

# 'Dentistry: Not a Critical Skill?'

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## SUMMARY

**Introduction:** Dentistry has not been allocated 'Critical Skills' status in South Africa after the repeal of the previous 'Exceptional Skills' permit, thus making it impossible for a foreign-born dentist to obtain a temporary or permanent work permit on the basis of his/her qualification alone.

**Aim:** To determine and discuss, on a need basis, whether Dentistry should be classified as a critical skill.

**Objectives:** 1) Compare the current SA ratio of one dentist per 10,000 population with WHO recommendations. 2) Obtain the ideal health care worker: population ratio for other health care fields listed as Critical/Scarce skills 3) Determine whether Dentistry meets the parameters of a 'Critical Skill'

**Design:** a descriptive study, with aggregated data.

**Methods:** Data was collected from: 1) Health Professions Council of South Africa (HPCSA); 2) The WHO country data on health workers, 3) Health Systems Trust (HST), 4) Analysis of various 'Scarce Skill Lists.'

**Results:** There is a comparative shortage of dentists, and the percentage increase required to achieve WHO recommendations is greater than for other professions already classified as 'Critical Skills.'

**Conclusions:** There needs to be a more scientific, evidence-based approach to classifying professions as Scarce Skills. In light of the evidence Dentistry should be considered as a Critical Skill.

**Keywords:** dentists in South Africa, scarce skills, residency dentists South Africa

## INTRODUCTION

In June 2014, the 'Exceptional Skills' work quota permit for dentists was repealed. This permit had made it possible for foreign-born dentists to obtain permanent residence

## ACRONYMS

<b>GTC:</b>	German Technical Cooperation
<b>HPCSA:</b>	Health Professions Council of South Africa
<b>HST:</b>	Health Services Trust
<b>WHO:</b>	World Health Organisation

without a five-year-waiting period. Prior to 2014, both the definition and classification of professions that might have been considered as 'Exceptional Skills', were open to interpretation. It prescribed that a person was to obtain:

*'A letter from a foreign or South African organ of State or from an established South African academic, cultural or business body, confirming the applicant's exceptional skills or qualifications.'*

A dentist born outside South Africa could obtain a letter from the Department of Health confirming a shortage of dentists in South Africa, and thereafter, could apply for an 'Exceptional Skills' work quota permit. With the 'Exceptional Skills' permit; foreign-born dentists were granted temporary residency. Applications for temporary residency could have been made from outside of South Africa. This temporary residency could then have been easily converted into permanent residency, within an approximate waiting period of eight to twelve months.<sup>1</sup>

The Immigration Regulation of 2014 marked the commencement of the Immigration Amendment, Acts of 2007 and 2011.<sup>3</sup> The regulation repealed the 'Exceptional Skills' Visa, replacing it with the current 'Critical/ Scarce Skill's Visa.' Dentistry has been omitted as a Critical/Scarce Skill. Under the umbrella term of Health Professionals, Public Health Managers, Public Health Physicians, Medical Practitioners, Nursing Professionals, Veterinarians, Child and Family Health Nurses and Pharmacists have been described as meeting the criteria of being Critical Skills.<sup>3</sup> Many foreign born dentists, including those with South African qualifications, have thus had to explore other means of securing work permits in South Africa.

## LITERATURE REVIEW

In a 2007 briefing paper, the National Skills Authority expounded on the definitions of the then proposed Scarce and Critical Skills Regulations. The briefing papers were commissioned by the South African Department of Labour, and funding was obtained from the German Technical Cooperation (GTC).<sup>4</sup>

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**Table 1:** The number of professionals in categories classified as critical skills (and Dentistry) to number of professionals recommended by WHO for effective health services<sup>9</sup>

