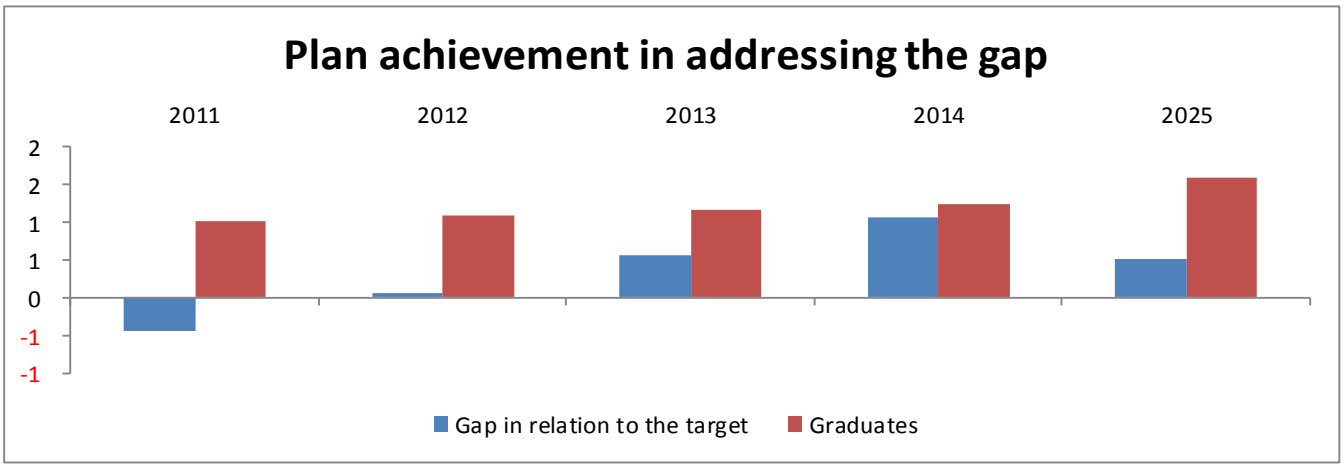


Rheumatology

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	1	
Gap in 2011 based on assessment	-0	
Current staff to population ratio (per 1,000)	0.00	
Target staff to population ratio (per 1,000)	0.00	
Available professionals for national need	10	
Total entrants	1	
Total exits	0	
Total entrants less exists	1	
Enrolled students	5	
Graduates	1	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	10	10	11	11	12	13
	Professionals: end of year	10	11	11	12	13	12
	annual growth: start of year	n/a	n/a	*5.7%*	*5.5%*	*5.4%*	*-0.9%*
	Gap in relation to the target	-1	-0	0	1	1	1
	Positions at start of year: target	11	11	11	11	11	12
	Pop per professional: actual (per 10,000)	0.00	0.00	0.00	0.00	0.00	0.00
	Pop per professional: target (per 10,000)	0.00	0.00	0.00	0.00	0.00	0.00
Entrants and exists	Intake from training	1	1	1	1	1	2
	Intake - other (require plan)	0	0	-3			
	TOTAL ENTRANTS	1	1	1	1	1	1
	Exit - other (require plan)	0	0	0	0	0	1
	Exit - Retire at 65 (expected)	0	0	0	0	0	1
	Exit - death/invalidity/etc (expected)	0	0	0	0	0	0
	TOTAL EXITS	0	0	0	0	0	2
	TOTAL ENTRANTS LESS EXITS	1	1	*1*	*1*	*1*	*-1*
Education and training	New student intake	1	1	1	1	2	2
	Continuing students	4	4	4	4	5	6
	Total enrolment at start of year	5	5	5	6	6	8
	% change in new intake	n/a	n/a	41.0%	5.2%	5.1%	-0.7%
	Graduates	1	1	1	1	1	2
	Pre-service training loss	0	0	0	0	0	0
	Continuing students	4	4	4	5	5	6

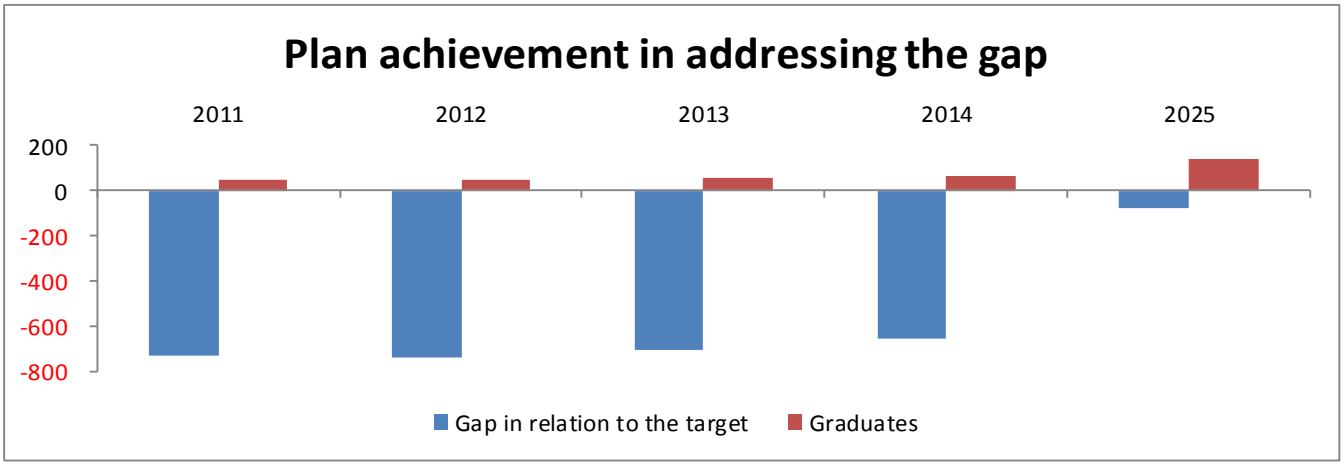


Surgery

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	15	
Gap in 2011 based on assessment	-730	
Current staff to population ratio (per 1,000)	0.10	
Target staff to population ratio (per 1,000)	0.24	
Available professionals for national need	477	
Total entrants	46	
Total exits	48	
Total entrants less exists	-2	
Enrolled students	232	
Graduates	46	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	478	477	475	526	580	1 328
	Professionals: end of year	477	475	526	580	636	1 473
	annual growth: start of year	n/a	n/a	***-0.4%***	***10.6%***	***10.4%***	***8.1%***
	Gap in relation to the target	-718	-730	**-743**	**-703**	**-659**	**-77**
	Positions at start of year: target	1 196	1 207	1 218	1 229	1 240	1 406
	Pop per professional: actual (per 10,000)	0.10	0.10	0.10	0.11	0.12	0.25
	Pop per professional: target (per 10,000)	0.24	0.24	0.24	0.24	0.24	0.24
Entrants and exists	Intake from training	46	46	46	51	55	126
	Intake - other (require plan)	0	0	1 049			
	TOTAL ENTRANTS	46	46	**99**	**108**	**114**	**278**
	Exit - other (require plan)	19	19	19	21	23	53
	Exit - Retire at 65 (expected)	19	19	19	21	23	53
	Exit - death/invalidity/etc (expected)	10	10	10	11	12	27
	TOTAL EXITS	48	48	**48**	**53**	**58**	**133**
	TOTAL ENTRANTS LESS EXITS	-2	-2	***51***	***55***	***56***	***145***
Education and training	New student intake	46	46	69	75	82	173
	Continuing students	186	186	185	201	220	502
	Total enrolment at start of year	232	232	253	277	302	675
	% change in new intake	n/a	n/a	48.0%	9.8%	8.9%	7.6%
	Graduates	46	46	51	55	60	135
	Pre-service training loss	1	1	1	2	2	3
	Continuing students	185	185	201	220	240	537

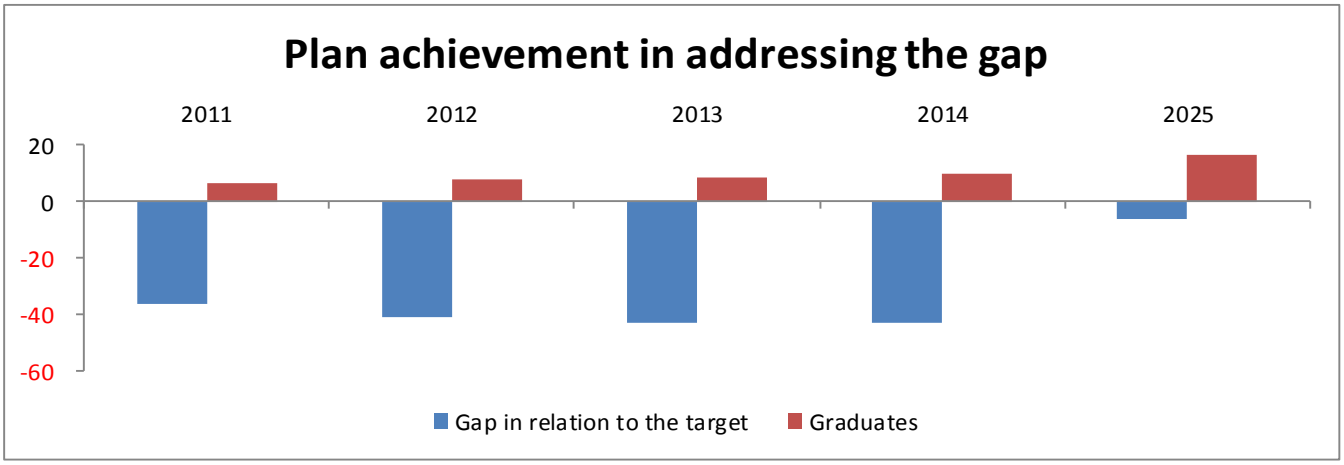


Surgery: Cardiothoracic

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	3	
Gap in 2011 based on assessment	-36	
Current staff to population ratio (per 1,000)	0.02	
Target staff to population ratio (per 1,000)	0.03	
Available professionals for national need	100	
Total entrants	6	
Total exits	10	
Total entrants less exists	-4	
Enrolled students	32	
Graduates	6	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	104	100	97	96	97	153
	Professionals: end of year	100	97	96	97	99	165
	annual growth: start of year	n/a	n/a	*-3.6%*	*-0.9%*	*1.1%*	*5.2%*
	Gap in relation to the target	-31	-36	-41	-43	-43	-6
	Positions at start of year: target	135	137	138	139	140	159
	Pop per professional: actual (per 10,000)	0.02	0.02	0.02	0.02	0.02	0.03
	Pop per professional: target (per 10,000)	0.03	0.03	0.03	0.03	0.03	0.03
Entrants and exists	Intake from training	6	6	6	8	9	16
	Intake - other (require plan)	0	0	70			
	TOTAL ENTRANTS	6	6	9	11	12	27
	Exit - other (require plan)	4	4	4	4	4	6
	Exit - Retire at 65 (expected)	4	4	4	4	4	6
	Exit - death/invalidity/etc (expected)	2	2	2	2	2	3
	TOTAL EXITS	10	10	10	10	10	15
	TOTAL ENTRANTS LESS EXITS	-4	-4	*-1*	*1*	*2*	*12*
Education and training	New student intake	6	6	13	13	13	20
	Continuing students	26	26	25	30	34	64
	Total enrolment at start of year	32	32	38	43	47	83
	% change in new intake	n/a	n/a	102.6%	-0.5%	1.0%	4.9%
	Graduates	6	6	8	9	9	17
	Pre-service training loss	0	0	0	0	0	0
	Continuing students	25	25	30	34	38	66

