Staffing Norms for Primary Health Care in the context of PHC Re-engineering

Report to
the National Department of Health

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In a move to improve the health status of the population, the South-African Department of Health is reviewing the way PHC services are delivered and has defined the 'PHC Re-engineering' approach. This approach builds a stronger preventative component with a ward-level community and home-based intervention by Community Health Workers supervised by a nurse and a refocused nurse-based school health programme. At the same time curative services are re-enforced in clinics and Community Health Centers through strong links between community-based and facility-based services and through a higher quality of care in facilities with systematic clinical governance and support from a district specialist team.

However, a strong element of its success is dependent on the availability of *the right quantity of the right categories of staff*. Currently, results from the District Health Expenditure Reviews (2010-11) show a non-optimal skill mix with lack of support, clinical, pharmaceutical and administrative staff leading to high workload for professional nurses affecting quality.

In order to inform short and medium term planning and deployment as well as planning for training requirements, this paper suggests staffing norms for each component of the PHC services. Using these staff norms, target requirements for South-Africa are then calculated and compared with actual staff availability in the public sector. As the definition of optimal skill mix is heavily dependent on the scope of practice of each category of staff, the paper also discusses the possible impact of introducing the new scope and category of staff nurse provided for in the Nursing Act, 33 of 2005 who, with a wider scope of practice, will be able to assume some of the functions pertaining to persons who are stable currently carried out by Professional Nurses, relieving them to concentrate on managing more complex health .problems.

This study was requested by Dr Yogan Pillay, DDG at the NDoH and responsible for the development and implementation of the PHC Re-engineering. This report follows an initial high level estimation of the human resources requirements for PHC Re-engineering in 2010, by the same authors. Since this time, certain components have been prioritised, namely school health, specialist teams and ward-based PHC outreach teams with implications for the HR requirements.

The analysis and report are based on many assumptions and consultations have been carried out with the various programmes at the NDoH to firm up/correct some of these assumptions. This work precedes the recently initiated process, co-ordinated by NDoH Human Resources to use the WHO WISN software to determine facility-based staffing norms. , When the results of this exercise will be available, they will assist in refining some of the norms and projections included in this report.

In the meantime, the Steering Committee for the WISN project decided that the PHC norms and projections made in this report will be used for planning of PHC services in the NHI pilot sites.

ACKNOWLEDGEMENTS

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SUMMARY

The process of defining the PHC re-engineering approach has developed over the past 2 years. It will now be implemented incrementally across districts. In order to quantify staff requirements, staff norms for different type of services need to be defined. These norms must assist in answering four questions:

- What is the optimal skill mix for each type of services?
- What are the staffing requirements for community-based services developed on a population-based basis?
- What are the staffing requirements in PHC facilities in the short-term to assist decisions around staff deployment, staff recruitment and budgeting? Recognising that in the short-term the level of utilisation of services in facilities is below the target level, but is likely to increase with the impact of the community-based services.
- How many staff of which categories are required in PHC facilities for a target level of utilisation? Whilst this will be achieved in the longer term, this information will assist the quantification of training needs.

Because norms must be able to address changing levels of utilisation of services they will be expressed in number of staff for 10 000 visits, which can then be adapted to various numbers of visits, and various reference population. It is thus a Utilisation-based approach. For outreach teams who have a geographical responsibility norms will be expressed on a Population-basis

Three principles have guided the development of norms:

- Quality of services
- Equity of Access: ensuring that the categories of staff identified can be deployed throughout the country
- Sustainability and cost-effectiveness: looking for the optimal skill mix by defining the lowest category of staff which can deliver quality within their scope of practice in order to limit costs.

The norms suggested in this report reflect the average profile of the South-African population and its burden of diseases. The norms were established through separate modelling for each component of PHC, based on the combination of the following elements:

- Package of service (as defined in PHC policy)
- Size and demographic structure of the population
- Burden of diseases
- Normative number of visits by type of condition
- Average time per type of visit per category of staff
- Scopes of practice
- Proportion of patients per type of visit who are referred to a specific category of staff
- Reaching Optimal skill mix

The definition of the norms followed very closely the scopes of practice. This is of particular relevance for the current Enrolled Nurses (ENs). In facilities where ENs are present, many perform functions beyond their scope of practice. If the scope of practice was respected, the importance of the ENs would be largely reduced. A new staff nurse with a wider scope of practice is currently being planned, according to Section 30 of the Nursing Act 33 of 2005. The staff nurse would take over some of the tasks from the Professional Nurses (PNs). Implementing the current scope of practice, the model has allocated tasks to the PNs or Nursing Assistants, but modelled as well staff requirements with a new staff nurse.

The number of staff refers to Full-Time Equivalent (FTE) with an average working week of 40 hours and 215 working days per year, excluding an average of 6 days a year for meetings and training.

Ward-Based PHC Outreach Teams: each team will be composed of: one PN and CHWs and will be supported by home-based carers, nutritionist and health promoter 3 Home-Based Carers.

- The Professional nurse manages/supervises each outreach team, linking with the community, school health and facilities, as well as making post-natal home visits, visits to patients referred by CHWs, including bed-ridden patients, and injections to MDR patients. Nurses would spend 75% of their time on meetings and supervision and 25%. One PN per team covering a 6,000 population can perform these functions in urban areas and rural areas. In deep-rural areas an additional PN would be required for the equivalent of 6 days a month in order to ensure the coverage of all home visits required.
- CHWs would spend an average of 3.4 days a week on home visits and 1.6 days a week on other activities A CHW would be expected to do 28 home visits a week in urban areas, 21 a week in rural areas and 14 a week in deep rural

areas. A ward-based team will need 5 CHWs in an urban area, 7 in a rural area and 10 CHWs in a deep rural area. Each CHW will cover 300 households in an urban area, 214 in a rural area and 150 in a deep-rural area.

