Nurse shortage in South Africa

Nurse/Patient ratios

Report by Solidarity Research Institute

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1. Introduction:

That South Africa's medical system is not functioning optimally is incontrovertibly true. The object of this report is not to examine all of the problems that exist in this sector. It specifically focuses on the shortage of nursing manpower and the reasons for said shortage. These issues are explored in Section 2 of this report. Research shows that a shortage of nurses contributes to death in hospitals that would otherwise have been avoidable. The shortage of nurses is therefore literally a matter of life and death.

Internationally, many other countries and regions also struggle with similar shortages. In the American state of California and the Australian state of Victoria, legally enforceable ratios of nurses to patients have been introduced. These ratios have had a positive effect on nurse training, patient safety and working conditions in hospitals. The multitude of benefits of introducing such a system in South Africa is explored in Section 3 of this report.

Hospitals, patients and nurses in South Africa need to be aware of the fact that having too many patients per nurse degrades hospital care. It places unnecessary stress on hospital staff and increases the risk of preventable conditions progressing to life threatening stages for patients. The international examples show that qualified nurses who have withdrawn from the profession returned after nursing ratios were implemented. In addition, the number of young people choosing nursing as a career also increased. There is no reason to think that the same would not be true for South Africa. Nursing ratios contribute to the conditions for their own success in a virtuous circle.

This report does not include recommendations on the method of nurse training. It also does not focus overmuch on the spatial distribution of nurses. It must be noted, however, that in both of these areas, South Africa also has problems. The main focus is to explore and explain the benefits of legally enforceable staffing ratios for hospitals.

* For the sake of brevity, the phrase "nurses registered with the SANC" used throughout this report in some cases refers to enrolled and auxiliary nurses in addition to registered nurses.

2. The South African situation – an overview:

South Africa is ahead of the rest of Africa in terms of health workers per capita. The absolute minimum standard set by the World Health Organisation is 228 health workers for every 100 000 people (or 438 people per health worker, maximum). Africa as a whole falls below this standard, with 185 health workers for every 100 000 people. Even though South Africa rises just above the WHO's minimum standard, the organisation reports that we still have only 468 health workers for every 100 000 people. The definition of health workers includes doctors, registered nurses, auxiliary nurses and other medical personnel. The WHO's minimum ratio for nurses to population is 200:100 000 (or 500 people per nurse, maximum).

Geographical Distribution of the Population of South Africa versus Nursing Manpower 2008

Table 2.1

		Population	Nursing Manpower as at 2008/12/31				In Training as at 2008/12/31		
Province		**2008**	**Registered**	Enrolled	Auxiliaries	**Total**	Students	Pupils	Pupil N/A
Limpopo									
	Females	2 768 100	**7537**	2836	6823	**17196**	1277	267	332
	Males	2 506 700	**835**	363	853	**2051**	476	37	92
	- Total	5 274 800	**8372**	3199	7676	**19247**	1753	304	424
North West									
	Females	1 756 200	**6342**	1996	4048	**12386**	1094	21	130
	Males	1 668 800	**705**	191	538	**1434**	335	7	24
	- Total	3 425 000	**7047**	2187	4586	**13820**	1429	28	154
Mpumalanga									
	Females	1 859 100	**4903**	1630	3063	**9596**	286	195	85
	Males	1 730 900	**400**	144	292	**836**	140	26	31
	- Total	3 590 000	**5303**	1774	3355	**10432**	426	221	116
Gauteng									
	Females	5 248 600	**26874**	10379	15042	**52295**	3299	3894	2330
	Males	5 198 500	**1312**	682	1068	**3062**	701	361	134
	- Total	10 447 100	**28186**	11061	16110	**55357**	4000	4255	2464
Free State									
	Females	1 506 800	**6506**	1278	2674	**10458**	751	186	133
	Males	1 370 900	**783**	228	339	**1350**	245	47	40
	- Total	2 877 700	**7289**	1506	3013	**11808**	996	233	173
KwaZulu Natal									
	Females	5 321 100	**21188**	14307	10305	**45800**	2187	4242	970

	Males	4 784 400	**1280**	1517	1075	**3872**	614	469	95
	- Total	10 105 500	**22468**	15824	11380	**49672**	2801	4711	1065
Northern Cape									
	Females	580 500	**1915**	405	1195	**3515**	232	--	92
	Males	545 400	**156**	30	119	**305**	58	--	51
	- Total	1 125 900	**2071**	435	1314	**3820**	290	--	143
Western Cape									
	Females	2 760 400	**13421**	4710	7527	**25658**	1437	717	365
	Males	2 501 600	**594**	244	512	**1350**	321	66	27
	- Total	5 262 000	**14015**	4954	8039	**27008**	1758	783	392
Eastern Cape									
	Females	3 441 500	**12400**	2575	4998	**19973**	2296	498	104
	Males	3 137 800	**827**	171	671	**1669**	708	146	23
	- Total	6 579 300	**13227**	2746	5669	**21642**	3004	644	127
TOTAL									
	Females	25 242 300	**101086**	40116	55675	**196877**	12859	10020	4541
	Males	23 445 000	**6892**	3570	5467	**15929**	3598	1159	517
	- Total	48 687 300	**107978**	43686	61142	**212806**	16457	11179	5058
Source: The South African Nursing Council – http://www.sanc.co.za/stats/stat2008/Distribution%202008xls.htm									

The South African Nursing Council's figures of nursing manpower as of the end of 2008 are tabled above. According to these figures, South Africa has 437 nurses for every 100 000 people. This includes the nurses in the "enrolled" and "auxiliary" categories as well. When only the registered nurses (those who have completed a four year course) are considered, the ratio drops to 222 registered nurses for every 100 000 people. This translates to a ratio of 451 people for every registered nurse.