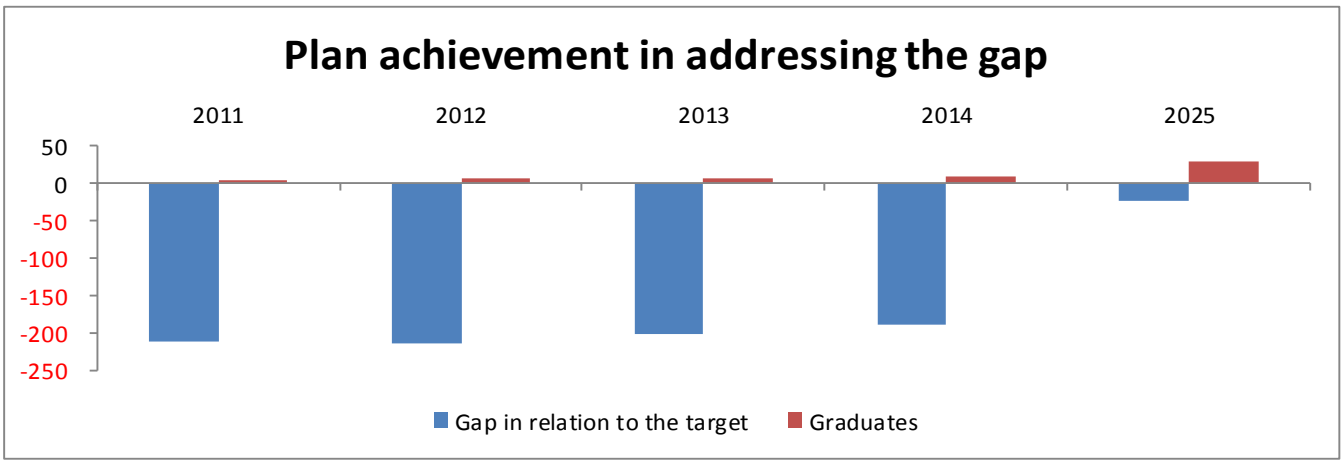


Surgery: Neurosurgery

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	35	
Gap in 2011 based on assessment	-212	
Current staff to population ratio (per 1,000)	0.01	
Target staff to population ratio (per 1,000)	0.05	
Available professionals for national need	60	
Total entrants	5	
Total exits	5	
Total entrants less exists	0	
Enrolled students	26	
Graduates	5	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	60	60	59	74	90	293
	Professionals: end of year	60	59	74	90	104	334
	annual growth: start of year	n/a	n/a	***-0.3%***	***25.2%***	***21.0%***	***10.5%***
	Gap in relation to the target	-209	-212	**-215**	**-202**	**-189**	**-23**
	Positions at start of year: target	269	272	274	276	279	316
	Pop per professional: actual (per 10,000)	0.01	0.01	0.01	0.02	0.02	0.06
	Pop per professional: target (per 10,000)	0.05	0.05	0.05	0.05	0.05	0.05
Entrants and exists	Intake from training	5	5	5	6	7	26
	Intake - other (require plan)	0	0	307			
	TOTAL ENTRANTS	5	5	**20**	**23**	**24**	**71**
	Exit - other (require plan)	2	2	2	3	4	12
	Exit - Retire at 65 (expected)	2	2	2	3	4	12
	Exit - death/invalidity/etc (expected)	1	1	1	1	2	6
	TOTAL EXITS	5	5	**5**	**7**	**10**	**30**
	TOTAL ENTRANTS LESS EXITS	-0	-0	***15***	***16***	***14***	***41***
Education and training	New student intake	5	5	10	12	14	38
	Continuing students	21	21	21	24	28	102
	Total enrolment at start of year	26	26	30	36	42	140
	% change in new intake	n/a	n/a	86.9%	20.3%	16.2%	9.7%
	Graduates	5	5	6	7	8	28
	Pre-service training loss	0	0	0	0	0	1
	Continuing students	21	21	24	28	33	112

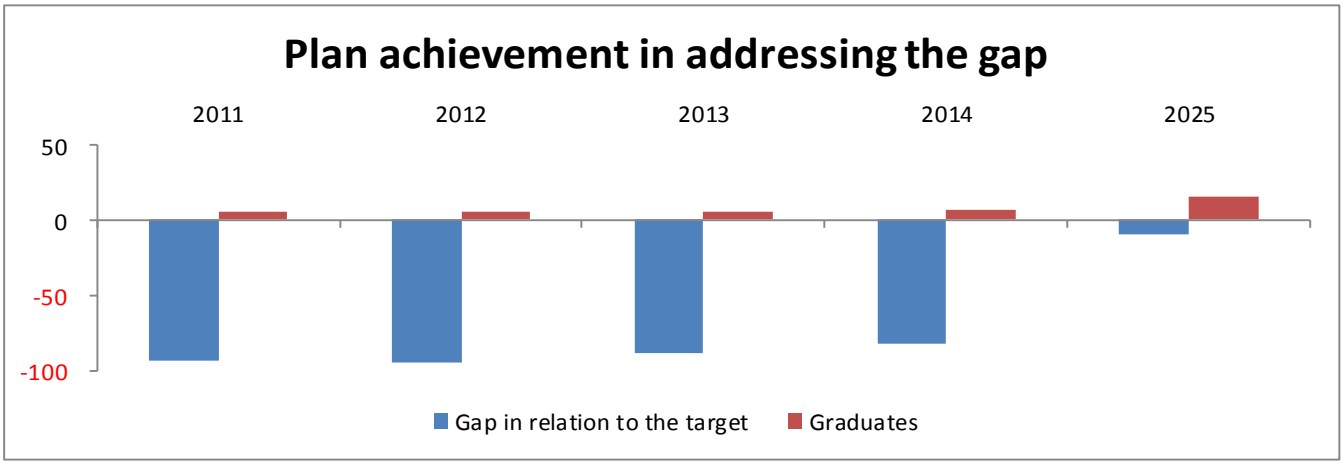


Surgery: Plastic

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	20	
Gap in 2011 based on assessment	-94	
Current staff to population ratio (per 1,000)	0.01	
Target staff to population ratio (per 1,000)	0.03	
Available professionals for national need	47	
Total entrants	5	
Total exits	5	
Total entrants less exists	0	
Enrolled students	26	
Graduates	5	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	46	47	47	54	62	153
	Professionals: end of year	47	47	54	62	70	171
	annual growth: start of year	n/a	n/a	*0.7%*	*14.9%*	*14.2%*	*8.2%*
	Gap in relation to the target	-93	-94	-94	-89	-82	-10
	Positions at start of year: target	139	140	141	143	144	163
	Pop per professional: actual (per 10,000)	0.01	0.01	0.01	0.01	0.01	0.03
	Pop per professional: target (per 10,000)	0.03	0.03	0.03	0.03	0.03	0.03
Entrants and exists	Intake from training	5	5	5	6	6	14
	Intake - other (require plan)	0	0	131			
	TOTAL ENTRANTS	5	5	**12**	**13**	**13**	**33**
	Exit - other (require plan)	2	2	2	2	2	6
	Exit - Retire at 65 (expected)	2	2	2	2	2	6
	Exit - death/invalidity/etc (expected)	1	1	1	1	1	3
	TOTAL EXITS	5	5	**5**	**5**	**5**	**15**
	TOTAL ENTRANTS LESS EXITS	0	0	***7***	***8***	***8***	***18***
Education and training	New student intake	5	5	7	8	9	20
	Continuing students	21	21	21	22	24	57
	Total enrolment at start of year	26	26	28	30	33	77
	% change in new intake	n/a	n/a	34.3%	13.2%	11.8%	7.7%
	Graduates	5	5	6	6	7	15
	Pre-service training loss	0	0	0	0	0	0
	Continuing students	21	21	22	24	26	61