- Home-Based Carers (HBC) will focus on care of bed-ridden patients without support and assist with activities of daily living, each patient receiving an average of 2 HBC visits a week. The HBC would be expected to do an average number of 6 home visits a day in urban areas, 4 in rural areas and 2 in deep rural areas for 4.5 days a week. Each Home-Based Carer would thus cover at any point in time 11 cases in urban areas, 7 in rural areas and 4 in deep rural areas. The number of HBC in a given catchment population will be based on the number of bedridden persons in the area. Patients requiring terminal palliative care would be referred to be visited by a more specialised carer and will require more skilled and frequent visits.
- Nutritionists will support Ward-Based Outreach teams, spending an average of 12 days a year with each outreach team.
- Health Promoters will spend an average of 6 hours a week with each Ward-Based Outreach team.

Staffing Norms for PHC clinics services were established with a team and optimal skill mix approach for clinical work as well as supervision and clinical governance. Two scenarios affecting nurses are presented: the first one based on the current scope of practice of Enrolled Nurses which implies that Professional Nurses have to see all patients, the second scenario based on the planned scope of practice of the planned new Staff Nurse, translating into a smaller number of Professional Nurses required. The model assumed that ALL clinics must have a PHCN for managing the facility and ensure quality of services and supervision. Doctors' time required was calculated on the basis of the percentage of patients needing to be seen by a doctor for each condition as well as a 4 hours clinical governance session per month per clinic.

Per 10,000 Clinic visits / Year	Dr	PHCN	PN	Nursing Assistant	Counsellor	Pharmacy Assistant Post-Basic	Admin
Clinical FTEs	0.08	0.09	1.52	0.33	0.63	0.45	
Management/Clinical Governance/Admin	0.003	0.186					0.40
Total FTEs	0.085	0.278	1.52	0.33	0.63	0.45	0.40
Hours/Week	3.4	11	61	13	25	18	16

Health Promoters will spend an average of 18 hours a week per clinic.

Norms for School Health: The policy is defining a team composed of 1 PN, 1 NURSING ASSISTANT and 1 Health promoter. The vision is for an incremental approach starting with Grades 0 and 1 and moving up to grade 10s. In addition, schools are broken down into quintiles reflecting different socio-economic status. It is envisaged that the different quintiles will be progressively covered by the school programme over a 5 years period.

Number FTEs per 1,000 learners	
Number PNs	0.12
Number ENAs	0.07
Number Health Promoters	0.02

Norms for CHCs services are reflecting staff required to see patients, level of utilisation. CHC facilities provide CHC services for the wide catchment area plus clinic level services for the local catchment area. The norms suggested relate to CHC services by opposition to CHC facilities. Norms by level of utilisation need to be complemented by a quantification of the minimum staff requirement to cover the opening hours, even if very few patients are presenting in particular after-hours. In facilities operating 24x7, the workload does not distribute evenly across the opening hours and concentrates on the core 8 hours x5 days a week time, so staffing per facility will need to assess each period separately: the core hours and after hours periods, and for each of them compare staff required to see patients and minimum staff requirement to keep the facility open even if very few patients are presenting. The norms below reflect staff required to see patients for CHC services.

In the context of CHC facilities, the CHCs services utilisation-based staff requirements must be added to the clinic services staff requirements for the local population. For CHC facilities with after-hours, utilisation-based staff requirements need to be complemented by a quantification of the minimum staff requirement to cover the opening hours, even if very few patients are presenting in particular after-hours.

Per 10 000 visits a year - CHC General Services	Dr	Experienced Psychiatric Nurse	PN	Nursing Assistant	Counsellor/ Mid-level Psychologist	Pharmacy assistant Post-Basic	Admin
Clinical	1.06	0.07	1.13	0.96	0.42	0.68	
Management/Clinical Governance	0.01		0.16		-		0.40
Total	1.07	0.07	1.29	0.96	0.42	0.68	0.40
Minimum Staff on site	1		1	1			1
Minimum Staff FTEs 24x7	5		5	5			5

	Oral Health			Eye Health
	Dental Therapist	Oral Hygienist	Dental Assistant	Optometrist
FTEs per 1,000 visits	0.17	0.97	0.74	0.47
Hours per Week per 1,000 visits/year	6.7	38.6	29.4	18.6

	Advanced Midwife	Experienced Midwife	Nursing Assistant
Per 1000 births	1.07	1.94	0.22
Minimum Staff on site	1	1	1
Minimum Staff Requirement 24x7	5	5	5

Norms for Environmental Health

Norms for Environmental Health Practitioners was established in South Africa as one Environmental Health Practitioner per 15 000 population, insured and uninsured combined. The WHO norm stands at 1 Environmental Health Practitioner per 10 000 population. A new cadre of Environmental Health Assistant is being defined, no norms exist as to the ratio of Environmental Health Assistant to Environmental Health Practitioner.