Profession classified as a critical skill	Number of professionals in SA <sup>7</sup>	Number of professionals per 1000 population SA <sup>9</sup>	WHO recommendations for profession per 1000 population <sup>8</sup>	Shortage of professionals	Number of practitioners required to meet shortfall (if any)
Public Health Managers	NO DATA AVAILABLE				
Public Health Physicians	13, 593	0.32	1	Yes	39, 387
Medical Practitioners (Including Specialists)	41, 132	0.77	1	Yes	11, 848
Veterinarians	2, 400 <sup>9</sup>	0.255 (Animal Population)	0.65 (Animal Population)	Yes	3, 710
Child and Family Health Nurses	129, 015	2.43	2.4	No	0
Pharmacists	13, 364	0.25	0.5	Yes	13, 126
Dentists	5, 856	0.11	0.5	Yes	20, 634

The definitions were stated as follows:

'Scarce Skill' refers to an inability to find suitably qualified and experienced people to fill occupational vacancies either at an absolute level of scarcity (no suitable people available) or at a relative level of scarcity (no suitable equity candidates available); while 'Critical Skill' refers to an inability of people to perform at the level of occupational competence required due to gaps in their skills' profiles.<sup>4</sup>

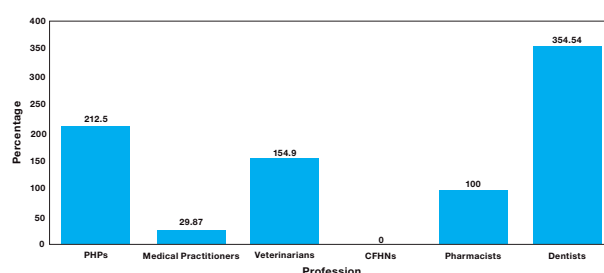
The paper <sup>4</sup> later acknowledged the ambiguity and lack of research on the topic:

*'Unfortunately, the understanding and application of these definitions – as well as the development of measures to identify and distinguish between them have proven to be both complicated and contested.'*

A literature search was undertaken, seeking relevant articles published in the past ten years. PubMed searches were conducted using the limits 'English language' and 2005 to 2015. On PubMed a search of keywords 'dentist AND skills visa' yielded two results, 'dentist AND immigration' yielded 45 results, 'dentist AND immigration' and 'dentist AND emigration' produced 34 results. There were no papers of South African origin.

In the United States, all foreign-born dentists who desire to practice are required to have a valid legal visa status or be a permanent resident or citizen of the United States. It was acknowledged that obtaining a visa is a long and cumbersome process, which requires adequate planning on the part of the potential employer and the foreign-trained dentist.<sup>5</sup> However, a foreign-born dentist may practice privately, even without permanent residence or citizenship status, provided that an advanced dental degree had been achieved through a two or three year graduate programme.<sup>5</sup> The same paper also reported that refugee and asylum seekers are allowed to work in private practice in the United States.

Another study published in 2010 found that: 'long term solutions to the misdistribution of dentists that involve foreign trained dentists need to ensure that dentists locate to and remain in areas with the greatest need'. The researchers also reported that policies that encourage the relocation of foreign-trained dentists will potentially result in a 'brain drain' in their home countries and have ethical implications. This is said to decrease the skill pool, especially



**Figure 1:** Percentage increase by profession required to meet WHO recommendations

in developing countries. However, it was the researchers' view that 'foreign-trained dentists will continue to be an important part of the dental workforce (in the USA).'

## AIMS

The aim of the study is to discuss, and possibly determine, on a need basis, whether Dentistry should be classified in South Africa as a Critical Skill.

## OBJECTIVES

The objectives of this study were:

- To compare the existing ratio of one dentist per 10, 000 population in South Africa (SA)<sup>7</sup> to the distribution recommendations of the World Health Organisation (WHO).
- To obtain the ideal ratios for health care worker per population for other health care fields currently listed in SA as a Critical/Scarce Skills (as determined by Government Gazette, 3 June 2014).<sup>8</sup>
- To determine whether Dentistry in South Africa meets the parameters of a 'Critical Skill.'