These ratios are current when it is assumed that all the nurses who are registered with the SANC are working at the moment, and that they are working in South Africa. Under the Nursing Act of 2005, a person must be on the register or rolls of the SANC in order for them to be allowed to practice nursing in South Africa. In order to remain on the register, an annual fee has to be paid. There is abundant anecdotal evidence that many South African nurses remain registered at the SANC, but choose not to work and that many others are working in Europe, the Americas, Oceania and in the Middle-East. One study placed South Africa under the top five suppliers of nursing manpower to other countries in 2002.[1] Specific figures on

[1] Vujicic, M., Zurn, P., Diallo, K. Adams, O. & Dal Poz, M.R. 2004. The role of wages in the migration of health care professionals from developing countries. *Human Resources for Health*. Available from http://www.human-resources-health.com/content/2/1/3

emigration are unfortunately not available, but it is certain that the number of nurses that are actually working in the South African health industry at the moment is less than the number of people registered with the SANC. A 2004 study by the HSRC showed that 18% of nurses who were registered with the SANC were no longer practising.[2] If one assumes that the percentage is still the same, the number of people that every registered nurse potentially has to care for jumps to 550.

This problem is in all probability even worse, as the above figures are calculated using StatsSA's official population estimate of 48,7 million people. This number does not make provision for illegal immigrants and refugees who are living in South Africa. The actual number of people in South Africa is unofficially estimated at being as high as 65 million by one international agency. This number may be a little implausible, but even if one recalculates the ratios using a more conservative figure like 55 million, the number of people every registered nurse could potentially have to care for rises to 621. This is without subtracting the (unknown) number of registered nurses who are not working in South Africa at the moment.

Number of registered nurses

Table 2.2

	2002		2003		2004	2005		2006		2007		2008
	Registered with SANC	Public sector	Registered with SANC	Public sector		Registered with SANC	Public sector	Registered with SANC	Public sector	Registered with SANC	Public sector	Public sector
EC	11 447	4 799	11 678	5 752		12 176	6 642	12 427	6 615	12 658	6 878	7 386
FS	7 136	3 023	7 216	3 049		7 175	3 580	7 122	3 544	7 203	3 476	2 485
GP	26 734	8 074	26 871	7 924		26 754	7 587	26 884	7 539	27 201	7 250	7 663
KZN	17 758	8 770	18 343	9 139		19 445	9 531	20 202	9 793	21 131	10 591	11 973
LP	6 748	5 538	7 006	5 541		7 540	5 763	7 743	5 827	8 018	5 850	6 471
MP	4 218	2 288	4 220	2 460		4 774	2 696	4 915	2 770	5 100	2 861	3 184
NC	1 820	869	1 856	950		1 936	975	1 966	992	2 007	1 131	1 193
NW	6 265	2 996	6 330	2 934		6 495	3 053	6 620	3 029	6 733	2 864	2 862
WC	12 822	3 958	12 995	3 812		13 239	3 830	13 416	3 959	13 741	4 199	4 615
ZA	94 948	40 318	96 715	41 563		99 534	43 660	101 295	44 071	103 792	45 102	**47 834**
		42,5%		**43%**			**43,9%**		**43,5%**		**43,5%**	**44,3%**

Adapted from the Health Systems Trust - http://www.hst.org.za/healthstats/101/data

The above table is included to show that of South Africa's possible pool of registered nurses; around 44% (47 834) work in the public sector. No current figures are available on the numbers working in private hospitals. In 1999 the division was 59% public and 41% private.[3]

[2] www.thestar.co.za/index.php?fSectionId=129&fArticleId=2373406

[3] Source: Previous, unpublished study on nursing by Solidarity.

If an assumption is made that this distribution is still the same, the total number of registered nurses who are practising in South Africa would be 81 075. Out of the total pool of 107 978 registered nurses, this represents 75%. If the 18% of nurses who are no longer practising (2004 HSRC figure) is subtracted, it leaves 7% that are working outside South Africa. It must be remembered that the data that these assumptions are based on are quite old. However, it does not detract from the conclusion that South Africa does not have enough nurses. To illustrate: the estimated figure of only 81 075 practising nurses could push SA's ratio up to between 600 and 678 people per nurse!
Going back to the officially confirmed data, it is also worrying to see that in both the total number registered with the SANC and those working in the public sector, the growth rates per annum have merely been roughly holding pace with South Africa's implied population growth rate as estimated by StatsSA. This means that the number of registered nurses per capita has not increased significantly in the past few years. This is borne out by the SANC's figures: In 1998 the official ratio of people per registered nurse in South Africa was 1:463. In ten years, this has only improved by 2,5% (if official population estimates are used). This is the best-case scenario, and it still does not look good.