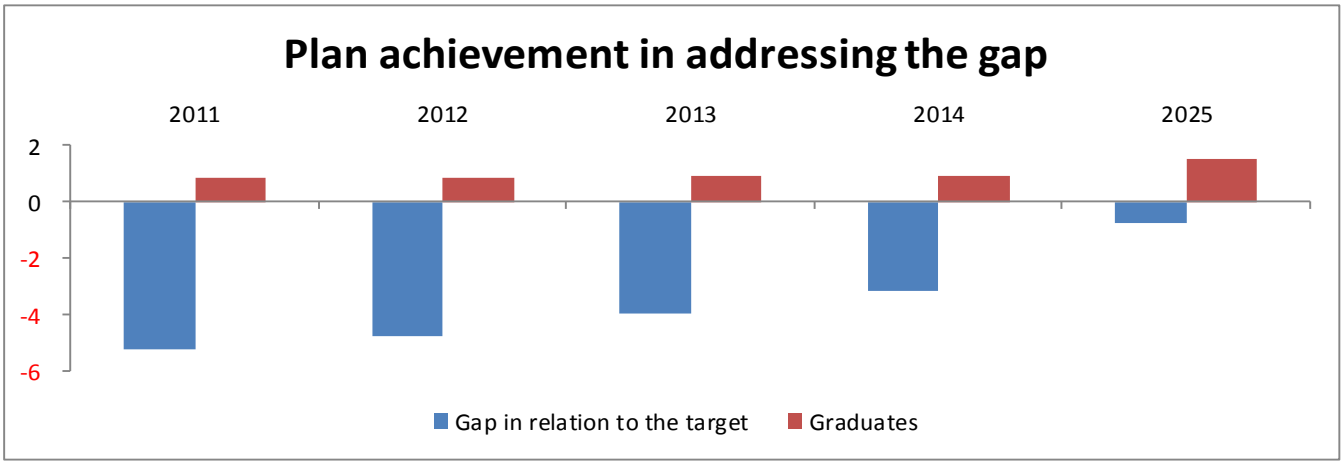


Surgery: Vascular

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	10	
Gap in 2011 based on assessment	-5	
Current staff to population ratio (per 1,000)	0.00	
Target staff to population ratio (per 1,000)	0.00	
Available professionals for national need	6	
Total entrants	1	
Total exits	0	
Total entrants less exists	1	
Enrolled students	5	
Graduates	1	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	6	6	7	8	9	13
	Professionals: end of year	6	7	8	9	10	13
	annual growth: start of year	n/a	n/a	***9.0%***	***13.4%***	***11.5%***	***-0.2%***
	Gap in relation to the target	-6	-5	**-5**	**-4**	**-3**	**-1**
	Positions at start of year: target	12	12	12	12	12	14
	Pop per professional: actual (per 10,000)	0.00	0.00	0.00	0.00	0.00	0.00
	Pop per professional: target (per 10,000)	0.00	0.00	0.00	0.00	0.00	0.00
Entrants and exists	Intake from training	1	1	1	1	1	1
	Intake - other (require plan)	0	0	3			
	TOTAL ENTRANTS	1	1	**1**	**1**	**1**	**2**
	Exit - other (require plan)	0	0	0	0	0	1
	Exit - Retire at 65 (expected)	0	0	0	0	0	1
	Exit - death/invalidity/etc (expected)	0	0	0	0	0	0
	TOTAL EXITS	0	0	**0**	**0**	**0**	**2**
	TOTAL ENTRANTS LESS EXITS	1	1	***1***	***1***	***1***	***0***
Education and training	New student intake	1	1	1	1	1	2
	Continuing students	4	4	4	4	4	7
	Total enrolment at start of year	5	5	5	5	6	9
	% change in new intake	n/a	n/a	14.1%	12.2%	10.3%	0.0%
	Graduates	1	1	1	1	1	2
	Pre-service training loss	0	0	0	0	0	0
	Continuing students	4	4	4	4	5	8

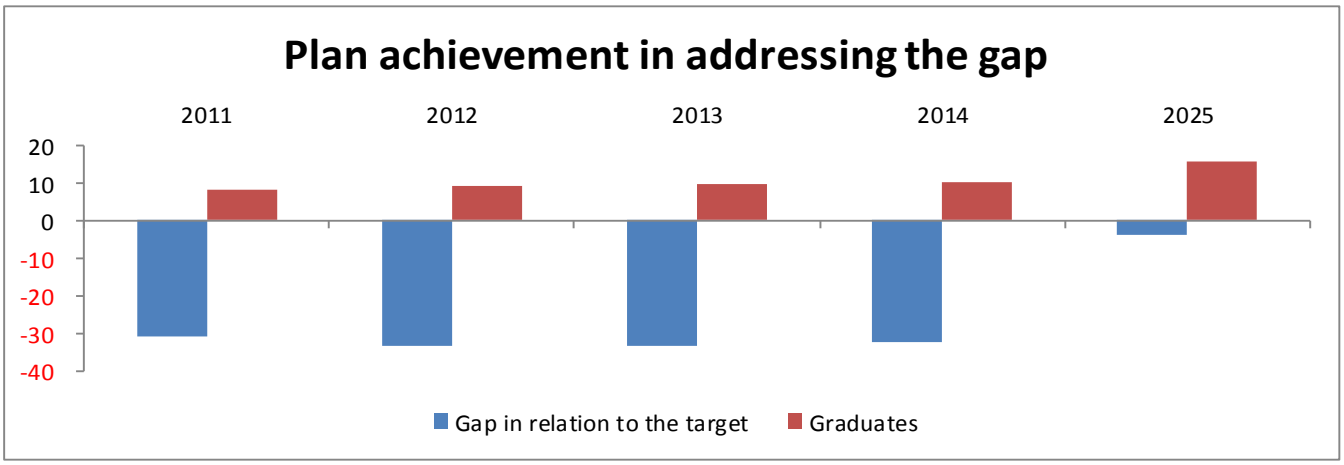


Urology

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	3	
Gap in 2011 based on assessment	-31	
Current staff to population ratio (per 1,000)	0.02	
Target staff to population ratio (per 1,000)	0.03	
Available professionals for national need	93	
Total entrants	8	
Total exits	10	
Total entrants less exists	-1	
Enrolled students	42	
Graduates	8	Years to achieve target = 14

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	95	93	92	93	95	141
	Professionals: end of year	93	92	93	95	97	148
	annual growth: start of year	n/a	n/a	*-1.4%*	*1.0%*	*2.1%*	*4.3%*
	Gap in relation to the target	-28	-31	-33	-33	-33	-4
	Positions at start of year: target	123	124	125	126	127	144
	Pop per professional: actual (per 10,000)	0.02	0.02	0.02	0.02	0.02	0.03
	Pop per professional: target (per 10,000)	0.03	0.03	0.03	0.03	0.03	0.03
Entrants and exists	Intake from training	8	8	8	9	10	15
	Intake - other (require plan)	0	0	48			
	TOTAL ENTRANTS	8	8	11	12	13	22
	Exit - other (require plan)	4	4	4	4	4	6
	Exit - Retire at 65 (expected)	4	4	4	4	4	6
	Exit - death/invalidity/etc (expected)	2	2	2	2	2	3
	TOTAL EXITS	10	10	10	10	10	15
	TOTAL ENTRANTS LESS EXITS	-1	-1	*1*	*2*	*3*	*8*
Education and training	New student intake	8	8	12	12	13	18
	Continuing students	34	34	33	36	39	60
	Total enrolment at start of year	42	42	46	49	51	79
	% change in new intake	n/a	n/a	45.8%	1.2%	2.0%	4.1%
	Graduates	8	8	9	10	10	16
	Pre-service training loss	0	0	0	0	0	0
	Continuing students	33	33	36	39	41	63



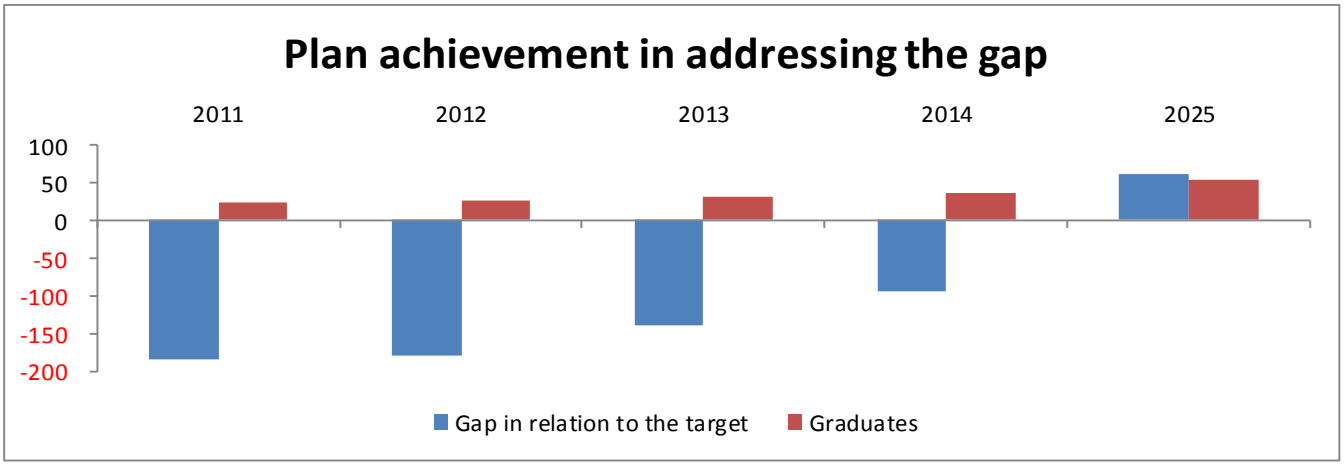
SUPPORT

Clinical associates

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	10	
Gap in 2011 based on assessment	-184	
Current staff to population ratio (per 1,000)	0.04	
Target staff to population ratio (per 1,000)	0.08	
Available professionals for national need	196	
Total entrants	25	
Total exits	18	
Total entrants less exists	7	
Enrolled students	50	
Graduates	25	Years to achieve target = 5

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	188	196	203	247	297	503
	Professionals: end of year	196	203	247	297	348	511
	annual growth: start of year	n/a	n/a	***3.7%***	***21.5%***	***20.5%***	***1.4%***
	Gap in relation to the target	-188	-184	**-181**	**-140**	**-93**	**61**
	Positions at start of year: target	377	380	384	387	390	443
	Pop per professional: actual (per 10,000)	0.04	0.04	0.04	0.05	0.06	0.09
	Pop per professional: target (per 10,000)	0.08	0.08	0.08	0.08	0.08	0.08
Entrants and exists	Intake from training	25	25	25	27	31	53
	Intake - other (require plan)	0	0	221			
	TOTAL ENTRANTS	25	25	**62**	**73**	**78**	**53**
	Exit - other (require plan)	8	8	8	10	12	20
	Exit - Retire at 65 (expected)	6	6	6	7	9	15
	Exit - death/invalidity/etc (expected)	4	4	4	5	6	10
	TOTAL EXITS	18	18	**18**	**22**	**27**	**45**
	TOTAL ENTRANTS LESS EXITS	7	7	***44***	***51***	***51***	***8***
Education and training	New student intake	25	25	31	37	42	58
	Continuing students	25	25	24	26	29	50
	Total enrolment at start of year	50	50	55	62	71	108
	% change in new intake	n/a	n/a	24.3%	17.9%	13.8%	1.8%
	Graduates	25	25	27	31	36	54
	Pre-service training loss	1	1	2	2	2	3
	Continuing students	24	24	26	29	33	51