	Number EHP	Population	EHPs for SA
Norm WHO	1	10 000	4 999
Norm SA	1	15 000	3 333

Norms for specialist teams: the current approach is to plan for 1 Specialist Team per district, working across levels of care

DISTRICT SPECIALIST TEAM	Level	No per District
Family Medecine	Principal Specialist	1
Paediatrician	Principal Specialist	1
O&G	Principal Specialist	1
Anaesthesiologist	Principal Specialist	1
Advanced Midwife	CPN	1
PHCN	CPN	1
Advanced Paediatric Nurse	CPN	1

PHC STAFF REQUIREMENTS FOR SOUTH AFRICA and GAPS:

Target staff requirements are target staff requirements are presented for two levels of utilisation:

The 2010-11 Actual PHC Utilisation Rate – Short Term
The Target Utilisation Rate with a Long Term perspective (5 years or over)

with the following assumptions: similar services between long term and short term for ward-based PHC services and district specialist teams. Short term school health covers the first year implementation of the package whilst long-term school health services include the full package. Short-term Total PHC facilities Utilisation Rate (UR) is based on the actual UR for 2010-11 at 2.8 for local government and provincial facilities, whilst the long-term UR stands at 4.7. Long term staff requirements are calculated in order to inform training needs

This target number of staff is based on utilisation and does not include the staff required to keep facilities open when this minimum staff requirement is higher than the staff required for utilisation, often the case during after-hours in rural areas. As such the target number of doctors and nurses is likely to be an underestimate. A separate analysis needs to be carried out by facility to assess when facilities should keep facilities open or have staff on call.

The normative requirements for each component of the PHC package were applied to the uninsured population of South Africa, in order to measure gaps based on the current staff availability in the public sector, in the absence of information on private sector staffing. Extrapolation to total population can be easily done.

Estimation of the number of actual FTEs at PHC level is extracted from the District Health Expenditure Reviews of 2010-11, reflecting the number of staff working in the public sector. The number of doctors FTEs includes the time spent on outreach in PHC facilities by district hospitals doctors.

Applying the suggested norms to the Actual PHC Utilisation rate of 201-11 shows shortages of 192 specialists, 361 medical officers, over 10 000 PNs, including specialised nurses, largely due to the introduction of new services: need of 7 453 PNs for the outreach teams as well as 417 PNs for school health (an additional 136 compared to actual) and 156 specialised nurses for the district specialist teams. There would be an excess of 3 211 Nursing Assistants but a shortage in PHC facilities of 1652 counsellors, of 4 500 pharmacy assistants post-basic and of 1 417 admin support.

Actual Staffing, Target Staffing and Gaps

	Specialists	Medical Officers	All PNs	Staff Nurse	Nurse Assistant	Counsellor	Pharmacist	Pharmacist Assistant Basic	Pharmacist Assistant Post-Basic	Admin
Actual in PHC Public Sector	16	863	18 266	5 480	7 395	5 371	449	450	600	4 080
Current Utilisation Rate										
Target EN Model	208	1 224	28 667	-	4 184	7 023			5 100	5 496
Gap EN Model	-192	-361	-10 401		3 211	-1 652			-4 501	-1 417
Target Utilisation Rate Long Term										
Target EN Model	208	2 076	43 894		7 531	11 909			8 649	9 320
Target Staff Nurse Model	208	2 076	26 574	17 321	7 531	11 909	-	-	8 649	9 320
Gap EN Model	-192	-1 213	-25 628		-135	-6 538			-8 050	-5 241
Gap Staff Nurse Model	-192	-1 213	-8 308		-135	-6 538			-8 050	-5 241

Impact of a new category of Staff Nurse: For clinics and CHCs a double modelling was done regarding nurses: number of Professional Nurses, Enrolled Nurses and Enrolled Nurses Assistants required given the current scope of practice of Enrolled Nurses, and a second modelling assessing Nurses requirements in the context of a new staff nurse with an extended scope of practice compared to the current EN, thereby reducing the number of PNs required. If ENs were replaced by a new cadre of Staff Nurses the impact would translate into a significantly lower number of PNs being replaced by Staff Nurses. **The savings achieved would amount to R636 millions on the assumption of a package of R243 000 for a staff nurse.**

Staff Numbers	PN	Staff Nurse	Cost/Staff	PN	EN	Staff Nurse
EN model	31 392		Salary	206 796		180 000
Staff Nurse Model	17 380	14 365	Total Package	283 311		246 600
	14 012					

Cost in millions	PN	Staff Nurse	Total
EN model	8 894		8 894
Staff Nurse Model	4 924	3 542	8 466
Difference			427

In conclusion. This presentation of human resources norms, requirements and gaps for selected categories of staff is a high level picture. In the perspective of quality and sustainability It suggests norms based on utilisation levels and shows their

implications regarding staffing requirement at national level. It thus presents selected HR requirements for a target package of services with limited implementation for the short-term and for target coverage for the long term for the uninsured population. For PHC facilities, these requirements based on level of utilisation are likely to be an underestimate as they need to be complemented by an assessment of minimum staff requirements to keep facility open during after-hours even when utilisation is very low.

The short-term gaps reflects the additional staff requirements for the introduction of new services, outreach teams as well as district specialist teams, increased school health services and actual shortages in PHC facilities for the current level of utilisation. Some of these shortages require long term training for specialists, specialised nurses whilst others require short, as for pharmacy assistants, or little training for admin support. The production capacity for each category of staff will also give an indication of the rate or pace at which the staff gap will be filled over time.

The impact of rurality has been included in norms for Ward-based PHC Outreach teams. Results of the work on the 'rurality factor' and the work on the WISN will also enable a closer adaptation to specific district needs.

In the context of increased public/private partnership sessional staff will be able to top up the availability of public sector staff.

In the medium to long-term, the creation of a new Staff Nurse will translate into a significantly smaller number of professional nurses required and a saving of R636m. when comparing the salary cost of the current PNs/ENs and that of PNs/Staff Nurses. In addition Staff Nurses can be trained faster than Professional Nurses.

The suggested norms need to be reviewed and agreed by the national PHC team and piloted in an NHI pilot district.. But norms are not static, they may be reviewed after implementation of the PHC Re-engineering, in the meantime the long term target requirements for South-Africa represent an order of magnitude to inform training needs.