## MATERIALS AND METHODS

Data was collected from the following sources:

- Health Professions Council of South Africa, providing data on health workers.
- The World Health Organisation (WHO) providing country by country data on health workers.<sup>9</sup>
- Health Systems Trust, providing data on health workers<sup>10</sup>
- Analysis of the Scarce Skill Lists of South African, Skills Education and Training Authorities (SETAs)<sup>11,12,13</sup>

An analysis was made of:

- The National Skills Authority – Briefing Paper: Scarce and Critical Skills (2007)<sup>4</sup>

**Table 2:** Analysis of Dentistry according to the 'Ranking Scorecard for the National Scarce Skills List 2014'<sup>11</sup>

Criteria	Points Allocation	Maximum Score	Score for Dentistry
1	Scarce Skills list (2013): 1 point is allocated to an occupation if it is identified in a specific Sector Education and Training Authority Scarce Skills List (21 SETAs).	10	2 <sup>12</sup>
2	Pivotal skills list (2013): points are allocated to an occupation if it is identified in a specific SETA Scarce Skills List (21 SETAs).	20	20 (Identified 5 or more times by SETA'S) <sup>11-13</sup>
3	Joint Initiative on Priority Skills Acquisition (JIPSA): 10 points each are allocated to an occupation if it is identified by JIPSA.	10	10 <sup>13</sup>
4	National Development Plan (NDP): 5 points are allocated to an occupation if it is identified in the NDP.	5	5 <sup>11</sup>
5	Industrial Policy Action Plan (IPAP): 5 points are allocated to an occupation if it is identified in IPAP.	5	0
6	Job Opportunities and Unemployment Report (JOUR): Points are allocated to an occupation if it is identified in the index.	10	10 <sup>19</sup>
7	Profession: 20 points are allocated to a profession if it is identified as scarce.	20	20 <sup>12-14</sup>
8	Strategic Integrated Projects (SIPs): 10 points are allocated to an occupation if it is identified as scarce in the SIPs List.	10	10 <sup>12</sup> (As part of broader National Health Insurance goals)
9	Study Duration: 10 points are allocated if an occupation requires a minimum of three years of formal study.	10	10
		100	87

- The Critical Skills' List, published in the 'Health Professions and Related Clinical Sciences Umbrella' (as determined by Government Gazette, 3 June 2014).<sup>8</sup>

For each category of Health Care worker, a ratio was determined between the registered number of practitioners and the total population. In the case of the veterinarians, the total number of domestic animals was used in estimating the ratios.<sup>14,15</sup> Those South Africa ratios were compared with the internationally accepted "ideal ratios," enabling the calculation of how many additional practitioners were required in each instance.

It was unclear whether the field of 'Child and Family Nursing' referred to: critical care child nursing, paediatric nursing, and child nursing or encompassed all these disciplines. However, the inclusion of the word 'family' in the title seems to denote that the classification may have broader applications.<sup>16</sup> Thus all registered general nurses have been included in the population data.

## STATISTICAL ANALYSIS

Although a statistical analysis was performed, this paper reports only the essential facts based on population ratios derived from total population levels and using aggregated data.

(The analysis used Epi Info (Version 7.0 for Windows) with alpha set at  $p = 0.05$  for Proportion Test Calculations.)

## RESULTS

The population of South Africa is assumed to be 52.98 million. The calculations of the current ratio of registered practitioner per 1000 population (humans or animals) yielded, in all categories except Child and Family Health Nurses, figures well below the WHO recommended ratios (Table 1) These data reveal that South Africa is adequately provided with Family Health Nurses but requires nearly three times as many Public Health Physicians and nearly twice as many Pharmacists. Medical Practitioners are in more reasonable supply with only an additional one third of the current total required, but Veterinarians are in

shorter supply, requiring one and a half times the current registrations to meet international standards. Dentists however are lagging well behind in numbers, these data showing that an additional twenty thousand plus are needed. This translates to three and a half times the current registered number, not all of whom are in practice.