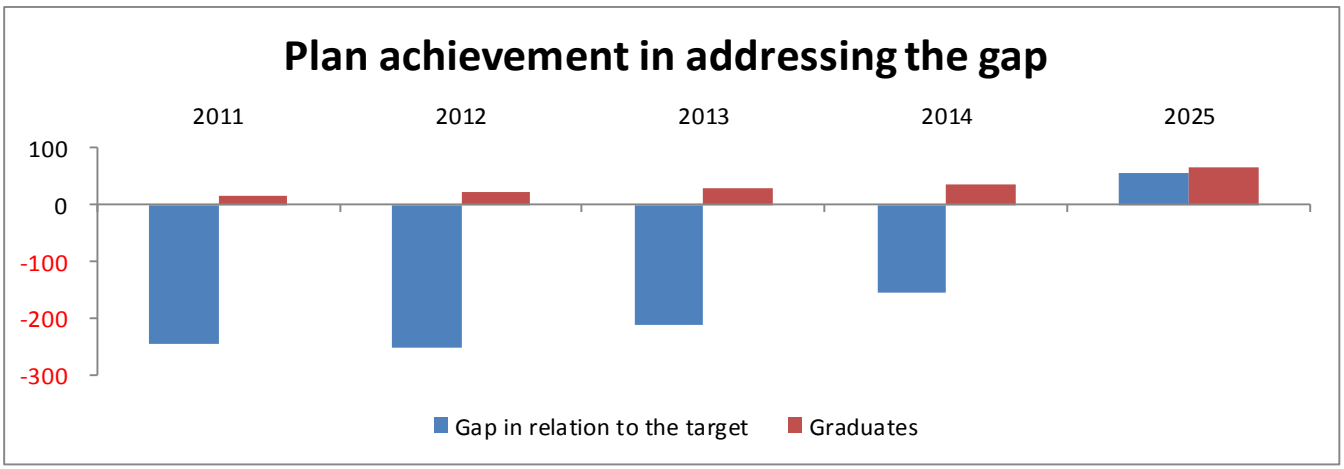


Medical technicians

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	10	
Gap in 2011 based on assessment	-245	
Current staff to population ratio (per 1,000)	0.05	
Target staff to population ratio (per 1,000)	0.10	
Available professionals for national need	231	
Total entrants	17	
Total exits	21	
Total entrants less exists	-5	
Enrolled students	50	
Graduates	17	Years to achieve target = 5

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	236	231	226	271	333	611
	Professionals: end of year	231	226	271	333	403	622
	annual growth: start of year	n/a	n/a	*-2.0%*	*19.7%*	*23.0%*	*1.6%*
	Gap in relation to the target	-236	-245	-254	-213	-155	57
	Positions at start of year: target	471	476	480	484	489	554
	Pop per professional: actual (per 10,000)	0.05	0.05	0.05	0.06	0.07	0.11
	Pop per professional: target (per 10,000)	0.10	0.10	0.10	0.10	0.10	0.10
Entrants and exists	Intake from training	17	17	17	23	29	65
	Intake - other (require plan)	0	0	351			
	TOTAL ENTRANTS	17	17	66	86	100	65
	Exit - other (require plan)	9	9	9	11	13	24
	Exit - Retire at 65 (expected)	7	7	7	8	10	18
	Exit - death/invalidity/etc (expected)	5	5	5	5	7	12
	TOTAL EXITS	21	21	21	24	30	54
	TOTAL ENTRANTS LESS EXITS	-5	-5	*45*	*62*	*69*	*10*
Education and training	New student intake	17	17	36	42	48	72
	Continuing students	33	33	33	44	55	126
	Total enrolment at start of year	50	50	69	86	104	198
	% change in new intake	n/a	n/a	116.1%	17.0%	14.8%	1.8%
	Graduates	17	17	23	29	35	66
	Pre-service training loss	1	1	2	2	2	4
	Continuing students	33	33	44	55	67	129

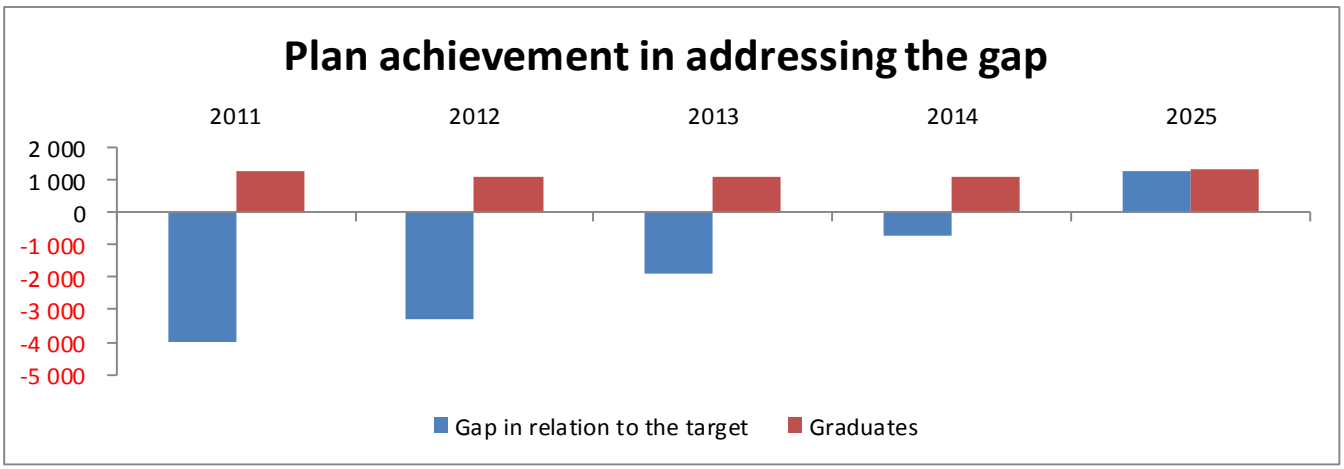


Medical technologists

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	10	
Gap in 2011 based on assessment	-3 984	
Current staff to population ratio (per 1,000)	0.97	
Target staff to population ratio (per 1,000)	1.93	
Available professionals for national need	5 578	
Total entrants	1 266	
Total exits	502	
Total entrants less exists	764	
Enrolled students	3 798	
Graduates	1 266	Years to achieve target = 5

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	4 738	5 578	6 342	7 834	9 081	12 410
	Professionals: end of year	5 578	6 342	7 834	9 081	9 994	12 607
	annual growth: start of year	n/a	n/a	***13.7%***	***23.5%***	***15.9%***	***1.6%***
	Gap in relation to the target	-4 738	-3 984	**-3 306**	**-1 901**	**-741**	**1 274**
	Positions at start of year: target	9 477	9 562	9 648	9 735	9 822	11 136
	Pop per professional: actual (per 10,000)	0.97	0.97	1.34	1.64	1.89	2.34
	Pop per professional: target (per 10,000)	1.93	1.93	1.93	1.93	1.93	1.93
Entrants and exists	Intake from training	1 266	1 266	1 266	1 126	1 096	1 314
	Intake - other (require plan)	0	0	2 545			
	TOTAL ENTRANTS	1 266	1 266	**2 063**	**1 953**	**1 729**	**1 314**
	Exit - other (require plan)	190	223	254	313	363	496
	Exit - Retire at 65 (expected)	142	167	190	235	272	372
	Exit - death/invalidity/etc (expected)	95	112	127	157	182	248
	TOTAL EXITS	427	502	**571**	**705**	**817**	**1 116**
	TOTAL ENTRANTS LESS EXITS	839	764	***1 492***	***1 248***	***912***	***197***
Education and training	New student intake	1 266	1 266	910	1 080	1 205	1 448
	Continuing students	2 532	2 532	2 469	2 207	2 138	2 556
	Total enrolment at start of year	3 798	3 798	3 379	3 287	3 342	4 004
	% change in new intake	n/a	n/a	-28.1%	18.7%	11.5%	1.8%
	Graduates	1 266	1 266	1 126	1 096	1 114	1 335
	Pre-service training loss	63	63	46	54	60	72
	Continuing students	2 469	2 469	2 207	2 138	2 168	2 597

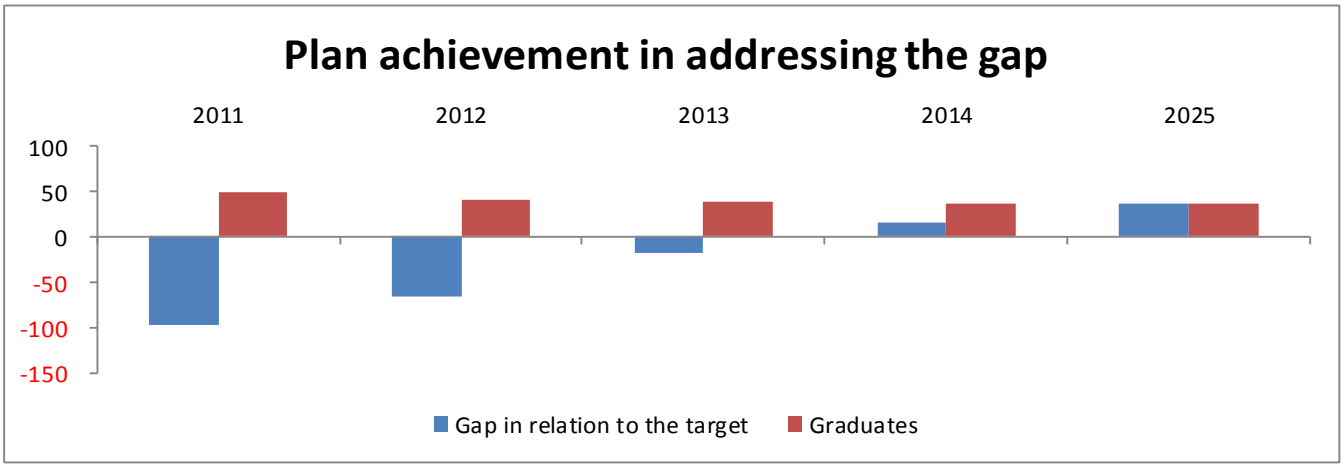


Optical dispensers

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	10	
Gap in 2011 based on assessment	-97	
Current staff to population ratio (per 1,000)	0.03	
Target staff to population ratio (per 1,000)	0.05	
Available professionals for national need	168	
Total entrants	49	
Total exits	15	
Total entrants less exists	34	
Enrolled students	147	
Graduates	49	Years to achieve target = 5

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	131	168	202	253	287	346
	Professionals: end of year	168	202	253	287	305	352
	annual growth: start of year	n/a	n/a	***20.4%***	***24.9%***	***13.6%***	***1.6%***
	Gap in relation to the target	-131	-97	**-65**	**-17**	**15**	**37**
	Positions at start of year: target	263	265	268	270	273	309
	Pop per professional: actual (per 10,000)	0.03	0.03	0.04	0.05	0.06	0.07
	Pop per professional: target (per 10,000)	0.05	0.05	0.05	0.05	0.05	0.05
Entrants and exists	Intake from training	49	49	49	41	38	37
	Intake - other (require plan)	0	0	5			
	TOTAL ENTRANTS	49	49	**68**	**57**	**44**	**37**
	Exit - other (require plan)	5	7	8	10	11	14
	Exit - Retire at 65 (expected)	4	5	6	8	9	10
	Exit - death/invalidity/etc (expected)	3	3	4	5	6	7
	TOTAL EXITS	12	15	**18**	**23**	**26**	**31**
	TOTAL ENTRANTS LESS EXITS	37	34	***50***	***34***	***17***	***6***
Education and training	New student intake	49	49	28	33	37	40
	Continuing students	98	98	96	81	75	71
	Total enrolment at start of year	147	147	124	114	111	111
	% change in new intake	n/a	n/a	-42.8%	19.3%	10.3%	1.8%
	Graduates	49	49	41	38	37	37
	Pre-service training loss	2	2	1	2	2	2
	Continuing students	96	96	81	75	72	72