South Africa's services are being put under strain by economic migrants and political refugees from Zimbabwe's implosion, as well as from other neighbouring countries like Mozambique, and also from countries further afield like Ethiopia, Nigeria, Somalia, Bangladesh, etc. This is not to say that we should not allow these people into South Africa, but just that we cannot ignore the fact that we have to make provision for more people than only South African citizens. If we do not do this, we all suffer the consequences. Medical services are not like most commercial services. Someone without any money can be turned away from a bank or a book shop, but someone who is in a life-threatening situation cannot be turned away by a medical care-giver. This applies to private as well as public hospitals. If someone is injured, they are taken to the closest hospital regardless of whether they have South African citizenship. This is simply the right thing to do. It would be immoral and inhuman to do anything else. On the whole, doctors and nurses are in their profession because they feel a calling to help people. It is emotionally very difficult for them to have to turn someone away. This unavoidably leads to increased workloads for medical staff, as well as increased pressure on equipment and infrastructure in hospitals. The result can be stress-related burnout for nurses, and compromised care for patients.

These problems are greater in the provinces where the number of people per nurse is higher. The following table breaks up the ratios according to provinces.

Population per Qualified Nurse (in the same province)				
Table 2.3				
Province	**Registered**	**Enrolled**	**Auxiliary**	**Total**
Mpumalanga	**677:1**	2024:1	1070:1	344:1
Limpopo	**630:1**	1649:1	687:1	274:1
Northern Cape	**544:1**	2588:1	857:1	295:1
Eastern Cape	**497:1**	2396:1	1161:1	304:1
North West	**486:1**	1566:1	747:1	248:1
KwaZulu Natal	**450:1**	639:1	888:1	203:1
Free State	**395:1**	1911:1	955:1	244:1
Western Cape	**375:1**	1062:1	655:1	195:1
Gauteng	**371:1**	944:1	648:1	189:1
South Africa	**451:1**	1114:1	796:1	229:1
Source: SANC – http://www.sanc.co.za/stats/stat2008/Distribution%202008xls.htm				

The four provinces that experience the biggest shortages are Mpumalanga, Limpopo, the Northern Cape and the Eastern Cape. North West, KwaZulu Natal and the Free State are not very far behind. Large numbers of migrants from Zimbabwe and Mozambique put further strain on the two provinces with the least amount of nurses, Limpopo and Mpumalanga. Many migrants also live in Gauteng and the Western Cape, the two provinces with the largest number of nurses per capita. Having the largest number of nurses per capita unfortunately does not necessarily mean that all is well at all the hospitals in those two provinces; it merely signifies that conditions are, on average, better than those in Mpumalanga and Limpopo.

A further strain on health workers, once again especially in Limpopo and Mpumalanga, is the outbreak of cholera that has raged in South Africa since late 2008. This outbreak reminds us that contagious diseases are not rare in South Africa – there was an even larger outbreak of cholera in KwaZulu Natal in 2001. While the current outbreak will pass, it serves to highlight the high disease burden that South Africa has. We have one of the highest HIV/Aids rates in the world. In addition to this, virulent diseases like multi drug resistant tuberculosis, extreme drug resistant tuberculosis and malaria increases the likelihood that a South African would need medical care in a hospital. Diseases like these, especially AIDS, also increases the length of time that a person is likely to spend in hospital per visit. According to the HSRC, an HIV-positive patient generally stays in hospital four times longer than an HIV-negative patient admitted for the same condition. The high violent crime rate and equally high road accident rate also contributes to South Africans' need for hospital care. Due to South Africa's status as a semi-developed country, access to medical services are an expected right. There is

nothing wrong with this, but it does mean that the typical basic health care provision in African countries is not sufficient in South Africa. All of these factors contribute to stressful and unpleasant work environments for nurses, which can promote emigration, early retirement and lower numbers of people wanting to enter the profession.

The table below shows the percentage of vacant posts for nurses in the public sector from 2006 to 2008, as indicated on the PERSAL system.

Percentage of Registered Nurse posts vacant in the public sector

Table 2.4

	2006	2007	2008
Eastern Cape	34.0%	35.8%	53.6%
Free State	31.4%	35.7%	51.6%
Gauteng	26.0%	39.9%	34.4%
KwaZulu Natal	42.5%	42.0%	39.6%
Limpopo	15.0%	20.0%	43.7%
Mpumalanga	40.0%	40.2%	29.8%
Northern Cape	33.2%	35.9%	25.3%
North West	22.8%	42.4%	13.2%
Western Cape	22.0%	23.8%	31.0%
South Africa	31.5%	36.3%	40.3%

Adapted from the Health Systems Trust - http://www.hst.org.za/healthstats/256/data/geo

While certain figures, like the dramatic swings in the percentage for the North West province, cast doubt on the credibility of these percentages, it is still worrying to see the rise in vacant positions in the public health sector.

