A rural scholarship model addressing the shortage of healthcare workers in rural areas

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Shortage of healthcare workers (HCWs) in rural areas is an international problem. In South Africa the Umthombo Youth Development Foundation (UYDF) scholarship scheme is an intervention to attract and retain HCWs in rural areas.

Umthombo began 19 years ago. The scholarship scheme is based on the premise that graduates of rural origin are more likely to choose to work in rural areas, and that funding the studies of such students is a viable option in increasing the number of health workers in rural areas.

To date, a total of 337 students spanning 16 different disciplines have graduated as a result of the Foundation’s support. The scheme has recorded a 92% university pass rate over the past five years.

This chapter describes the key features of the scholarship programme, reflects on the challenges and lessons learnt, and discusses the broader application of the UYDF model in producing HCWs committed to public and rural service. The UYDF experience demonstrates that rural students from quintile 1 and 2 non-fee-paying schools can succeed at university if provided with the necessary financial, academic and social mentoring support; that graduates will return to work in their local hospitals if it is a condition of support; and that training of HCWs who remain and work in South Africa is an economic investment.

Extension of the model may increase the number of HCWs in rural areas, which is promising given that staffing rural areas is likely to be a major challenge in the successful rollout of the National Health Insurance system.

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Introduction

The shortage of health care workers (HCWs) in rural areas is an international problem and well documented in the literature.\(^1\)–\(^6\) In South Africa, there is an overall shortage of HCWs in the public sector, with 106,518 public-sector vacancies in 2010 for 14 clinical health professions.\(^1\) Medical practitioners accounted for 10,860 of the total vacancies, while professional nurses accounted for 44,780 of the total.\(^1\)

Although 43.6% of the South African population live in rural areas, they are served by only 12% of doctors and 19% of nurses.\(^1\) Of the 1,200 medical students graduating in the country annually, only about 35 end up working in rural areas in the longer term.\(^1\)

One initiative to address the shortage of doctors in rural and underserved areas of South Africa is through recruitment of HCWs (mainly from overseas), and placing them in areas of greatest need. For example, from November 2014 to March 2018, Africa Health Placements deployed 4,384 doctors in South Africa, with 1,391 placed in KwaZulu-Natal (KZN).\(^2\) These figures highlight the need for doctors in underserved areas, and the shortage of doctors in South Africa.

Research in Australia, Canada and the USA has shown that recruiting medical and health science students originating from rural areas is one of the most effective strategies in addressing staff shortages in rural and remote facilities.\(^7\)–\(^13\) This has been corroborated by local studies which found that the “rural origin” of HCWs is associated with rural practice (in most cases this was the most significant factor), and that incentives such as bursaries and scholarships, with an enforceable rural service agreement, encourage rural practice.\(^6\)

A 2003 study that investigated the career choices of medical graduates of rural origin in South Africa and what proportion of rural-origin graduates were practising in rural areas, concluded that students of rural origin were significantly more likely to work in rural areas than their urban counterparts.\(^7\) Despite the limitations of the study (namely small sample size and predominantly male subjects), the results suggest that 45.9% of rural-origin graduates were in rural practice, compared to 13.3% of urban-origin graduates.\(^7\) Hence rural origin is strongly associated with rural practice.\(^2\)–\(^6\)

This chapter describes critical aspects that have enabled the Umthombo Youth Development Foundation (UYDF) to recruit, support and produce rural-origin HCWs successfully and consistently since 1999. The chapter illustrates how these aspects have been combined into a workable model, and describes how one aspect supports another. Broader use of the UYDF model to increase the number of HCWs committed to public service is discussed, with specific implications for the provision of universal health coverage through National Health Insurance (NHI).