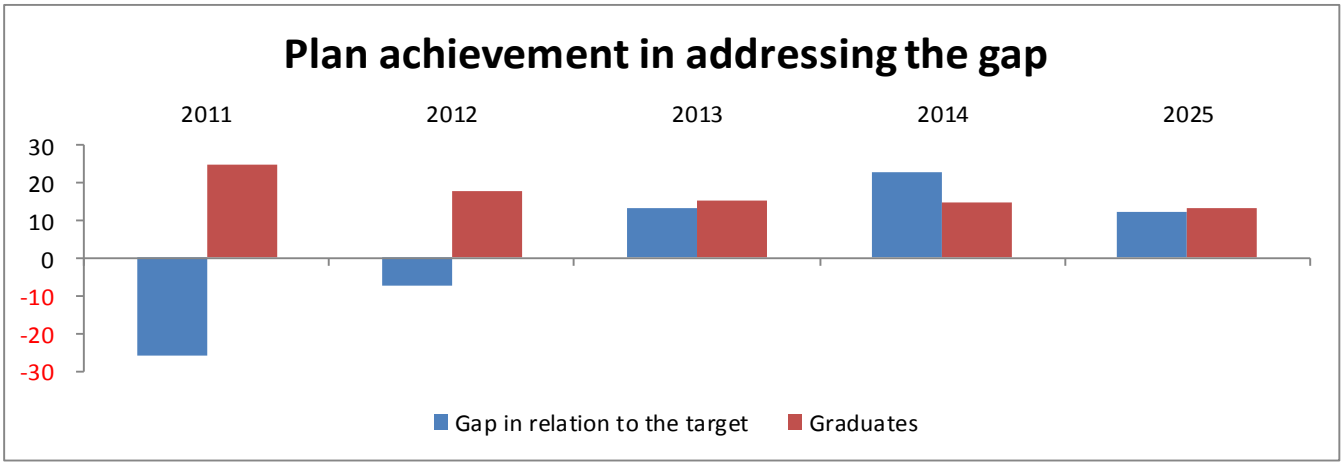


Orthopaedic footwear technicians

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	10	
Gap in 2011 based on assessment	-26	
Current staff to population ratio (per 1,000)	0.01	
Target staff to population ratio (per 1,000)	0.02	
Available professionals for national need	67	
Total entrants	25	
Total exits	6	
Total entrants less exists	19	
Enrolled students	50	
Graduates	25	Years to achieve target = 5

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	46	67	87	108	118	121
	Professionals: end of year	67	87	108	118	119	123
	annual growth: start of year	n/a	n/a	***28.7%***	***25.1%***	***9.3%***	***1.7%***
	Gap in relation to the target	-46	-26	**-7**	**13**	**23**	**12**
	Positions at start of year: target	92	93	94	95	96	109
	Pop per professional: actual (per 10,000)	0.01	0.01	0.02	0.02	0.02	0.02
	Pop per professional: target (per 10,000)	0.02	0.02	0.02	0.02	0.02	0.02
Entrants and exists	Intake from training	25	25	25	18	15	13
	Intake - other (require plan)	0	0	-31			
	TOTAL ENTRANTS	25	25	**30**	**19**	**11**	**13**
	Exit - other (require plan)	2	3	3	4	5	5
	Exit - Retire at 65 (expected)	1	2	3	3	4	4
	Exit - death/invalidity/etc (expected)	1	1	2	2	2	2
	TOTAL EXITS	4	6	**8**	**9**	**11**	**11**
	TOTAL ENTRANTS LESS EXITS	21	19	***22***	***10***	***0***	***2***
Education and training	New student intake	25	25	11	14	15	14
	Continuing students	25	25	24	17	15	12
	Total enrolment at start of year	50	50	35	31	29	26
	% change in new intake	n/a	n/a	-54.2%	19.1%	7.4%	1.8%
	Graduates	25	25	18	15	15	13
	Pre-service training loss	1	1	1	1	1	1
	Continuing students	24	24	17	15	14	12

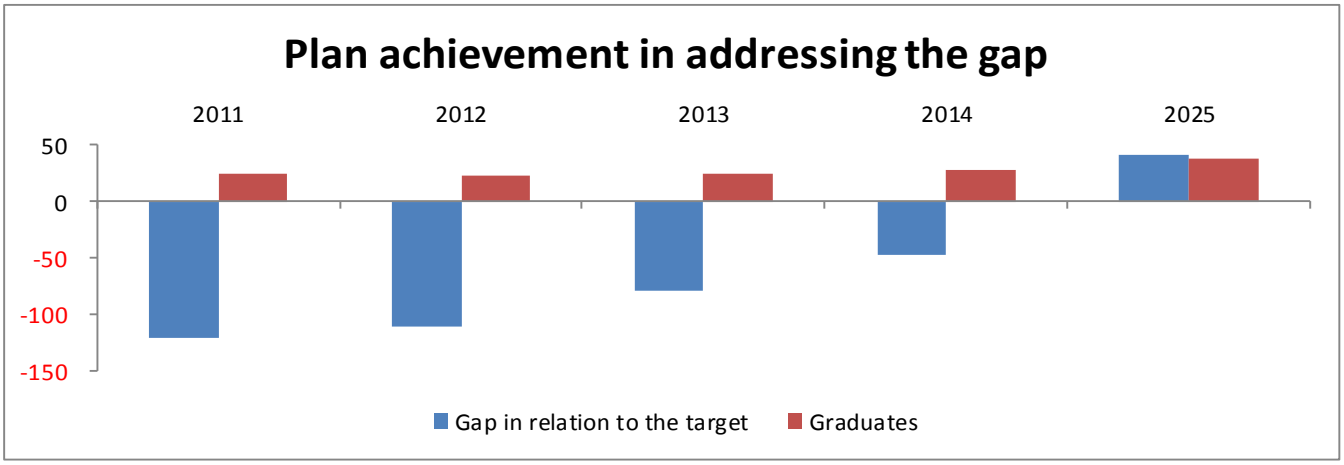


Medical Orthotist assistant

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	10	
Gap in 2011 based on assessment	-121	
Current staff to population ratio (per 1,000)	0.03	
Target staff to population ratio (per 1,000)	0.05	
Available professionals for national need	144	
Total entrants	25	
Total exits	13	
Total entrants less exists	12	
Enrolled students	50	
Graduates	25	Years to achieve target = 5

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	131	144	156	191	225	350
	Professionals: end of year	144	156	191	225	255	356
	annual growth: start of year	n/a	n/a	***8.5%***	***22.3%***	***17.6%***	***1.6%***
	Gap in relation to the target	-131	-121	**-111**	**-79**	**-47**	**41**
	Positions at start of year: target	263	265	268	270	273	309
	Pop per professional: actual (per 10,000)	0.03	0.03	0.03	0.04	0.05	0.07
	Pop per professional: target (per 10,000)	0.05	0.05	0.05	0.05	0.05	0.05
Entrants and exists	Intake from training	25	25	25	23	25	37
	Intake - other (require plan)	0	0	122			
	TOTAL ENTRANTS	25	25	**49**	**51**	**51**	**37**
	Exit - other (require plan)	5	6	6	8	9	14
	Exit - Retire at 65 (expected)	4	4	5	6	7	10
	Exit - death/invalidity/etc (expected)	3	3	3	4	5	7
	TOTAL EXITS	12	13	**14**	**18**	**21**	**31**
	TOTAL ENTRANTS LESS EXITS	13	12	***35***	***34***	***30***	***6***
Education and training	New student intake	25	25	23	27	31	40
	Continuing students	25	25	24	22	24	35
	Total enrolment at start of year	50	50	47	50	54	75
	% change in new intake	n/a	n/a	-7.1%	18.1%	12.2%	1.8%
	Graduates	25	25	23	25	27	38
	Pre-service training loss	1	1	1	1	2	2
	Continuing students	24	24	22	24	26	36

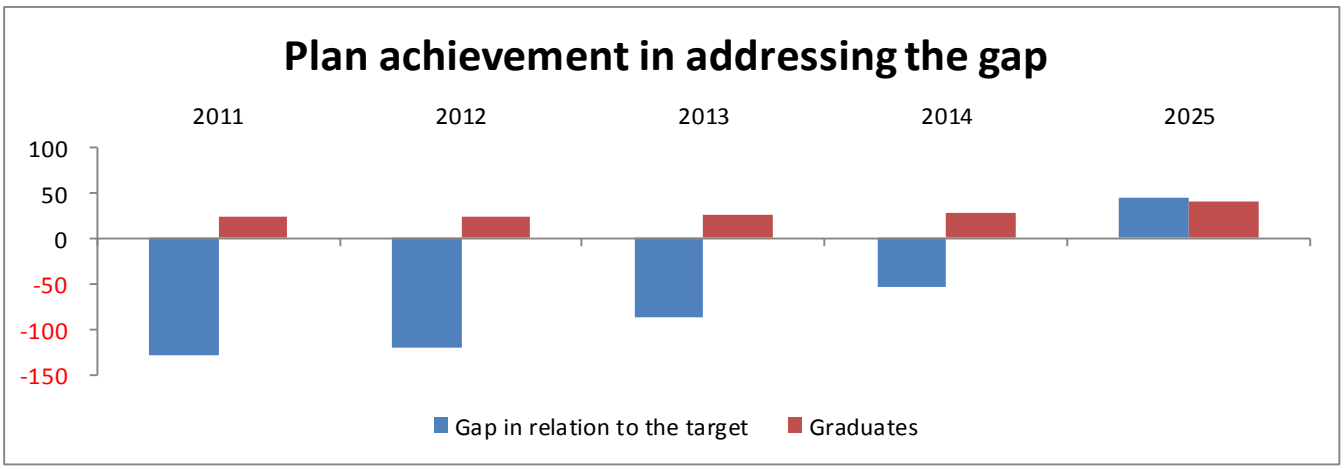


Occupational Therapy assistants

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	10	
Gap in 2011 based on assessment	-130	
Current staff to population ratio (per 1,000)	0.03	
Target staff to population ratio (per 1,000)	0.06	
Available professionals for national need	152	
Total entrants	25	
Total exits	14	
Total entrants less exists	11	
Enrolled students	50	
Graduates	25	Years to achieve target = 5