There were no data available for Public Health Managers, although this category could include any health care worker, with a relevant qualification in public health.

Figure 1 shows the percentage increase of professionals in professions classified as critical skills (and Dentistry) required to meet WHO recommendations for the number of professionals in the respective fields. An increase of public health physicians from 0.32 to 1 per 1,000 population would translate to a required 212.5%. Similarly, the number of pharmacists would need to be increased by 100%, veterinarians by 150.9% and medical practitioners by 29.87%. Since CFHNs currently meet WHO recommendations, an increase would not be applicable. It is evident that Dentistry would require the greatest percentage increase to meet WHO recommendations (354.54%).

Dentistry has been mentioned as a scarce skill more than five times by two SETAs namely the Public Service SETA (PSSETA)<sup>8</sup> and the Health and Welfare SETA (HWSETA).<sup>12</sup> Perhaps it would be illogical to expect that Dentistry (and any other medical profession) should be mentioned by non-healthcare related SETAs (e.g. Safety and Security SETA, Transport SETA etc.) and possibly 'Criteria 1 and 5' of 'Table 2' need to be revisited, as the criteria may not be pertinent for highly specialized fields. Dentistry has been recognized as a needed skill by the JOUR,<sup>12</sup> JIPSA<sup>13</sup> and the NDP.<sup>17</sup> The NHI is one of the 18 SIPs, is classified as a 'social expenditure SIPs'<sup>18</sup>, and Dentistry has been included in the broad plans to increase capital expenditure to meet the requirements of the NHI.<sup>18</sup> The current study period for a dental practitioner is five years (and one year of community service); therefore, ten points have been recorded for criterion nine (Table 2), Dentistry.



## DISCUSSION

A recent study by the Department of Labour identified the number of vacancies for dentists in the current South African private and public sector as 45 in total. The unemployment indicator was, however, difficult to establish. From HST data, the percentage of unemployed dentists in the public and private sectors suggests underemployment, rather than unemployment.

It may be noted that there are currently 1,056 dentists<sup>9</sup> servicing the public sector. There are approximately 42,384,007 South Africans utilising the public health sector for medical and dental treatment, and these data translate to 0.02 dentists per 1000 population (i.e. one dentist per 50,000 people). This is far below the national average of 0.11 dentists per 1,000 population and a staggering 2,400% below current WHO recommendations.<sup>9</sup>

Perhaps categories such as Industrial Action Plan should have been included as 'bonus points' for health care scarce skills status?

Dentists have been listed on the Canadian National Occupation Classification List (NOC) under the category 'technical and skilled occupations in health', which would fast track Canadian immigration processes after registration with the Health Council of Canada (applicants could even qualify for Express Entry). Currently, Canada meets the WHO guidelines on the number of registered dental practitioners per 1,000 population (0.53). New Zealand has also placed Dentistry on its 'immediate skills shortage list' and its 'list of skilled occupations.' Thus, a dentist relocating to New Zealand could apply either as a 'skilled migrant' or for an 'essential skills' visa.

However, in July 2015, Australia removed Dentistry from its SOL (Skilled Occupations List). Dr Rick Olive AM RFD, President of the Australian Dental Council stated that, "The reality is there is an oversupply of dentists in Australia." Australia, with a population of 23.13 million has 19,462 dentists, which is 0.84 per 1,000 population, well above WHO recommendations.