The Umthombo Youth Development Foundation

Overview

Established by Dr Ross in 1999, the original intention of the scheme was to provide HCWs for hospitals in the Umkanyakude health district of KZN. The scheme focused on identifying local youth with the potential and interest to study a health science degree, and who on graduation would be willing to work at a rural hospital in the district for the same number of years that they were supported.\(^14\) In 2008, the scheme transitioned from a small voluntary organisation managed by trustees to a professional organisation with full-time staff. By 2018, 15 district rural hospitals in three KZN districts (Umkanyakude, Zululand, and King Cetshwayo), and two rural Eastern Cape district hospitals, were participating in the scheme.

Critical aspects

Some of the conditions attached to the scholarship were that students had to apply to universities themselves; undertake compulsory voluntary work at the hospital before selection in order to confirm their choice of health science discipline; do compulsory work at the hospital during vacations; and choose study fields based on the provincial Department of Health (DoH) human resource priorities.

The scholarship provides comprehensive financial support, which includes tuition and residence fees as well as meals and textbooks. Initially, students were required to report on their progress during their vacations when they returned to the hospital for compulsory holiday work. Students were also required to visit their previous school to raise awareness of the scheme and to serve as role models for other aspiring learners. Mentoring support took place via monthly telephone calls and annual visits to the universities.

The scheme was designed to centre on the local district hospital, which was involved in various aspects of the programme such as selection of students, provision of mentoring and support during the holiday work periods, and employment of graduates.

Management and operation of the scheme have evolved over the years to keep pace with the scheme’s growth, and the following have been put in place since 2009.

Identifying sufficient youth with potential

A number of initiatives exist in order to identify sufficient rural youth with potential. These include:

➢ Marketing and introducing the scheme to learners in the area: Local schools are visited and presentations are given at career expos to raise awareness of the scholarship programme and its success. The possibility of health sciences as a career opportunity is discussed, as well as the subjects and grades required to study health science courses, and university application procedures and closing dates. Learners are also made aware of funding opportunities through the KZN DoH Provincial Bursary Scheme, the National Student Financial Aid Scheme (NSFAS), and other bursary providers.

➢ Open days: Each participating hospital has at least one open day (ideally two) a year, where top learners from local schools who are doing Mathematics and Science and who have an interest in studying a health science degree, visit the hospital to learn more about the health science discipline they are interested in. Learners are taken on a tour through the various hospital departments and meet professionals and graduates of the scheme who share what their health science discipline entails, how they succeeded at university, and what the learners can expect at university. Various related presentations

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such as the university application process, and how to apply for a UYDF scholarship, a provincial bursary or a NSFAS loan/bursary, are also provided on the day.

➢ Voluntary work: Learners who have applied for admission to university for a health science degree and who are interested in applying for a UYDF scholarship, are required to do at least one week of voluntary work in the relevant department at their local hospital as part of the application process.

➢ Local selection committee: Applicants are interviewed and selected by a local committee consisting of hospital representatives, the local school principal or district office representative, and a community representative. The local selection process also builds in accountability between the student and the community, as in most cases members of the interview panel know the parents or relatives of the applicant. Interviews focus on the students’ understanding of their chosen health science discipline and their commitment to serve their community after graduating.

Box 1: Selection criteria

Applicants must:

❖ come from the area;
❖ have applied or have been accepted to study a health science degree at a South African public university in a discipline required by the hospital. The local hospital, as well as the KZN DoH District and Head Office, determine the priority health science disciplines to be addressed through student selection;
❖ have completed at least one week of voluntary work at the local hospital;
❖ be in financial need and able to provide proof thereof;
❖ be chosen by the local selection committee; and
❖ agree to sign a year-for-year work-back contract.

Source: MacGregor, 2017.15

Comprehensive financial support

Comprehensive financial support covering tuition, accommodation, books, food, minor equipment and incidental expenses is provided for each student. This allows students to focus exclusively on their studies without having to worry about financial issues, and ensures that students have all the books and equipment needed to study and practise effectively, thus improving their chances of success.