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	140	152	163	200	236	373
	Professionals: end of year	152	163	200	236	270	379
	annual growth: start of year	n/a	n/a	*7.2%*	*22.4%*	*18.3%*	*1.6%*
	Gap in relation to the target	-140	-130	-122	-88	-54	44
	Positions at start of year: target	280	282	285	287	290	329
	Pop per professional: actual (per 10,000)	0.03	0.03	0.03	0.04	0.05	0.07
	Pop per professional: target (per 10,000)	0.06	0.06	0.06	0.06	0.06	0.06
Entrants and exists	Intake from training	25	25	25	24	26	39
	Intake - other (require plan)	0	0	135			
	TOTAL ENTRANTS	25	25	51	54	55	39
	Exit - other (require plan)	6	6	7	8	9	15
	Exit - Retire at 65 (expected)	4	5	5	6	7	11
	Exit - death/invalidity/etc (expected)	3	3	3	4	5	7
	TOTAL EXITS	13	14	15	18	21	33
	TOTAL ENTRANTS LESS EXITS	12	11	*36*	*36*	*34*	*6*
Education and training	New student intake	25	25	24	29	32	43
	Continuing students	25	25	24	23	24	37
	Total enrolment at start of year	50	50	48	52	57	80
	% change in new intake	n/a	n/a	-2.5%	18.2%	12.6%	1.8%
	Graduates	25	25	24	26	28	40
	Pre-service training loss	1	1	1	1	2	2
	Continuing students	24	24	23	24	27	38

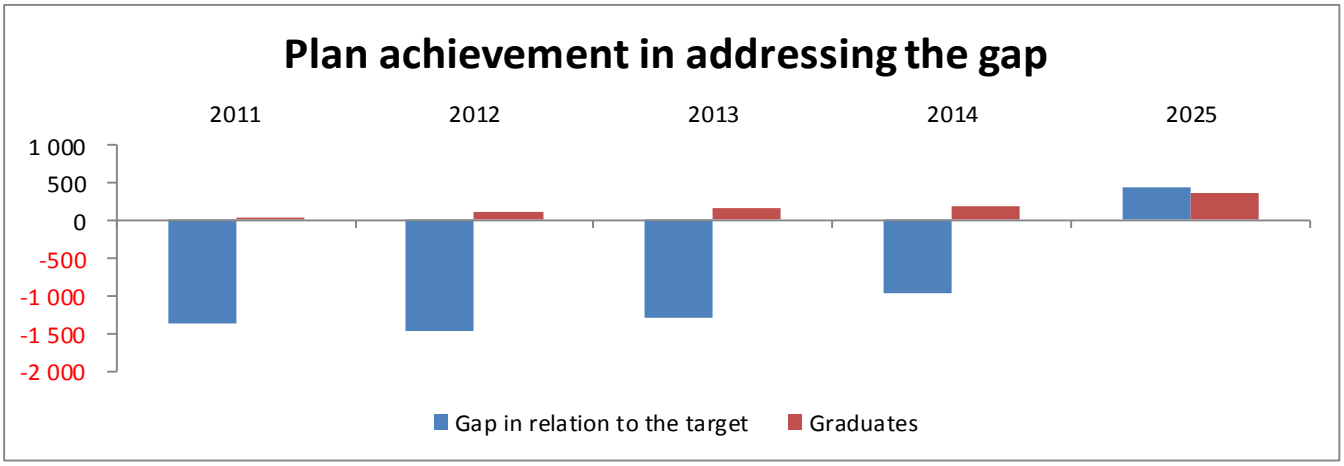


Pharmacy assistants

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	10	
Gap in 2011 based on assessment	-1 365	
Current staff to population ratio (per 1,000)	0.26	
Target staff to population ratio (per 1,000)	0.51	
Available professionals for national need	1 166	
Total entrants	25	
Total exits	105	
Total entrants less exists	-80	
Enrolled students	50	
Graduates	25	Years to achieve target = 5

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	1 254	1 166	1 087	1 286	1 638	3 392
	Professionals: end of year	1 166	1 087	1 286	1 638	2 072	3 438
	annual growth: start of year	n/a	n/a	***-6.8%***	***18.4%***	***27.4%***	***1.4%***
	Gap in relation to the target	-1 254	-1 365	**-1 468**	**-1 291**	**-962**	**443**
	Positions at start of year: target	2 509	2 532	2 554	2 577	2 600	2 948
	Pop per professional: actual (per 10,000)	0.26	0.26	0.23	0.27	0.34	0.64
	Pop per professional: target (per 10,000)	0.51	0.51	0.51	0.51	0.51	0.51
Entrants and exists	Intake from training	25	25	25	102	151	352
	Intake - other (require plan)	0	0	2 103			
	TOTAL ENTRANTS	25	25	**298**	**469**	**581**	**352**
	Exit - other (require plan)	50	47	43	51	66	136
	Exit - Retire at 65 (expected)	38	35	33	39	49	102
	Exit - death/invalidity/etc (expected)	25	23	22	26	33	68
	TOTAL EXITS	113	105	**98**	**116**	**148**	**306**
	TOTAL ENTRANTS LESS EXITS	-88	-80	***200***	***352***	***434***	***46***
Education and training	New student intake	25	25	179	209	244	383
	Continuing students	25	25	24	93	140	333
	Total enrolment at start of year	50	50	203	302	385	717
	% change in new intake	n/a	n/a	617.7%	16.6%	16.8%	1.8%
	Graduates	25	25	102	151	192	358
	Pre-service training loss	1	1	9	10	12	19
	Continuing students	24	24	93	140	180	339

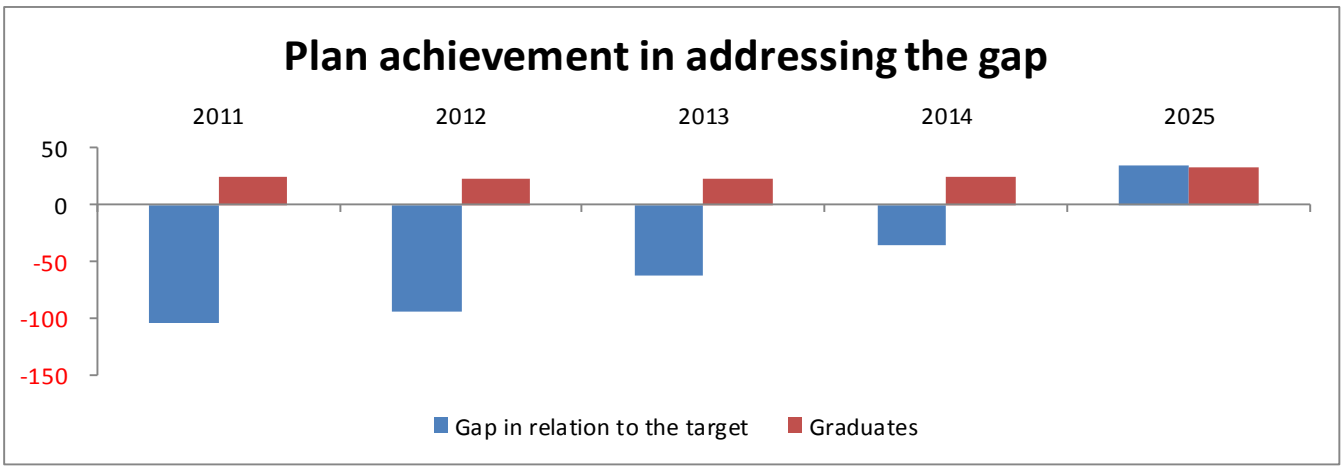


Physiotherapy assistants

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	10	
Gap in 2011 based on assessment	-105	
Current staff to population ratio (per 1,000)	0.02	
Target staff to population ratio (per 1,000)	0.05	
Available professionals for national need	132	
Total entrants	25	
Total exits	12	
Total entrants less exists	13	
Enrolled students	50	
Graduates	25	Years to achieve target = 5

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	117	132	144	178	208	311
	Professionals: end of year	132	144	178	208	234	316
	annual growth: start of year	n/a	n/a	***9.7%***	***23.0%***	***16.9%***	***1.7%***
	Gap in relation to the target	-117	-105	**-94**	**-63**	**-36**	**35**
	Positions at start of year: target	235	237	239	241	243	276
	Pop per professional: actual (per 10,000)	0.02	0.02	0.03	0.04	0.04	0.06
	Pop per professional: target (per 10,000)	0.05	0.05	0.05	0.05	0.05	0.05
Entrants and exists	Intake from training	25	25	25	22	23	33
	Intake - other (require plan)	0	0	95			
	TOTAL ENTRANTS	25	25	**46**	**46**	**44**	**33**
	Exit - other (require plan)	5	5	6	7	8	12
	Exit - Retire at 65 (expected)	4	4	4	5	6	9
	Exit - death/invalidity/etc (expected)	2	3	3	4	4	6
	TOTAL EXITS	11	12	**13**	**16**	**18**	**27**
	TOTAL ENTRANTS LESS EXITS	14	13	***33***	***30***	***26***	***6***
Education and training	New student intake	25	25	21	25	28	36
	Continuing students	25	25	24	21	22	31
	Total enrolment at start of year	50	50	45	47	50	67
	% change in new intake	n/a	n/a	-15.1%	18.5%	11.9%	1.8%
	Graduates	25	25	22	23	25	33
	Pre-service training loss	1	1	1	1	1	2
	Continuing students	24	24	21	22	24	32

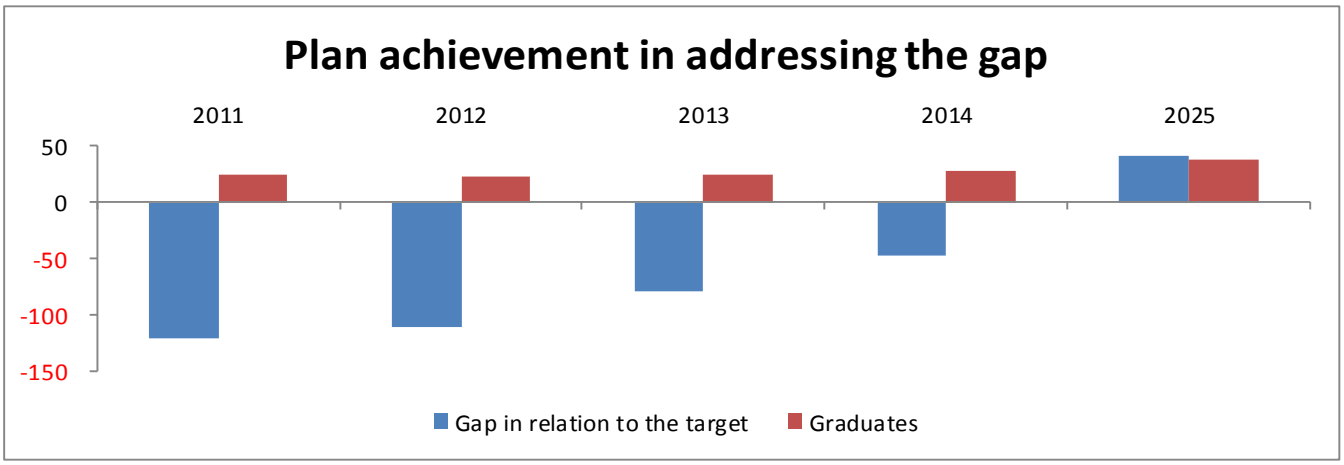


Psychology assistant

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	10	
Gap in 2011 based on assessment	-121	
Current staff to population ratio (per 1,000)	0.03	
Target staff to population ratio (per 1,000)	0.05	
Available professionals for national need	144	
Total entrants	25	
Total exits	13	
Total entrants less exists	12	
Enrolled students	50	
Graduates	25	Years to achieve target = 5