The suggested norms represent a significant increase in staffing even when applied to the current level of utilisation in PHC facilities and it might be necessary to .prioritise their implementation for specific target areas such as rural areas and poorer urban areas. Prioritising some components of the package at the expense of others may lead to poor outcomes: the real impact of the ward PHC Outreach teams and school health requires that PHC facilities are able to respond to increased referrals

RECOMMENDATIONS

The following recommendations are aimed at ensuring the acceptability of the suggested norms, their incremental implementation at local level and their use to assess training needs:

- The NDoH PHC team needs to review/modify the suggested norms and agree to them formally
- Work on the impact of rurality needs to be integrated in the norms.
- Support/training of provinces/districts, starting with NHI pilot districts must be carried out to assist them with short-term decisions on deployment between facilities and priority recruitment.
- The long term picture of gaps at PHC level must be combined with that for other levels of care (hospitals) and information on staff availability in the private sector to inform modelling of training needs and the design of time lines given the training capacity.
- Promulgation of regulations and Implementation of the new staff nurse category

The process of defining the PHC re-engineering approach has developed over the past 2 years. High level work was carried out to test the feasibility and acceptability of this approach. At that stage an initial assessment of the human resource requirements was carried out, focussing on selected categories of staff. Discussions of the initial results with relevant role players led to greater clarity on specific policies, which in turn affected the profile and quantum of staff required.

In order to quantify staff requirements staff norms for different type of services need to be defined. These norms must assist in answering four questions:

What is the optimal skill mix for each type of services?
What are the staffing requirements for community-based services developed on a population-based basis?
What are the staffing requirements in PHC facilities in the short-term to assist decision making around staff deployment, staff recruitment and budgeting? Recognising that in the short-term the level of utilisation of services in facilities is below the target level, but that it is likely to increase with the impact of the community-based services, and better staffed facilities.
How many staff of which categories are required in PHC facilities for a target level of utilisation? Whilst this will be achieved in the longer term, this information will assist the quantification of training needs.

Because norms must be able to address changing levels of utilisation of services they will be expressed in number of staff for 10 000 visits, which can then be adapted to various numbers of visits, and various reference populations. It is thus a **Utilisation-based approach**. For outreach teams who have a geographical responsibility norms will be expressed on a **Population**-basis

Three principles have guided the development of norms:

Quality of services
Equity of Access: ensuring that the categories of staff identified can be deployed throughout the country
Sustainability: looking for the optimal skill mix by defining the lowest category of staff which can deliver quality within their scope of practice in order to limit costs.

Norms are defined for each component of the PHC re-engineering package of services:

Outreach Teams
Clinics
School Health
CHCs
Specialised Team

Norms are defined in the context of a team with optimal skill mix. However, for some categories of workers norms still need to be defined: District, sub-district management norms will be defined by DPSA, norms for some sectors like Rehabilitation are dependent on the definition of new cadres of workers which are under discussion but not finalised. For pharmacy services, the norms suggested relate to the existing cadres of pharmacy assistants as the cadre of pharmacy technician, although defined, is not implemented. For other services such as Nutrition, Dental and Optometry services norms are suggested based on consultation with the programs although these may require higher level policy decisions. They are however presented here in order to to assist in quantifying the HR implications of providing these services.

Rural areas have special challenges regarding demographic structure with higher proportion of under 18 and of elderly people, access, density of population and logistics which have an impact on the profile of utilisation of services and burden of diseases. Detailed work is currently being carried out to quantify these implications and define a 'rurality factor' which will have to be applied to the norms. This factor will take into account the additional time demands due to services being delivered in rural areas, from longer consultations due to need of interpretation to longer travelling time and more serious conditions due to difficulties for patients to access services. In addition it is hoped that the WISN project will be able to provide more details on impact of rurality on service delivery.

The norms presented in this report reflect the profile of the South-African population and its burden of disease. This report will be updated after the release of the Census Data expected in the second part of October 2012. The model is designed in Excel to be used as a planning template which will enable provinces and districts to enter their own information to have HR requirements that are adapted to their specific situation. These norms reflect the HR requirements for the level of utilisation current or projected. This analysis needs to be complemented by an assessment of the minimum staff requirements to keep facilities open.

METHODOLOGY

Staffing norms were established through separate modelling for each component of PHC, based on the combination of the following elements:

Package of service (as defined in PHC policy)
Size and demographic structure of the population
Burden of diseases
Normative number of visits by type of condition
Average time per type of visit per category of staff
Scopes of practice
Proportion of patients per type of visit who are referred to a specific category of staff
Reaching Optimal skill mix

The above elements were applied to the South African Population to calculate the number of staff required per category of staff. Ratios to population, activity levels and relative ratios between categories of staff were calculated to provide the norms.

This modelling was done in close collaboration with the PHC Re-engineering Team. Some Assumptions underline the modelling:

- The word number of staff refers to **Full-Time Equivalent (FTE)** with an average working week of 40 hours. A decimal number of FTEs (e.g. 0.4) means that part-time or sessional staff may need to be employed.
- The number of days a year where staff is available for duty has been fixed by the NDoH at 215. Note that 6 working days are not included in the 215 as they will be spent on training or meetings; hence staff will not be available for routine work, this number is equivalent to 43 weeks for routine work.

Table 1. Number of working days per year per FTE

EXPECTED NUMBER OF WORKING DAYS IN THE FACILITY BY FTE						
Total Days / Year	Days NOT in Facility					Days IN Facility
	Weekends	Annual Leave	Public Holidays	Sick Leave	Out for Training/Meeting	
365	104	20	10	10	6	**215**
Source: NDoH HR 2011						

- For clinics and Community Health Centres modelling, it was assumed that clinical staff spends an average of 5 hours per day in direct patient contact and the remaining 3 hours being spent on other activities (such as admin, meetings, etc.).