Registered nurses in the public sector per 100 000 population

Table 2.5

	2000	2001	2002	2003	2004	2005	2006	2007	2008
Eastern Cape	106.1	91.2	74.9	98.5	N/A	109.1	102.3	106.3	114.2
Free State	128.9	125.2	124.1	130.7	N/A	149.7	139.4	131.6	94.5
Gauteng	172.5	138.7	136.3	115.1	N/A	106.9	113.1	107.3	111.7
KwaZulu Natal	119.8	114.4	109	107.3	N/A	108.8	111.4	120.9	136.3
Limpopo	104.6	101.7	110.5	119.3	N/A	110	110.3	115.3	127.5
Mpumalanga	90.5	89	89.6	93.7	N/A	93.2	96.4	92.5	102.9
Northern Cape	122.3	119.7	107.1	127.1	N/A	144.6	126.9	147.1	155
North West	94.3	95.7	94.1	88.9	N/A	90	88.9	81	81.1
Western Cape	139.9	137.5	130	113.9	N/A	111.2	114.7	114	123.4
South Africa	**120.3**	111.9	106.8	107.1	N/A	109.2	109.5	110.4	**116.6**

Adapted from the Health Systems Trust - http://www.hst.org.za/healthstats/72/data

When the above table is compared to the preceding one, they seem to be contradictory. According to this, the number of nurses per 100 000 people has been increasing in most provinces since 2003. However, comparing the figure for South Africa as a whole in 2000 to that of 2008, it can be determined that this apparent contradiction is probably only a result of a spatial reshuffling of nursing resources that has occurred in the public sector, or it could simply be a result of different measuring methods in the different years.

Surprising/contradictory trends aside, these figures do show that South Africa's public health sector has too few registered nurses. This indicates a compromised capacity for service delivery, as well as a stressful working environment for nurses that are currently employed, which contributes to qualified nurses seeking other employment. It also provides at least part of the reason for nursing not being a very popular career choice for young people in South Africa. It also does not inspire confidence when a provincial health department, Gauteng, declares a "hiring freeze" in public hospitals while almost 9 000 positions for nurses are still unfilled in the province.[4] The recent order in the Free State to discharge all patients except those in high care units as a result of financial difficulties is also very disturbing.[5] There have also been allegations of possible fraud in the Free State health department to the tune of R9,2 million.[6]

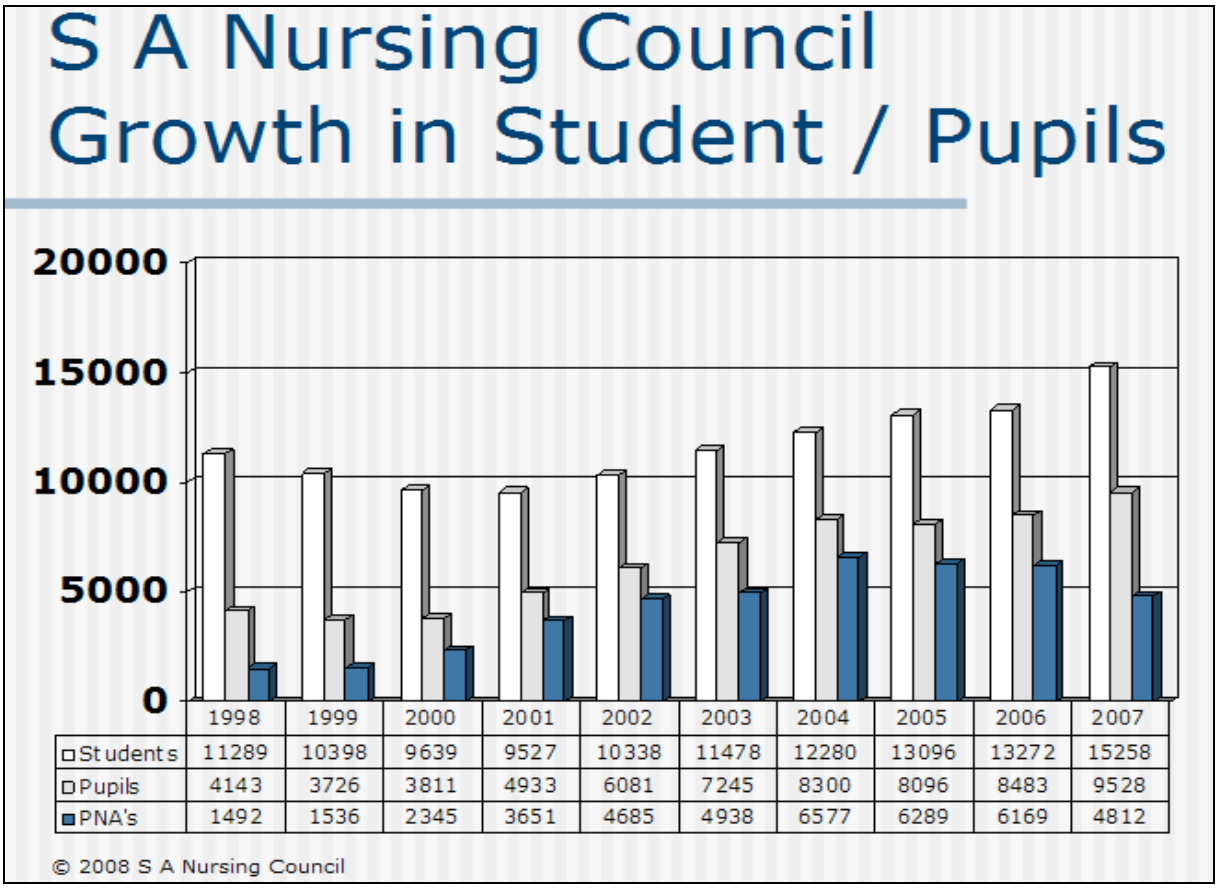
The SANC's figures on student registered nurses (the four year course), pupil enrolled nurses (a two year course) and pupil nursing auxiliaries (PNAs) (a one year course) do show that the total number of people studying nursing is increasing. These figures represent the total number of people doing the courses in each year – the figures for student registered nurses include first, second, third and fourth-years, while the figures for pupil enrolled nurses include both those in their first and second years.[7]
While this increase in student numbers is certainly a good thing, it must again be mentioned that the growth in student numbers only keeps up with South African population growth, while the ideal would be to exceed population growth by a significant margin.