Mentoring support

Non-academic factors, such as lack of money, lack of family support, and studying in English, are some of the factors affecting academic performance of black students from disadvantaged homes and schools.16 As rural students in South Africa are poorly prepared academically and socially for university,17 a mentoring and support programme is in place to ensure that they are able to address the academic and social issues they face as soon as possible, thus increasing their chances of success.15

In 2008, a full-time student mentor was employed to ensure that this essential support was provided consistently to all students. In 2010, this was augmented by the establishment of a network of volunteer mentors (called local mentors) throughout the country. Local mentors are not necessarily HCWs as their role is not to provide additional tuition, but to hold students accountable for obtaining the support they need through specific university departments or student support services. Local mentors are situated close to the campuses of the 16 different tertiary institutions across South Africa. All first and second year students, as well as struggling senior students, are allocated a mentor with whom they have monthly meetings. Challenges and possible solutions are discussed, with the student being held accountable for implementation of the solution plan. Local mentors report to the student mentor who visits each student once a year.

Holiday work

As part of the mentoring support programme, all students are required to do a minimum of four weeks of holiday work at their local hospital each year. This allows students to complement their theory with practice as they work under the supervision of hospital staff, which in turn has a positive impact on their university performance. In addition, they build relationships with the hospital staff and recognise the need to return and address staff shortages once qualified. Student holiday work gives the hospital the opportunity to groom students to become the employees the hospital desires.

Student life skills/Imbizo

A student gathering (imbizo) is held at the end of each year where issues such as effective self-management, personal development and other relevant matters (HIV and AIDS, financial management, relationships, etc.) are discussed. The imbizo is intended to provide the space to discuss important non-academic matters and groom students to become empathetic, compassionate, and competent HCWs willing to serve their communities.

Graduation, employment, and work-back

Some health disciplines require UYDF graduates to undertake a compulsory internship training at regional or tertiary hospitals not situated in rural areas. These graduates are subsequently employed in rural district hospitals, ideally the hospital that they were selected from, or a hospital within their district, in order to honour their work-back contract. Graduates are required to work one year for every year of support received from the scheme. Employment of graduates is the responsibility of the participating hospital and the provincial DoH. Until 2009, employment of graduates was based on an informal agreement with the KZN DoH. This process was strengthened in 2010 when a Co-operation Agreement was signed between the UYDF and the KZN DoH Department.

Support of graduates in the workplace

An initiative is in place to assist new graduates with integrating quickly into their work environment. This involves senior UYDF graduates assisting new graduates to adapt from university life to the hospital work environment.

Health care workers in rural areas often feel isolated and their professional development restricted due to lack of personal and professional development opportunities.18 In order to retain qualified staff in rural hospitals, the UYDF provides financial support for graduates and other professional hospital staff to acquire additional clinical or procedural training through attending short courses or distance-based learning programmes. Support is also provided

A rural scholarship model
for graduates to obtain the necessary management and financial skills should they be interested in assuming a management role in the hospital. These interventions are in line with the World Health Organization guidelines, which cite medical education, regulatory interventions, financial incentives, and personal and professional support for rural practitioners as important factors in retention.18

Financial resources to run the scheme

The financial resources required to run the scheme are raised from South African companies (corporate social investment), South African trusts and foundations, and international foundations interested in the development of the public health system and/or youth development. In 2011, UYDF entered into a partnership with the NSFAS, wherein some of the UYDF students’ tuition and residence fees are paid by NSFAS. Currently, the full cost of supporting a student, including mentoring support, is R115 000 (US$7 600) per student per year.

Each component described above adds strength and value to the overall scheme, thus all the components are deemed to be critical in a successful rural scholarship scheme (Figure 1).

Application of the UYDF model

Implementation of the UYDF model requires a good relationship between the local hospital and UYDF. The Foundation’s involvement with a particular district hospital is conditional upon the entire hospital management understanding the initiative and agreeing that the hospital will be an active partner. The Foundation provides hospital management with bi-annual updates.

In reality, it is sometimes difficult to keep local hospitals engaged as they have many other priorities and are often working in resource-limited environments. The UYDF undertakes the school marketing because local hospitals do not have the time or resources to perform the function adequately. For holiday work to be productive, hospital staff must be supportive of the initiative to ensure that students are mentored and exposed to their full scope of practice.