Dentistry was measured according to the 'Ranking Scorecard for the National Scarce Skills List 2014,' and scored 87 out of 100 points (Table 2). The National Scarce Skills List is going to be reviewed every 2 years.<sup>25</sup> The list may be reviewed earlier, should the Minister of Higher Education and Training deem it necessary.<sup>25</sup> In the same paper, the Department of Higher Education and Training went on to state that,

*"The formulation of the National Scarce Skills List should be viewed as a dynamic process that is subject to further continuous iterations and methodological improvements based on substantive proposals from the public. It will be interesting to note that Dentistry did not make the top 100 proposed occupations for the National Scarce Skills List of 2014."*

Mr Siphelo Ngcwangu, a researcher at the Centre for Researching Education and Labour, University of the Witwatersrand stated that,

*"The methods, consultations and literature review sources used to create the Scarce Skills publication privilege*

*government-articulated priorities and those of industry and capital... A ranking scorecard is used to determine demand for a particular occupation based on an analyst's review of these particular sources."*

Reflecting on its own methodology, the Manufacturing, Engineering and Related Services SETA reported that: *'The development of the 'scarce skills' list... did not, in fact, reflect genuinely scarce occupations with any level of accuracy.'* It added that, *'the priority skills list presented in the scarce skills publication of 2012/13 was not scientifically confirmed or quantified.'*

From Figure 1, it is evident that Dentistry is a comparatively understaffed profession in South Africa (as compared with other 'critical skill' professions) and below the international average of 0.3 practitioners per 1,000 population. Since the HPCSA requires permanent residency for registration in the category 'Independent Practice,' a foreign-born dentist is limited to work in the category 'Public Service' for a period of five years (the minimum expiry time period before permanent residence is granted as 'residency on other grounds'). Whilst there appears to be so-called underemployment of dentists in the public sector<sup>19</sup>, foreign-born dentists are nevertheless unable to obtain 'Independent Practice' registrations, due to the compulsory five year waiting period before applying for permanent residence, often resulting in a predicament of their being unable to earn an income.

Perhaps the only way to circumvent this cycle would be to apply for a 'Financially Independent' visa, where an applicant can demonstrate that his/her net worth exceeds 12 million rand. This permanent residency visa has a processing fee of R120,000, and it requires that an applicant proves a net worth greater than 12 million rand.<sup>1</sup> By comparison, under the previous 'Exceptional Skills' work quota permit, a foreign-born dentist would have been eligible to apply, at an application fee of a mere R 1,520,<sup>1</sup> for permanent residency immediately, without a five year waiting period.

## CONCLUSION

Based on the comparative scarcity of dentists in South African, Dentistry should be classified as a 'Scarce Skill'. There needs to be a more scientific and evidence-based approach to the listing of scarce skills professions utilising HST, WHO, vacancy, employment and the population needs data. Currently, there are many noted inaccuracies and indeed, room for bias, in the methodology of the assessment of professions for 'Scarce Skills' classification. The recruitment and retention of foreign dentists would be an effective method of addressing the evident shortage of professionals. Classifying Dentistry as a scarce skill would also allow for foreign-born dentists, without permanent residency or citizenship, the ability to practice in the private sector. This is perhaps the only means of professional income for foreign-born dentists, because of the relative underemployment in the South African public sector. The scarce/critical skills visa would fast-track application processes and allow for an increased recruitment of foreign born dentists into the country.

It is envisioned that this paper will be submitted during the 2016 'call for public comments' on the Scarce Skill list.

## Limitations

The study has assessed WHO recommendations of practitioner to population ratio. The need for practitioners may differ from country to country, due to the demand of particular health services in a specific region. Since there is no study which assesses the exact number of practitioners required by South Africa for the optimal functioning of health care services, the recommendations by WHO on the number of professionals per 1000 population were used as guidelines. The accuracy of the HST data used in this study is also questionable because the number of registered dentists on the database may differ from the actual number of practicing dentists. Furthermore, numbers of registered dentists may have emigrated, passed away or are not currently practicing in the profession.

## Ethical considerations

An ethical waiver was obtained on the 20/5/2015 (W CJ 150520 1) from the Medical Research Ethics Committee, University of the Witwatersrand.

**Declaration:** No conflict of interest.

**Disclosure:** The researchers do not have any financial interest in the products used in this case.

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