[4] Reported in the Business Day on the 3rd of November 2008

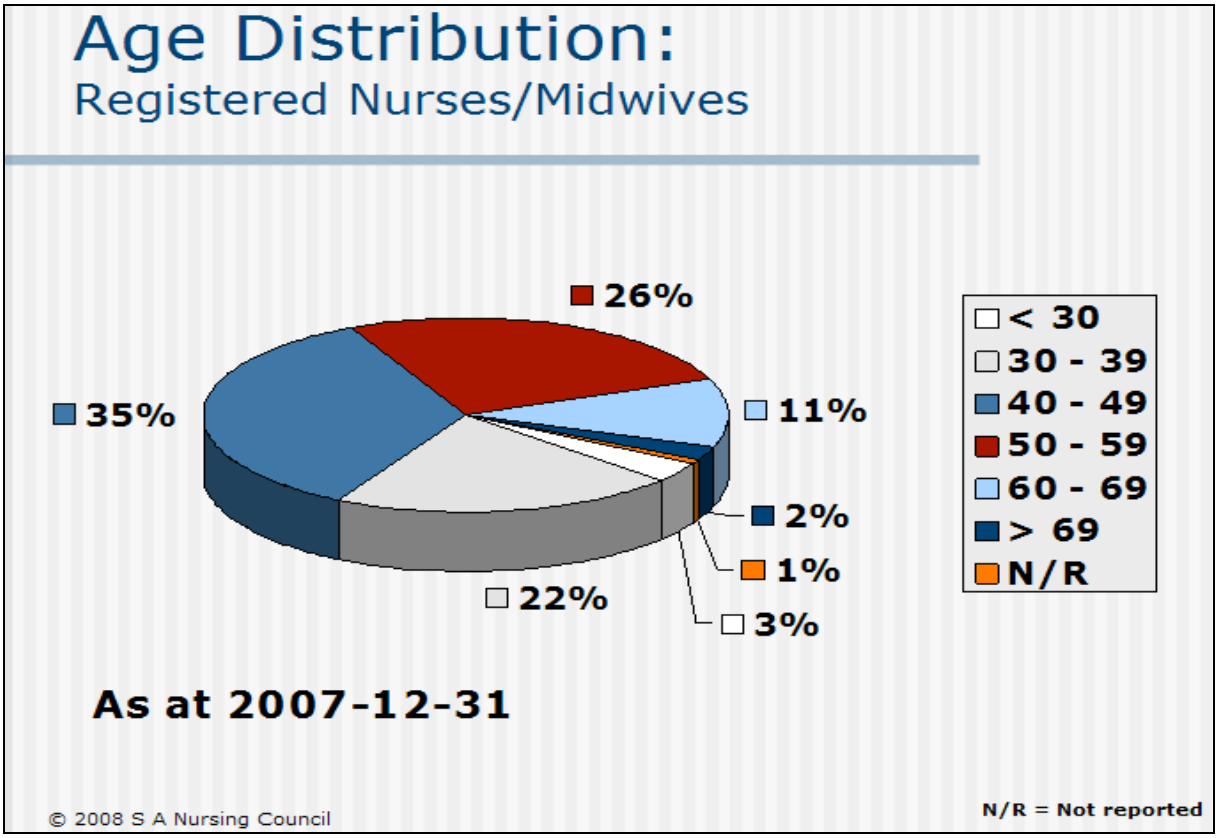
[5] www.polity.org.za/article.php?a_id=148857

[6] www.health24.com/news/Health_care/1-918,49343.asp

[7] The graph is an exact copy of the one that can be found at: http://www.sanc.co.za/stats/stat_ts/Growth%201998-2007_files/frame.htm



The following chart, also from the SANC, shows the age distribution of registered nurses.



It is extremely unsettling to look at this chart and realise that in 2007, 74% (or 76 806) of South Africa's registered nurses were more than forty years of age, while only 3% (or 3 112) were younger than 30. The fact that 26 is the average age at which student registered nurses start their four year courses could explain this, but even so, it is then still worrying to note that only 22% (or 22 834) of registered nurses were in their forties in 2007. About the turn of the millennium there was a period of lower student enrolment, which has since been turned into an upward trend, but even more students are needed to close the age-gap again.

The following table shows the number of nursing education institutions approved by the South African Nursing Council by province. Nursing education institutions have to be approved by the SANC as established by the Nursing Act of 1978 under the South African Qualifications Authority Act of 1995 in order for the nurses being trained there to be allowed to practice as a nurse or midwife in South Africa (or indeed anywhere in the world). Prospective nurses who undergo training at any non-approved institution or who do a non-approved course will only waste time and money. There are such institutions in South Africa.[8] The last column in the table is of the most importance, as it indicates the number of education institutions exclusively focused on training. The total number in the first column includes a number of old-age homes and many hospitals that are also approved to train nurses, but usually only for certain specific courses and not for the whole four-year course that a registered nurse has to complete.