Mentoring support forms the backbone of UYDF’s success, leading to a consistently high (above 90%) annual pass rate, and graduates with a passion to serve their communities. The use of local mentors has ensured that students on all campuses countrywide are able to have face-to-face meetings with their mentors. The provision of mentoring support is also cost effective, at approximately R10 000 per student per year. If implemented nationally, this simple yet highly effective system of support could have a huge impact on the national university pass rate.

When seeking employment in the KZN DoH, the details of potential graduates are submitted to the Department in April of the preceding year. Although KZN provincial bursary holders are given preference over UYDF graduates in terms of available posts, UYDF graduates are appointed in the same way as provincial bursary graduates, should funded posts be available.

UYDF graduates and other HCWs can access financial support for professional development courses enabling them to remain current in their discipline. Since these HCWs are employed, the UYDF only makes a contribution to the total cost.

Achievements of the UYDF model

The five-year (2013–2017) average annual university pass rate achieved by UYDF students has been 92%, with the majority of students completing their degree within the minimum time, or minimum time plus one year. Of the 32 students who were due to complete their studies in 2017, only one student required an additional year of study, and a further two medical students who were to complete in December 2017 required an additional six weeks. This is in contrast to trajectories reported by other South African studies. For example, one 2016 study found that 45% of all undergraduates and 70%
of students on financial aid, never graduate.20 The Department of Higher Education and Training, which provides throughput rates for full-time students studying four-year health science degrees, reported that after four years 53% of students complete and 21% drop out; after five years 69% complete and 21% drop out; and after six years 75% complete and 25% drop out.21

To date, 337 graduates in 16 different health disciplines have been produced, of which 113 are doctors. All graduates have taken up employment in rural hospitals to honour their work-back obligation, and as at December 2017, 145 had completed their entire obligation. Ten graduates [3%] bought themselves out before completing their work-back obligation (8 doctors, 1 psychologist, and 1 physiotherapist), while 9 graduates (2.7%) defaulted by either not working or paying back. This represents a total of 5.7% of graduates who either bought themselves out or who are defaulting; again a stark contrast with international findings. A review of the Queensland Health Rural Scholarship Scheme, which focused on allied health care professions, reported that 13.7% of the participants had broken their service bonds either before graduation or before completion of their service period.22

Of the 145 graduates who have no further work-back obligations, 63% (n = 91) are still working at a rural hospital, with an additional 6% (n = 8) working for rural-based non-governmental organisations (NGOs). Nineteen percent (n = 27) are working in the urban public health sector, while 10% (n = 15) are working in the private sector. The remaining 3% (n = 4) are specialising (statistics as at 31 December 2017).15 The high percentage of UYDF graduates still working in rural areas after their work-back obligations are complete confirms that investment in the training of rural youth has a positive effect on staffing rural hospitals in the long term.

Discussion

Despite the odds against rural students completing their tertiary education (due to poor quality of primary and secondary education, especially in mathematics and science), the UYDF scholarship scheme has demonstrated that this is indeed possible given adequate support, with 337 students graduating over the last 19 years. These students all came from rural areas and rural quintile 1 and 2 non-fee paying schools. This suggests a significant level of success when compared with national norms.17,20,21

A similar scheme, the Wits Initiative for Rural Health Education (WIRHE),23,24 located within the Centre for Rural Health at the University of the Witwatersrand, operated in North West and Mpumalanga provinces from 2003 to 2014. The major difference between the two schemes is that the UYDF model is district hospital-based, while the WIRHE scheme was district focused. By the end of 2011, the WIRHE programme had produced 23 graduates across seven different disciplines.25 However, due to financial constraints the North West DoH did not employ WIRHE graduates produced after 2011, thus the outcomes of the initiative were not achieved.26