NORMS FOR WARD-BASED PHC OUTREACH TEAMS

Modelling for this component included the elements defined above with the addition of two other factors: density of the population and level of vulnerability.

Density of the population was modelled by breaking down the population into urban, rural and deep rural. This in turn affects the average number of home visits per day which can be expected from a Community Health Worker: 8 visits in urban areas, 6 in rural areas and 4 in deep rural areas. Level of vulnerability (proportion of socially vulnerable households) translates in higher number of visits to households with higher vulnerability.

It is modelled that each CHW will spend time on Home Visits and on other Activities such as support group, community meetings, support to ECD and other institutions and time in the clinics (details in Annex 1). During the first year more time will be spent on set-up and on households' registration and screening. As a consequence less time will be available for visits for individual conditions. The CHW will concentrate on maternal and child health as well as support to treatment compliance, although support groups will be limited in that year. In the following years a wider range of conditions will be covered by the CHWs who will also receive additional training.

Table 2.   CHW Days on Activities other than Home Visits

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	First Year		Following Years	
	Days per Month	Days per Year	Days per Month	Days per Year
Developing Resource Profile of Community		8	0	3
Support Groups	0.25	3	1	11
Specific health days in Community		7	0	10
Community meetings …	0.50	6	0.5	6
School health follow-up	0.05	0.6	0.05	0.6
Creche, ECD instit	0.20	2	0.2	2
Other instit	-	-	0.3	3
Epidemic response averaged across the country		1		1
Facility Days	2.5	28	2.5	28
Total		55		64

As an average, a CHW would spend an average of 3.4 days a week on home visits and 1.6 days a week on other activities. The possible number of home visits per day varies with the density of the population. It has been set at 8 per day in urban areas, 6 in rural areas and 4 in deep rural areas. As a consequence for the same size of population more CHWs will be required in deep-rural than in urban areas.

The target population per ward-based outreach team has been set at 6,000, translating into 6,999 teams for South-Africa. The number of home visits required was calculated for each type of activity by applying the burden of disease for each condition to the size of the relevant population (pregnant women, under 5, over 40 …), the planned coverage and the number of visits required per case. The number of visits required per case was itself calculated by defining the percentage of those cases who would require high intensity visits with the number of visits required for that group, and the percentage of cases who require medium intensity visits: for example 40% would require 4 visits a year and 60% would require 2 visits a year. The types of visits were themselves given a weight: for example, household screening was estimated to be equivalent to 2 home visits in terms of time, whilst a child visit was equivalent to 1.

As an average a CHW would be expected to do 28 home visits a week in urban areas, 21 a week in rural areas and 14 a week in deep rural areas. In order to cover the number of home visits required for a 6,000 population, a ward-based team will need 5 CHWs in an urban area, 7 in a rural area and 10 CHWs in a deep rural area. Each CHW will cover 300 households in an urban area, 214 in a rural area and 150 in a deep-rural area. If we assume that 60% of the SA population is urban, 20% rural and 20% deep-rural, the total number of CHWs required for SA stands at 44 792 per year.

Note that some households will not require to be visited following registration, whilst others will receive numerous visits.

Table 3.   CHWs Norms and Requirements

	Urban	Rural	Deep Rural	Average
Population per Team	6 000	6 000	6 000	6 000
Home Visits per Year for Population	5 680	5 680	5 680	
Days per Week for				
Home Visits		3.5		70%
Not Home Visits		1.5		30%
Home Visits per Day per CHW	8	6	4	
Home Visits per Week per CHW	28	21	14	
Home Visits per Year per CHW	1 208	906	604	
Number CHWs per Team	5	7	10	6
Households per CHW	300	214	150	
Total Number of Teams	4 199	1 400	1 400	6 999
Total CHWs Required	20 996	9 798	13 998	44 792

Home-Based Carers (HBC) are expected to focus on care of bed-ridden patients without support and assist with activities of daily living. It is modelled that 0.5% of the total population would require this service with an average of 2 HBC visits a week per case. The average number of Home-Visits by HBC per day is suggested as 6 visits in urban areas, 4 in rural areas and 2 in deep rural areas. Each Home-Based Carer would thus cover at any point in time 11 cases in urban areas, 7 in rural areas and 4 in deep rural areas. The total number of Home-Based Carers required for SA would be 29 935 per year. The number of HBC in a given catchment population will be based on the number of bedridden persons in the area. The patients requiring terminal palliative care would be referred to be visited by a more specialised carer and will require more skilled and frequent visits. This area needs further exploration.

Table 4.   Home-Based Carers Norms

	Urban	Rural	Deep Rural
Days per Week for			
Home Visits		4.5	
Not Home Visits		0.5	
Home Visits Possible/ Day per HBC	6	4	2
Cases per HBC	11	7	4

A Professional nurse manages/supervises each outreach team, linking with the community, school health and facilities, as well as making post-natal home visits, visits to patients referred by CHWs, including bed-ridden patients, and injections to MDR patients. Nurses would spend from the second year 75% of their time on meetings and supervision (equivalent to 3.8 days a week) and 25% (equivalent to 1.2 days a week) on home visits. PNs would make 1 post-natal home visit per mother; these visits are expected to take place shortly after the birth, time when the neo-natal morbidity is at the highest. In addition, it is modelled that CHWs would refer 2% of the population for PNs visits at home. Such visits could have a big impact on morbidity if referrals are appropriate and a large impact as well on bed-ridden patients and terminal care patients.