Table 2.6 - **Number of nursing education institutions approved by the SANC by province**

	Total number	Number that are hospitals and old-age homes	**Dedicated education institutions**	Registered nursing students 2008	RN students per institution	Nursing students (of all 3 groups) 2008
Eastern Cape	34	25	**9**	3004	334	3775
Free State	35	28	**7**	996	142	1402
Gauteng	85	37	**48**	4000	83	10719
Natal	77	40	**37**	2801	75	8577
Limpopo	34	28	**6**	1753	292	2481
Mpumalanga	20	17	**3**	426	142	763
North West	18	11	**7**	1429	204	1611
Northern Cape	4	3	**1**	290	290	433
Western Cape	39	23	**16**	1758	110	2933
South Africa	346	212	**134**	16457	**123**	32694

Adapted from data available on the SANC website: http://www.sanc.co.za/neis.htm

[8] http://www.iol.co.za/index.php?set_id=1&click_id=13&art_id=nw20080410113840429C343396

From the data at hand it would appear that the average number of student registered nurses (all four years) at a dedicated education institution is 123. If 25% of these students graduate each year, South Africa's pool of registered nurses would grow by about 4114 every year. The fact that only 2025 registered nurses graduated in 2007 would seem to indicate that the percentage who graduate each year is closer to 13%. Extrapolating this to 2008 gives a number of 2184. This indicates a significant drop-out rate. This is not uncommon in tertiary study, but it serves to illustrate that it is not enough to get more people to start studying nursing; it must also be ensured that these prospective nurses are competent enough to be able to qualify.

The combination of a high disease burden, higher population growth than growth in nursing resources, ageing nurses, and possible maladministration of public hospital funds leads to a vicious circle where disease burdens increase because of inadequate care. As the disease burden increases, more people become dependent on hospitals and nurses' workload becomes heavier. This is a reflexive cycle that must be broken.

3. Nurse/patient ratios:

Nurse/patient ratios are calculated by dividing the number of patients in a hospital at any one time by the number of nurses working in that hospital at the same time. Even more accurate ratios are calculated by dividing the number of patients in a specific ward by the number of nurses working in that ward at that time. Different types of wards require different levels of care, as well as different skill-mixes. Patients in an intensive care ward require constant attention and complex procedures, while patients on a pre-operative ward do not require constant attention and only require relatively simple procedures. An intensive care ward therefore requires a closer nurse/patient ratio and more specialised nursing staff than a pre-op ward. These are just two illustrative examples to show that having a 1:5 nurse/patient ratio across an entire hospital may still not mean that patients will receive optimal care in all of the wards. Certain wards could still be understaffed, and the nurses there overworked.

The nurse/patient ratio ultimately determines nurses' workload, job satisfaction and effectiveness of care. This ratio also closely correlates with mortality rates in hospitals. In the US, research by the respected Dr Linda Aiken has shown that each additional patient above four per nurse causes a 7% increased probability of patients dying within 30 days of admission to a hospital. Each additional patient also increased nurses' probability of experiencing job dissatisfaction by 15%, while adding a 23% higher probability of nurses experiencing stress-related burnout.[9]
Nurse/patient ratios in hospitals are akin to teacher/learner ratios in schools. The higher the number of learners to each teacher, the more unpleasant the school becomes for both groups.

In South Africa some hospitals have ratios that go as high as one nurse for every 18 patients. Anecdotal evidence suggests that this may even be an underestimation, with ratios reaching 1:44 in extreme cases. In 2007, the *Weekend Post* reported that at one hospital in the Eastern Cape, the ratio reached 1:50 in general wards and 1:10 in post-natal wards.[10] Even at a ratio of 1:18, a nurse has only three minutes out of every hour to care for each patient, to perform all routine tasks, as well as having to handle any possible emergency. Also keep in

[9] Aiken, L., Clarke, S., Sloane, D., Sochalski, J. & Silber, J. (2002) Hospital Nurse Staffing and Patient Mortality, Nurse Burnout, and Job Dissatisfaction. *JAMA*; 2002. Cited in: O'Connor, T. 2006. Do nurse/patient ratios work? *Kai Taiki: Nursing New Zealand*.

[10] http://www.weekendpost.co.za/main/2007/08/25/news/nl02_25082007.htm

mind that nurses deal with a large amount of paperwork, stocktaking and other administration as well.[11]

Further anecdotal evidence points towards “spikes” in ratios near the end of shifts. This is caused by some nurses being dependent on public transport like taxis, buses and trains. If the transport leaves an hour before the end of a shift, these nurses have to leave early. While they are not to blame for this, it does mean that those “unfortunate” enough to have their own transport have to contend with all the other nurses’ patients for a period of time at the end of each shift.