The KZN DoH has a provincial bursary scheme, in addition to the Cuban training programme and nurse training programme, to improve human resources for health (HRH) in the province. The 2014/15 KZN DoH Annual Report indicated that the new “Decentralised Training in a PHC Model” was at an advanced stage and was expected to have a significant impact on throughput as well as addressing inequity between urban and rural areas and the increased intake of health science students. The report further highlighted that the University of KwaZulu-Natal was planning to double the intake of health science students (including medical, nursing and all allied workers) over the next five years in line with identified HRH needs in the province.26 According to the report, a total of 854 bursaries were awarded to health science students in the 2014/15 period and a further 30 students were sent to India to study pharmacy (20 students) and medical imaging technology/ultrasonography (10 students). Ninety-five students were sent to Cuba, which increased the number of South African students studying in Cuba to 789.26

While the KZN DoH made a huge investment (R243 million) in HRH training in the 2014/15 period, this has not been sustained.26 Only 57 bursaries were awarded to health science students in the province in 2015/16, and in 2016/17 this decreased to 16 bursaries27 due to financial constraints. This has also impacted negatively on the employment of bursary holders (including UYDF bursary holders) in areas of greatest need. Many of the vacant posts have now become non-funded posts, at both hospital and district level, despite there still being a need for more staff in rural and underserved areas. The implications of such a drastic reduction in student intake are likely to be felt for years to come.

Broader application of the UYDF model

The UYDF model lends itself to training healthcare professionals for a particular purpose; in the case of UYDF, for rural service. Extensive interaction with students from selection to graduation allows UYDF to inculcate its vision, namely to address the shortage of HCWs in rural hospitals and to improve healthcare delivery to rural communities. Through application of the UYDF model, students understand that they are being supported for a greater purpose, rather than for their personal benefit alone. This is in contrast to the KZN provincial bursary programme where students are selected without interviews, and are financially supported throughout their university studies with very little contact with the Department. The result is that there is often an incongruence between the objectives of these graduates and those of the Department, as nowhere in their training have the students been sensitised to the purpose and objectives of the Department.

Policy implications

In order to be implemented successfully, NHI will require a sustainable supply of competent and committed HCWs willing to live and work in underserved areas – very typical of UYDF graduates. If the UYDF model is utilised, this will allow the National Department of Health to produce HCWs who understand their role and function within the NHI, and who are therefore fit for purpose.
Impact on National Health Policy

South Africa’s national health policy is centred on the improvement of health for all through removal of barriers to healthcare access and through reduction of health inequalities. These priorities are addressed in the activities of the UYDF, as the Foundation contributes directly to the development of skilled personnel who work to improve population health.28

Perhaps the most important contribution of the UYDF to national health priorities is the development of a critical mass of healthcare professionals willing to work in rural areas, which is the focus of the HRH strategy.1 These health professionals are being placed in rural areas and are critical to the realisation of universal health coverage and the implementation of NHI.28

Return on investment

The UYDF objective of addressing staff shortages in rural areas through investment in rural youth results in a dual benefit: the community benefits from the UYDF graduates’ work, and the individual benefits from the opportunity to become a qualified HCW. A 2016 study by a health economist on return on investment, using economic data from UYDF, indicated that it cost R186 million to produce 254 graduates (2015 graduate numbers).28 The study also indicated that these graduates would have lifetime earnings of R4 billion (using 2015 figures), and that they will pay approximately R1.2 billion in income tax. This clearly shows that the investment in training HCWs gives an excellent return. This is even more significant given that the focus is on investing in youth, as youth unemployment rates in South Africa and the world are unacceptably high.

Conclusions and recommendations

The UYDF experience proves that:

➢ rural students from quintile 1 and 2 non-fee-paying schools can succeed at university if provided with the necessary financial, academic and social mentoring support;
➢ that graduates will return to work in their local hospitals if it is a condition of support;
➢ and that training of HCWs who remain and work in South Africa is an economic investment.

The following critical and complementary components of the model must be considered for inclusion in any similar scheme:

➢ A shared vision of commitment to rural health should be created;
➢ Schemes should be embedded in a rural context; and
➢ Multi-faceted support should be provided.
References


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