Another important area for PNs home visits is MDR patients who require daily injections for the first 6 months. Whilst this activity can be done by a Nursing Assistant, in most areas it is logistically better if integrated in the Outreach PN work. In areas with high prevalence the injections could be done by a Nursing Assistant. In order to decrease the proportion of patients who are hospitalised at the beginning, or reduce the hospitalisation time and costs, injections should be made at home for patients not close to clinics or when compliance is uncertain. It was modelled that 50% of patients would be hospitalised for the first 4 weeks, 25% for the first 2 weeks. Following hospitalisation, or without hospitalisation, patients receive their injections at home or at the clinic. All patients in deep-rural areas would require home injections whilst it is modelled than only 60% in urban areas would due to their proximity to a clinic.

According to these assumptions, 1 PN per team covering a 6,000 population could perform this function in urban areas and rural areas. In deep-rural areas an additional PN would be required for the equivalent of 6 days a month in order to ensure the coverage of all home visits required. SA would thus require a total of 7,453 PNs to cover the functions of the Ward-based PHC Outreach Teams.

Table 5. PN Norms and Requirements Outreach Teams

Days per Year Meetings and Supervision	First Year		Following Years	
	Days per Month	Days per Year	Days per Month	Days per Year
Developing Resource Profile of Community	0	15		5
Support Groups	1	11	1	11
Specific health days Cty	0	10	0.165	10
Community meetings …	1	11	1	11
School health follow-up	0.5	6.0	0.5	5.5
Creche, ECD instit	0.5	6	0.5	6
Other instit	0.3	3	0.3	3
Epidemic response averaged across the country		1		1
Facility Days	4	44	4	44
Supervision in the community	6	66	6	66
Total		173		162

PN Requirements per Team	Urban	Rural	Deep Rural
PN Home Visits Days Required / Week	1.1	1.5	2.6
Days per Week for Outreach PN Meetings & Supervision Home Visits	3.8 1.2		
Home Visits Days per Week to be done by additional PN	0	0.3	1.3
Additional PN FTE required	0.0	0.1	0.3

PN Requirements for SA	Urban	Rural	Deep Rural	Total
PNs Ward-Based Outreach Team	4 199	1 400	1 400	6 999
Additional PN FTEs	-	83	372	454
				7 453

In addition Nutritionists will support Ward-Based Outreach teams, spending an average of 12 days a year with each outreach team. Overall, an average of 344 Nutritionists are required for the country.

Table 6. Nutritionists Requirements

Functions	PLATFORM				DAYS			
	Community	Facility	School	Sub-District	Per Team	No Teams	Month	Year/Clinic Catchment
Support to Ward Based PHC Outreach & Evaluation & design corrective measures								
re implementation nutrition related interventions	X				1	3	3	33
re community assessment of nutrition related pbms	x							2
re Development nutrition related campaigns								1
Support to School Health & Evaluation & design corrective measures			x					1

Total Days per Year per Clinic Catchment	37
Number FTEs for SA	344

Table 7.   Norms for Ward-Based PHC Outreach Teams

Per Team	Urban	Rural	Deep Rural
Population	6 000	6 000	6 000
Professional Nurses	1	1	1.3
CHWs	5	7	10

The number of Home-based carers will be function of the number of bed-ridden patients requiring support in the team's catchment area.

NORMS FOR PHC CLINIC SERVICES

Staffing Norms for PHC clinic services were established with special emphasis on a team and optimal skill mix approach for clinical work as well as management, supervision and clinical governance. Clinic services reflect services rendered in clinic facilities or in CHCs for the clinic services rendered to the local population.

Two scenarios affecting nurses are presented: the first one is based on the current scope of practice of Enrolled Nurses which implies that Professional Nurses have to see all patients. The second scenario is based on the planned scope of practice of the planned new Staff Nurse which translates into a smaller number of Professional Nurses being required. Given the limited current scope of practice of ENs, and in the context of optimal skill mix, the specific role of the current EN, by opposition to that of the PN or the Nursing Assistant, is narrow. Currently, the majority of clinics have a shortage of Enrolled Nurses (DHER 2010-11). So rather than suggesting to recruit Enrolled Nurses whose training and scope of practice is likely to change, the model allocated the maximum of the Nursing Assistant scope of practice to the Nursing Assistant and the remainder of the EN tasks to the PN, thereby freeing existing ENs to be upgraded to the planned new staff nurse

The model assumed that ALL clinics must have a PHCN for managing the facility and ensure quality of services and supervision. As management and supervision time required is dependent on the size of the facility and the number of staff employed, number of visits are used as a proxy, on the basis of 1 FTE for an average daily attendance of 250. In facilities with lower attendance level, the PHCN time not spent on management will be used on clinical work reducing the need for other professional nurses.

Doctors' time required was calculated on the basis of the percentage of patients needing to be seen by a doctor for each condition. In addition doctors will carry out clinical governance on the basis of 4 hours a month per clinic.

Counselling/Mental Health support (not only relating to AIDS) is a very crucial component of the service, given the well-recognised need in this area, and because of its significant impact on adherence. This function is currently covered by lay counsellors, however further work is required to better define and standardise this position.

Pharmacy services at clinic level must be rendered by a pharmacist assistant post-basic who does not require direct supervision by a pharmacist. Chronic patients who are stabilised will collect prescriptions every month, but will see a PN only every 3 months.

Details of Assumptions are displayed in Annex 2

Applying the burden of diseases to the scope of services and target coverage, the resulting average number of clinic visits per person per year would amount to 4.4 (long term target), In order to make norms better adapted to a dynamic situation in terms of facilities attendances, norms are presented per 10 000 visits.