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	131	144	156	191	225	350
	Professionals: end of year	144	156	191	225	255	356
	annual growth: start of year	n/a	n/a	***8.5%***	***22.3%***	***17.6%***	***1.6%***
	Gap in relation to the target	-131	-121	**-111**	**-79**	**-47**	**41**
	Positions at start of year: target	263	265	268	270	273	309
	Pop per professional: actual (per 10,000)	0.03	0.03	0.03	0.04	0.05	0.07
	Pop per professional: target (per 10,000)	0.05	0.05	0.05	0.05	0.05	0.05
Entrants and exists	Intake from training	25	25	25	23	25	37
	Intake - other (require plan)	0	0	122			
	TOTAL ENTRANTS	25	25	**49**	**51**	**51**	**37**
	Exit - other (require plan)	5	6	6	8	9	14
	Exit - Retire at 65 (expected)	4	4	5	6	7	10
	Exit - death/invalidity/etc (expected)	3	3	3	4	5	7
	TOTAL EXITS	12	13	**14**	**18**	**21**	**31**
	TOTAL ENTRANTS LESS EXITS	13	12	***35***	***34***	***30***	***6***
Education and training	New student intake	25	25	23	27	31	40
	Continuing students	25	25	24	22	24	35
	Total enrolment at start of year	50	50	47	50	54	75
	% change in new intake	n/a	n/a	-7.1%	18.1%	12.2%	1.8%
	Graduates	25	25	23	25	27	38
	Pre-service training loss	1	1	1	1	2	2
	Continuing students	24	24	22	24	26	36

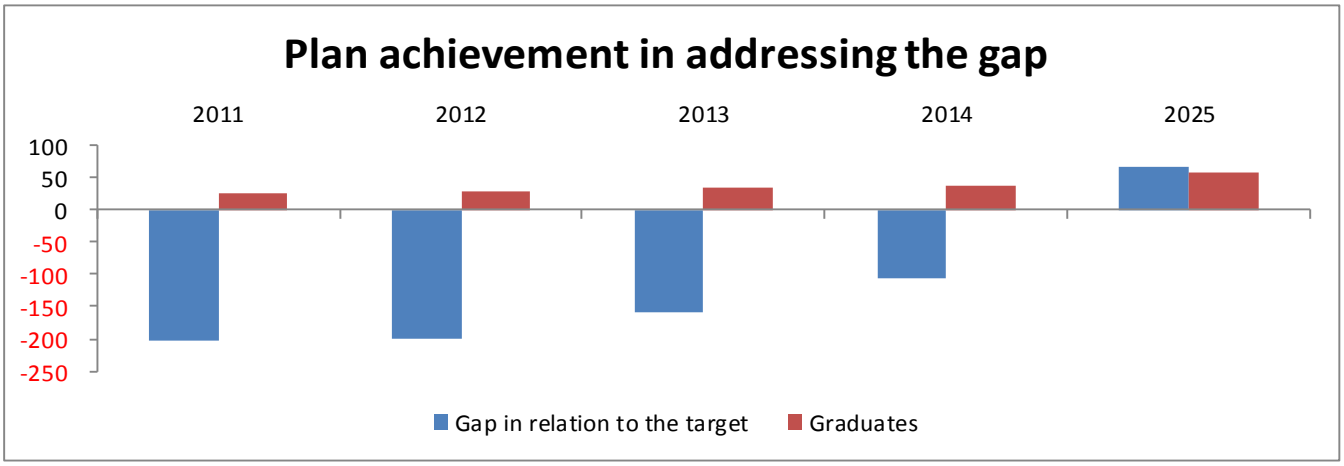


Radiography assistants

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	10	
Gap in 2011 based on assessment	-203	
Current staff to population ratio (per 1,000)	0.04	
Target staff to population ratio (per 1,000)	0.08	
Available professionals for national need	213	
Total entrants	25	
Total exits	19	
Total entrants less exists	6	
Enrolled students	50	
Graduates	25	Years to achieve target = 5

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	206	213	219	265	320	551
	Professionals: end of year	213	219	265	320	378	559
	annual growth: start of year	n/a	n/a	***3.0%***	***20.9%***	***20.8%***	***1.5%***
	Gap in relation to the target	-206	-203	**-200**	**-158**	**-107**	**67**
	Positions at start of year: target	412	416	420	423	427	484
	Pop per professional: actual (per 10,000)	0.04	0.04	0.05	0.06	0.07	0.10
	Pop per professional: target (per 10,000)	0.08	0.08	0.08	0.08	0.08	0.08
Entrants and exists	Intake from training	25	25	25	29	33	58
	Intake - other (require plan)	0	0	250			
	TOTAL ENTRANTS	25	25	**66**	**79**	**86**	**58**
	Exit - other (require plan)	8	9	9	11	13	22
	Exit - Retire at 65 (expected)	6	6	7	8	10	17
	Exit - death/invalidity/etc (expected)	4	4	4	5	6	11
	TOTAL EXITS	18	19	**20**	**24**	**29**	**50**
	TOTAL ENTRANTS LESS EXITS	7	6	***46***	***55***	***57***	***8***
Education and training	New student intake	25	25	34	40	45	63
	Continuing students	25	25	24	27	31	55
	Total enrolment at start of year	50	50	57	67	76	118
	% change in new intake	n/a	n/a	34.9%	17.5%	13.9%	1.8%
	Graduates	25	25	29	33	38	59
	Pre-service training loss	1	1	2	2	2	3
	Continuing students	24	24	27	31	36	56

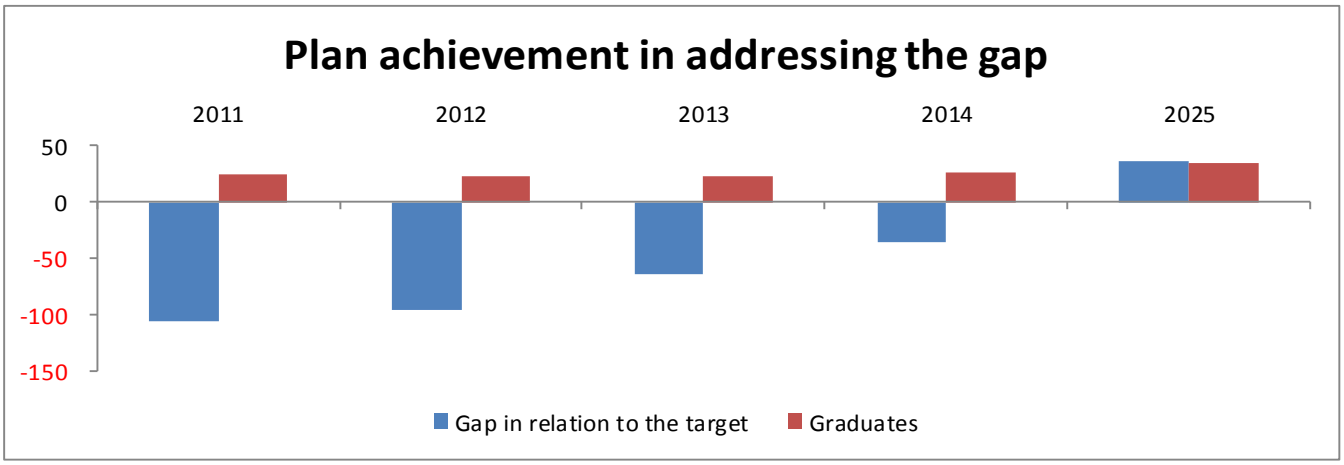


Speech Therapy assistants

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	10	
Gap in 2011 based on assessment	-106	
Current staff to population ratio (per 1,000)	0.02	
Target staff to population ratio (per 1,000)	0.05	
Available professionals for national need	133	
Total entrants	25	
Total exits	12	
Total entrants less exists	13	
Enrolled students	50	
Graduates	25	Years to achieve target = 5

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	118	133	145	179	209	314
	Professionals: end of year	133	145	179	209	236	320
	annual growth: start of year	n/a	n/a	***9.6%***	***23.0%***	***17.0%***	***1.7%***
	Gap in relation to the target	-118	-106	**-96**	**-65**	**-36**	**36**
	Positions at start of year: target	237	239	241	243	246	278
	Pop per professional: actual (per 10,000)	0.02	0.02	0.03	0.04	0.04	0.06
	Pop per professional: target (per 10,000)	0.05	0.05	0.05	0.05	0.05	0.05
Entrants and exists	Intake from training	25	25	25	23	23	33
	Intake - other (require plan)	0	0	97			
	TOTAL ENTRANTS	25	25	**46**	**47**	**45**	**33**
	Exit - other (require plan)	5	5	6	7	8	13
	Exit - Retire at 65 (expected)	4	4	4	5	6	9
	Exit - death/invalidity/etc (expected)	2	3	3	4	4	6
	TOTAL EXITS	11	12	**13**	**16**	**18**	**28**
	TOTAL ENTRANTS LESS EXITS	14	13	***33***	***30***	***27***	***6***
Education and training	New student intake	25	25	21	25	28	36
	Continuing students	25	25	24	22	22	31
	Total enrolment at start of year	50	50	45	47	51	68
	% change in new intake	n/a	n/a	-14.4%	18.5%	12.0%	1.8%
	Graduates	25	25	23	23	25	34
	Pre-service training loss	1	1	1	1	1	2
	Continuing students	24	24	22	22	24	32