At the beginning of 2008 it was reported that South Africa has a serious shortage of qualified personnel to run intensive care units (ICUs). According to the study commissioned by the Critical Care Society of SA, three quarters of the 448 ICU nursing managers did have ICU training, but only a quarter of their subordinates had ICU training. Furthermore, only 3,8% of nurses had neo-natal intensive care training. The study found that South Africa’s ICU units had a 1:1 nurse/patient ratio, while the CCSSA recommends a ratio of 6 or 7 nurses per patient in intensive care. This study also found that nurses working in these understaffed wards had a higher probability of burnout, as well as a higher probability of making fatigue-related mistakes.[12] [13]

Inadequate nurse/patient ratios can even lead to violence being directed toward nurses. Patients who have to wait for hours for attention do not come into contact with hospital management or health department officials. They only see the nurse walking past them on their way to treat someone else. This leads to verbal abuse and even physical attacks on nurses by patients and relatives of patients. South Africa’s high rate of injuries sustained in drunken brawls also contributes to situations like these. People who are still drunk when they arrive at the hospital often demand to be treated before others, and become violent when this does not happen. When nurses who work back-to-back shifts to try and fulfil their calling of helping people are subjected to such ungrateful attitudes, it is not surprising that some leave the profession or the country.

In certain private hospital groups, ratios of 1:5 or 1:6 are enforced, but this can be misleading. The Australian and Californian legislation that is discussed in the following

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[11] http://www.iweek.co.za/ViewStory.asp?StoryID=172021

[12] http://www.hst.org.za/news/20041748

Bhagwanjee S. & Scribante, Juan. 2007. National audit of critical care resources in South Africa; unit and bed distribution. *South African Medical Journal*, vol. 97 (3), no 12.

[13] http://www.hst.org.za/news/20041007

section refers to ratios of registered nurses to patients and do not include trainees or other care workers. Registered nurses have to complete four-year courses, while some care workers only have three months' training. Nevertheless, some South African private hospitals count both trainee-nurses and care workers as "nurses" as well when determining the ratios. This is probably done with the best of intentions, but using under qualified people to do tasks equivalent to those of registered nurses often makes the job of the one or two registered nurses in a ward even more difficult. In addition to their own work, the registered nurses then have to check up on every procedure that the less experienced staff members are performing. Due to the poor nurse/patient ratios in South Africa, these inexperienced care workers often have to carry out tasks that are outside their scope of practice. When a mistake during such a task causes a patient death or impacts negatively on their health, the care worker or the supervising nurse is often blamed unfairly.

3.1 Nurse/patient ratios – international examples:

Legally-enforceable minimum nurse/patient ratios have been implemented in the US state of California (legislation adopted in 1999 and came into effect in 2004) after intensive lobbying by the California Nurses Association. In the Australian state of Victoria similar legislation was adopted and came into effect in 2001. By mid-2006 nurse/patient ratio legislation had also been under deliberation in the US House of Representatives, the US Senate, Florida, Georgia, Hawaii, Illinois, Iowa, Missouri, New York, Oregon, Pennsylvania, Rhode Island, Vermont, and West Virginia. In many other American states (including Arizona, Maine, Ohio, Massachusetts, Kentucky, Nevada and Texas), as well as other countries around the globe (including Britain, New Zealand and Canada), groups are lobbying for the introduction of similar legislation.

The latest version of the Victorian nurse/patient ratios can be found in the *Nurses (Victorian Public Sector) Multiple Employer Agreement 2007-2011 Schedule C.*[14] The ratios are too complex to list in their entirety, so only a general extract is given below.

Victorian staffing ratios **General medical/surgical wards & ante/postnatal (Summary)**			
Table 3.1			
	Type of	Shift	Nurse/patient ratio

[14] http://www.health.vic.gov.au/__data/assets/pdf_file/0010/168247/EBA_deed_feb_08.pdf

	hospital		
General medical/surgical wards	Level 1	AM	1:4 plus in-charge nurse
	Level 1	PM	1:4 plus in-charge nurse
	Level 1	Night	1:8
	Level 2	AM	1:4 plus in-charge nurse
	Level 2	PM	1:5 plus in-charge nurse
	Level 2	Night	1:8
	Level 3	AM	1:5 plus in-charge nurse
	Level 3	PM	1:6 plus in-charge nurse
	Level 3	Night	1:10
Ante/postnatal	All levels	AM	1:4 plus in-charge nurse
		PM	1:4 plus in-charge nurse
		Night	1:6

Please refer to the complete document that is linked to in footnote 13 for further, finely-detailed information on ratios in ICUs. More information can also be found in the Victorian Health Services (Private Hospitals and Day Procedure Centres) Regulations, 2002.

The current Californian ratios are tabled below. These ratios refer specifically to registered nurses and not to other classes of nurse or care-giver. These ratios establish minimum staffing levels, and additional staff may be used, based on patient acuity. The ratios in California are defined as “patients assigned to each registered nurse”, not as an average of patients to nurses over a whole ward or over the entire facility. When nurses take breaks, another nurse must take her place for the duration of the break. Some of these strict measures are reported to cause problems in Californian hospitals. This issue is discussed later in this report.

Californian staffing ratios			
Table 3.2			
Intensive/critical care	1:2	Paediatrics	1:4
Neonatal intensive care	1:2	Emergency room	1:4
Operating room	1:1	ICU patients in the ER	1:2
Post-anaesthesia recovery	1:2	Trauma patients in the ER	1:1
Labour and delivery	1:2	Step down (2004) Step down (2008)	1:4 1:3
Ante partum	1:4	Telemetry (2004)	1:5

		Telemetry (2008)	1:4
Postpartum – mother and baby	1:4	Medical/surgical (2004) Medical/surgical (2008)	1:6 1:5
Postpartum – women only	1:6	Other speciality care (2004) Other speciality care (2008)	1:5 1:4
		Psychiatric	1:6
Source: Californian Nurses Association - www.calnurses.org/assets/pdf/ratios/ratios_basics_unit_0704.pdf			

In California, there has been praise for the legally-enforced nurse/patient ratios, as well as objections to them.