Table 8. Clinics : Staff Norms per 10 000 visits

Per 10,000 Clinic visits / Year	Dr	PHCN	PN	Nursing Assistant	Counsellor	Pharmacy Assistant Post-Basic	Admin
Clinical FTEs	0.08	0.09	1.52	0.33	0.63	0.45	
Management/Clinical Governance/Admin	0.003	0.186					0.40
Total FTEs	0.085	0.278	1.52	0.33	0.63	0.45	0.40
Hours/Week	3.4	11	61	13	25	18	16

From the perspective of a new staff nurse, many of the tasks performed currently by a PN will be taken over by a staff nurse. The difference between the two models for PNs-ENs and PNs-Staff Nurse would be as follows, showing that with Staff Nurses replacing EN,the number of PNs required per 10,000 visits would decrease from 1.5 FTEs to 0.74, and the number of Staff Nurses would stand at 0.78 FTEs.

Per 10,000 Clinic visits / Year	PN	Staff Nurse
EN Model	1.52	
Staff Nurse model	0.74	0.78

Health Promoters are working with Ward-Based Outreach teams, Clinics and Scholl Health. Health promoters will spend an average of 6 hours a week with each Ward-Based Outreach team, and 17 hours a week per clinic.

Table 9. Health Promoters Requirements and Norms

FTEs HEALTH PROMOTERS FOR SA			
Community	Facility	School	TOTAL
858	858	285	2000
FTEs HEALTH PROMOTERS per CLINIC CATCHMENT			
0.43	0.43		
HOURS PER WEEK			
17	17		

NORMS FOR SCHOOL HEALTH

The policy for school health is based on a team composed of 1 PN, 1 Nursing Assistant and 1 Health promoter. The vision is for an incremental approach starting with Grades 0 and 1 and moving up to grade 10s . In addition, schools are broken down into quintiles reflecting different socio-economic status. It is envisaged that the different quintiles will be progressively covered by the school programme over a 5 years period.

The table below shows an indicative number of FTEs required per 1 000 learners combining intervention in all grades. In the model which will be developed, a more accurate figure will be obtained dependent on the number of learners per grade, it will thus be possible to plan the time required per staff as a function of the level of roll-out of the program.

Table 10. Norms for School Health

Number FTEs per 1,000 learners	
Number PNs	0.12
Number ENAs	0.07
Number Health Promoters	0.02

NORMS FOR CHC SERVICES

CHCs are by definition facilities opened 24 x 7 with a doctor on site at all times. Norms for CHCs must thus take into account:

The number of FTEs required to see patients
The fact that the number of patients does not spread evenly across the opening hours, with the bulk of patients presenting during the core 40 hours, 8 hours a day x 5 days a week.
The minimum staff requirement to cover the opening hours, even if very few patients are presenting.

An indication of the spread of attendances between the Core 40 hours and After-Hours can be extracted from the DHIS data for 2010-11, but covering only the Cape Town Metro 24 Hours CHCs as this is the only district reporting separately on Core Hours and After-Hours. For these 9 CHCs, attendances during Core Hours represents an average of 87% of the total attendances ranging from 80% to 92%, with the remaining 13% during the other 128 hours. The norms presented here reflect the number of FTEs required to see patients.

With the increased presence of doctors at clinic level, the specific CHC package of service, excluding clinic level services for local population, will focus on:

A. General Services

Core Hours

- o ANC referred scan-X-ray, Genetic Services, Sterilisation, Surgical TOPs, Male Circumcision,
- o Complex Conditions, Chronic Unstable,
- o Mental Health: with Specialised Psychiatric Nurse and over time the introduction/input of a psychology mid-level worker

After Hours

- o Curative
- o Emergencies
- o Sexual Assault Services
- o Short-term Stay: Stabilisation/Observation 24 Hrs

B. Eye and Dental Services

Core Hours

- o Optometry
- o Oral Health
- o *(Rehabilitation services: Physiotherapy, Occupational Therapy, Speech/Hearing Services)* not defined
- o *(Radiography services)* not defined

C. Simple Deliveries

Core and After-Hours

Norms are presented in the 3 tables below:

A. General services : number of FTEs required per 10 000 visits , as well as the minimum staff requirements to keep facility open for 24 x 7
B. Eye and Dental services: number of FTEs required per 1 000 visits a year
C. Deliveries: number of FTEs required per 1 000 deliveries a year, as well as the minimum staff requirements to keep facility open for 24 x 7

Details of Assumptions are displayed in Annex 3

Table 11.   Norms for CHCs general services per 10 000 visits

Per 10 000 visits a year - CHC General Services	Dr	Experienced Psychiatric Nurse	PN	Nursing Assistant	Counsellor/ Mid-level Psychologist	Pharmacy assistant Post-Basic	Admin
Clinical	1.06	0.07	1.13	0.96	0.42	0.68	
Management/Clinical Governance	0.01		0.16		-		0.40
Total	1.07	0.07	1.29	0.96	0.42	0.68	0.40
Minimum Staff on site	1		1	1			1
Minimum Staff FTEs 24x7	5		5	5			5

Table 12.   Eye and Dental Services

	Oral Health			Eye Health
	Dental Therapist	Oral Hygienist	Dental Assistant	Optometrist
FTEs per 1,000 visits	0.17	0.97	0.74	0.47
Hours per Week per 1,000 visits/year	6.7	38.6	29.4	18.6

Table 13.   Norms per 1,000 births

	Advanced Midwife	Experienced Midwife	Nursing Assistant
Per 1000 births	1.07	1.94	0.22
Minimum Staff on site	1	1	1
Minimum Staff Requirement 24x7	5	5	5

Radiographers and Rehabilitation visits are not included in the above calculations.