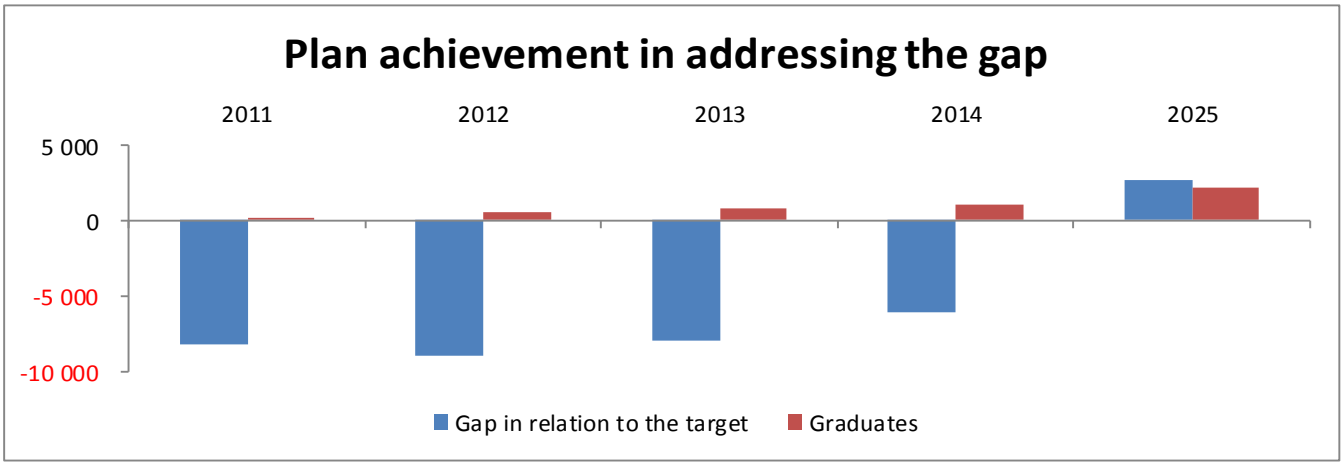


Pharmacy assistants: post basic

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	10	
Gap in 2011 based on assessment	-8 288	
Current staff to population ratio (per 1,000)	1.53	
Target staff to population ratio (per 1,000)	3.06	
Available professionals for national need	6 853	
Total entrants	25	
Total exits	617	
Total entrants less exists	-592	
Enrolled students	50	
Graduates	25	Years to achieve target = 5

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	7 503	6 853	6 261	7 380	9 506	20 300
	Professionals: end of year	6 853	6 261	7 380	9 506	12 181	20 579
	annual growth: start of year	n/a	n/a	***-8.6%***	***17.9%***	***28.8%***	***1.3%***
	Gap in relation to the target	-7 503	-8 288	**-9 017**	**-8 035**	**-6 048**	**2 666**
	Positions at start of year: target	15 006	15 141	15 278	15 415	15 554	17 634
	Pop per professional: actual (per 10,000)	1.53	1.53	1.32	1.55	1.97	3.82
	Pop per professional: target (per 10,000)	3.06	3.06	3.06	3.06	3.06	3.06
Entrants and exists	Intake from training	25	25	25	536	852	2 106
	Intake - other (require plan)	0	0	13 127			
	TOTAL ENTRANTS	25	25	**1 683**	**2 790**	**3 530**	**2 106**
	Exit - other (require plan)	300	274	250	295	380	812
	Exit - Retire at 65 (expected)	225	206	188	221	285	609
	Exit - death/invalidity/etc (expected)	150	137	125	148	190	406
	TOTAL EXITS	675	617	**563**	**664**	**855**	**1 827**
	TOTAL ENTRANTS LESS EXITS	-650	-592	***1 119***	***2 126***	***2 675***	***279***
Education and training	New student intake	25	25	1 048	1 221	1 432	2 292
	Continuing students	25	25	24	484	791	1 993
	Total enrolment at start of year	50	50	1 072	1 704	2 223	4 286
	% change in new intake	n/a	n/a	4093.4%	16.4%	17.4%	1.8%
	Graduates	25	25	536	852	1 112	2 143
	Pre-service training loss	1	1	52	61	72	115
	Continuing students	24	24	484	791	1 040	2 028

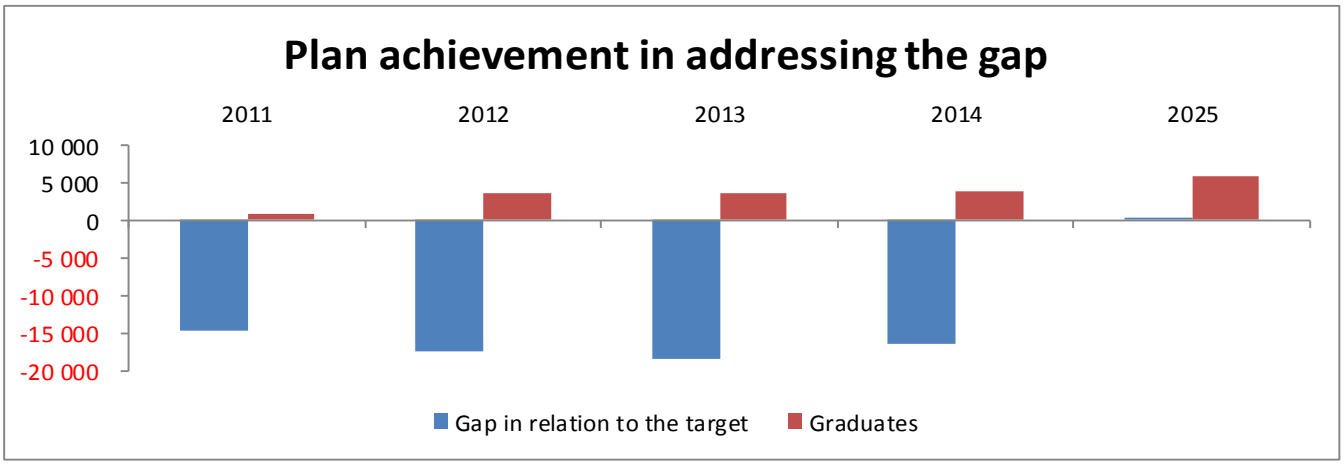


Community health worker

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	3	
Gap in 2011 based on assessment	-14 651	
Current staff to population ratio (per 1,000)	7.95	
Target staff to population ratio (per 1,000)	10.33	
Available professionals for national need	36 456	
Total entrants	1 000	
Total exits	3 281	
Total entrants less exists	-2 281	
Enrolled students	500	
Graduates	1 000	Years to achieve target = 10

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	38 962	36 456	34 174	33 564	36 068	59 672
	Professionals: end of year	36 456	34 174	33 564	36 068	38 692	60 149
	annual growth: start of year	n/a	n/a	***-6.3%***	***-1.8%***	***7.5%***	***0.7%***
	Gap in relation to the target	-11 689	-14 651	**-17 392**	**-18 466**	**-16 431**	**152**
	Positions at start of year: target	50 651	51 106	51 566	52 031	52 499	59 520
	Pop per professional: actual (per 10,000)	7.95	7.95	7.22	7.03	7.49	11.23
	Pop per professional: target (per 10,000)	10.33	10.33	10.33	10.33	10.33	10.33
Entrants and exists	Intake from training	1 000	1 000	1 000	3 591	3 562	5 846
	Intake - other (require plan)	0	0	23 569			
	TOTAL ENTRANTS	1 000	1 000	**2 465**	**5 524**	**5 870**	**5 846**
	Exit - other (require plan)	1 558	1 458	1 367	1 343	1 443	2 387
	Exit - Retire at 65 (expected)	1 169	1 094	1 025	1 007	1 082	1 790
	Exit - death/invalidity/etc (expected)	779	729	683	671	721	1 193
	TOTAL EXITS	3 506	3 281	**3 075**	**3 021**	**3 246**	**5 370**
	TOTAL ENTRANTS LESS EXITS	-2 506	-2 281	***-610***	***2 503***	***2 624***	***476***
Education and training	New student intake	1 000	1 000	1 796	1 781	1 895	2 976
	Continuing students	-500	-500	0	0	0	0
	Total enrolment at start of year	500	500	1 796	1 781	1 895	2 976
	% change in new intake	n/a	n/a	79.6%	-0.8%	6.4%	1.8%
	Graduates	1 000	1 000	3 591	3 562	3 789	5 952
	Pre-service training loss	50	50	90	89	95	149
	Continuing students	0	0	0	0	0	0



Home based care worker

Planning evaluation for year	2011	Evaluation
Reprioritisation assessment	3	
Gap in 2011 based on assessment	-9 655	
Current staff to population ratio (per 1,000)	5.00	
Target staff to population ratio (per 1,000)	6.50	
Available professionals for national need	22 524	
Total entrants	200	
Total exits	2 027	
Total entrants less exists	-1 827	
Enrolled students	100	
Graduates	200	Years to achieve target = 10

Plan summary

		Default	2011	2012	2013	2014	2025
Staff in employment (national)	Professionals: start of year	24 533	22 524	20 697	20 000	21 695	37 674
	Professionals: end of year	22 524	20 697	20 000	21 695	23 480	37 966
	annual growth: start of year	n/a	n/a	*-8.1%*	*-3.4%*	*8.5%*	*0.7%*
	Gap in relation to the target	-7 360	-9 655	-11 772	-12 761	-11 361	197
	Positions at start of year: target	31 892	32 179	32 469	32 761	33 056	37 477
	Pop per professional: actual (per 10,000)	5.00	5.00	4.38	4.19	4.51	7.09
	Pop per professional: target (per 10,000)	6.50	6.50	6.50	6.50	6.50	6.50
Entrants and exists	Intake from training	200	200	200	2 187	2 142	3 681
	Intake - other (require plan)	0	0	16 222			
	TOTAL ENTRANTS	200	200	1 166	3 495	3 737	3 681
	Exit - other (require plan)	981	901	828	800	868	1 507
	Exit - Retire at 65 (expected)	736	676	621	600	651	1 130
	Exit - death/invalidity/etc (expected)	491	450	414	400	434	753
	TOTAL EXITS	2 208	2 027	1 863	1 800	1 953	3 390
	TOTAL ENTRANTS LESS EXITS	-2 008	-1 827	*-697*	*1 695*	*1 784*	*291*
Education and training	New student intake	200	200	1 094	1 071	1 148	1 874
	Continuing students	-100	-100	0	0	0	0
	Total enrolment at start of year	100	100	1 094	1 071	1 148	1 874
	% change in new intake	n/a	n/a	446.9%	-2.1%	7.2%	1.8%
	Graduates	200	200	2 187	2 142	2 296	3 748
	Pre-service training loss	10	10	55	54	57	94
	Continuing students	0	0	0	0	0	0