Some Californian hospitals have appointed enough registered nurses to meet the minimum levels for registered nurses, but have at the same time scaled back heavily on other care-givers with lesser qualifications (including enrolled nurses) in order to save money. In these cases, registered nurses' workload could actually increase. Fortunately, such an attitude has not prevailed in all hospitals.

Support for the ratios from the side of nurses in Victoria remains strong. In a 2006 survey of nurses working with ratios in Victoria, the following findings stand out.

If ratios were abolished, how would the following factors be affected? (% agreeing with the statement) (respondents working with ratios n=1358)	
Table 3.3	
Less time for personal care of patients	90%
More difficult to manage nurses' workload	89%
Less time to complete necessary documentation	86%
Less time to discuss care with relatives	83%
Patients receive medication on time less often	76%
Lower quality care for patients	**96%**
Working conditions would be worse for nurses	**97%**
There would be more work-related stress and fatigue	92%
There would be higher levels of sick leave	90%
Nurses would be less able to take their breaks	87%
There would be less time for team building	74%
There would be a worse skill mix in my area	74%
Source: Wise, S. 2007. Undermining the Ratios; Nurses Under Pressure in Victoria in 2006. Workplace Research Centre, University of Sydney, p. 27-28	

If ratios were abolished, which would you be most likely to do? (respondents working with ratios n=1143)	
Table 3.4	
Seriously consider leaving nursing altogether	**31%**
Reduce working hours in nursing	18%
Leave position and continue nursing in another field	11%
Retire early	9%
Leave permanent post and join a nursing agency	4%
No change	6%
Don't know	21%
Source: Wise, S. 2007. Undermining the Ratios; Nurses Under Pressure in Victoria in 2006. Workplace Research Centre, University of Sydney, p. 30	

The same report details many shortcomings of the ratio system, but it is telling to note that more than 95% of nurses feel that conditions would be worse for nurses and patients alike if the ratios were abolished. The responses to the question in table 3.4 also shows the extent to which legally enforceable ratios help with retention of nursing staff, something that South Africa also needs. The nurse/patient ratios in Victoria is credited with bringing back 6 000 nurses to active practice.[15]

In California, the California Hospitals Association has been quite vocal in expressing its discontent with the ratios. When the ratios were first implemented, a few private hospitals closed down because they couldn't operate at those levels. However, even some hospital administrations admit that the ratios, while challenging to adhere to, do more good than bad overall.[16] At one hospital, before staffing ratios were completed, a complete nursing staff turnover occurred every three years, as a result of nurses leaving because of the high workload. After ratios were implemented, the rate of nurses leaving the hospital plummeted.[17] After the law was implemented in California, the number of active registered nurses in that state grew by more than 10 000 per year as opposed to a rate of about 3 000 per year before the law was implemented. In six years, an increase of 45% in new registered nurse graduates was recorded in the state.[18]

[15] O'Connor, T. 2006. Do nurse/patient ratios work? *Kai Taiki: Nursing New Zealand*.

[16] http://www.venturacountystar.com/news/2008/jan/09/nurse-ratio-being-met-officials-say/

[17] http://www.californiaprogressreport.com/2008/01/californias_nur.html

[18] California Nurses Association - RN-to-Patient Ratios Helping to Solve Nursing Shortage

4. Recommendations and concluding remarks:

The implementation of legally enforceable nurse/patient ratios in California and Victoria have not been without teething problems. These ratios are not a panacea for all problems in hospitals, and may even create new problems. However, the net effect is definitely positive.

Some guidelines for nurse/patient ratios do exist in South Africa. In 2003 the workgroup on neonatology recommended ratios of 1:1 for neonatal intensive care, 1:3 for neonatal high care and 1:5 for neonatal low care units. The South African Society of Anaesthesiologists recommends ICU ratios ranging from 2:1 to 1:2 for different levels of ICU.[19]

If ratios are to be adopted in South Africa, the more flexible Victorian model should be followed, rather than the rigid Californian method. In Victoria, the ratios are individually tailored to hospitals. In South Africa, this could also be done, based on relevant factors like location, population density, typical caseload, etc. The Victorian model of having the in-charge nurse remain "floating" to be able to deal with emergent situations also leads to better adaptability.
The advisability of implementing strict ratios in emergency rooms is also questionable. In California is has been reported that patients with immediate life-threatening conditions and/or trauma are turned away or told to wait because admitting them would cause a lapse in the application of the ratios. This is obviously an undesirable situation and it is therefore proposed that strict ratios are not implemented in emergency rooms until more research has been done on the subject.

South Africa has a nursing shortage, caused by not enough new graduates, as well as emigration and nurses withdrawing from active practice. In California and Victoria, a reversal of all three of these trends was seen after implementation of legally enforceable nurse/patient ratios.

In order to improve South Africa's health sector, to create a more satisfying work environment for health professionals and a safer environment for patients, the possibility of introducing a pilot project for testing nursing ratios in South Africa should be seriously considered. Individual hospitals should also give serious consideration to implementing their own ratios voluntarily.

[19] http://www.wccmf.co.za/guidelines.htm