NORMS FOR ENVIRONMENTAL HEALTH

Norms for Environmental Health Practitioners was established in South Africa as one Environmental Health Practitioner per 15 000 population, insured and uninsured combined. The WHO norm stands at 1 Environmental Health Practitioner per 10 000 population. A new cadre of Environmental Health Assistant is being defined, no norms exist as to the ratio of Environmental Health Assistant to Environmental Health Practitioner.

Table 14.   E.H.Ps Requirements and Norms

	Number EHP	Population	EHPs for SA
Norm WHO	1	10 000	4 999
Norm SA	1	15 000	3 333

NORMS FOR SPECIALIST TEAMS

The current approach is to plan for 1 Specialist Team per district. This team is expected to work across levels of care to attend to more serious cases but also to ensure more in depth clinical governance in particular around Mother and Child health. This team has the following composition:

Table 15.   District Specialist Composition

	Level	No per District
Family Medecine	Principal Specialist	1
Paediatrician	Principal Specialist	1
O&G	Principal Specialist	1
Anaesthesiologist	Principal Specialist	1
Advanced Midwife	CPN	1
PHCN	CPN	1
Advanced Paediatric Nurse	CPN	1

PHC STAFF REQUIREMENTS FOR SOUTH AFRICA

In order to calculate the implications of the suggested norms, target staff requirements are presented for two levels of utilisation:

The 2010-11 **Actua**l PHC Utilisation Rate – Short Term
The **Target** Utilisation Rate with a Long Term perspective (over 5 years)

The following assumptions are used (see table below): similar services between long term and short term for Ward-based PHC Outreach Services and district specialist teams. Short term school health covers the first year implementation of the package whilst long-term school health services include the full package for all quintiles. Short-term Total PHC facilities Utilisation Rate (UR) is based on the actual UR for 2010-11 at 2.81 for combined local government and provincial PHC facilities. However, the breakdown between clinic services and CHC services reflects the breakdown of the long term package with clinic services representing 93% of the total UR. Total PHC facilities UR stands at 2.81 in the short term (actual UR 2010-11) and 4.7 in the long-term. Clinics services UR stands at 2.6 and 4.4 respectively and CHC services at 0.19 for the short-term and 0.33 for the long term. Table 14 displays actual, short term and long-term utilisation rates per type of service and per type of facilities (CHC facility UR includes CHC services for the wide catchment area plus clinic services for the local population).. Short-term UR in clinic facilities show a slight shift towards clinics compared to actual, due to the increase presence of doctors, requiring fewer referrals for CHC services.

Long term staff requirements are used in order to inform on training needs.

Table 16.   Assumptions for Short-term and Long-Term Planning

	Short-Term	Long-term
Outreach	Full	Full
School Health	Year 1	Full
Clinic services UR	2.62	4.44
CHC services UR	0.19	0.33
Specialised Team	Full	Full
Total UR Facilities	2.81	4.77

Table 17.   Current and Long-term PHC Facilities UR

Utilisation Rates by Type of Services	Actual	Target Short Term	Target Long Term
Clinic Services		2.62	4.44
CHC/CDC services only		0.19	0.33
Total	2.81	2.81	4.77

Utilisation Rates by Type of Facilities	Actual	Target Short Term	Target Long Term
Clinics	2.16	2.35	3.99
CHC/CDC +clinic services	0.65	0.46	0.78
Total	2.81	2.81	4.77

The above assumptions were applied to the 2011 uninsured population of South Africa to assess PHC HR requirements from which gaps can be quantified for the public sector in the absence of information on private sector staffing. Extrapolation to the total population can easily be done.

Annex 4 presents required FTEs per component.

Table 18.   Required FTEs at PHC level for South-Africa uninsured population.

SA Uninsured	Target U.R.	Doctors				
		Family Medecine	Paediatrician	O&G	Anaesthesi ologist	Doctor
Long-term Total	4.77	52	52	52	52	2 076
Total for Current UR	2.81	52	52	52	52	1 224

SA Uninsured	Target U.R.	Nurses							
		Advanced Paediatric Nurse	Advanced Midwife	PHCN	Experienced Midwife	Experienced Psychiatric Nurse	PN	EN	Nursing Assistant
Long-term Total	4.77	52	208	5 553	396	32	37 653	-	7 531
Total for Current UR	2.81	52	144	3 296	234	19	24 923	-	4 184

SA Uninsured	Counsellor/ Mid-level Psychologist	Pharmacy assistant Post-Basic	Dental Therapist	Oral Hygienist	Dental Assistant	Optometrist	Nutritionist	Health Promoters
Long-term Total	11 909	8 649	620	3 565	2 713	2 101	324	2 000
Total for Current UR	7 023	5 100	366	2 102	1 600	1 239	324	1 389

SA Uninsured	Env. Health Practioners	CHW	Home-Based Carers	Admin
Long-term Total	4 999	44 792	29 395	9 320
Total for Current UR	3 333	44 792	29 395	5 496

With the plan to replace ENs by a new cadre of Staff Nurses the impact would translate into 17 321 fewer PNs but an additional 17 321 staff nurses ((long term modelling with increased utilisation rate). The number of PNs here excludes specialised nurses. **The savings achieved would amount to R636 millions on the assumption that the new staff nurse would have an annual package of R246 000.**

Table 19.   Impact of the introduction of a new Staff Nurse

Staff Numbers	PN	Staff Nurse	Cost/Staff	PN	EN	Staff Nurse
EN model	37 653		Salary	206 796		180 000
Staff Nurse Model	20 333	17 321	Total Package	283 311		246 600
	17 321					

Cost in millions	PN	Staff Nurse	Total
EN model	10 668		10 668
Staff Nurse Model	5 761	4 271	10 032
Difference			636

ASSESSMENT OF GAPS: COMPARISON WITH CURRENT STAFFING

Estimation of the number of actual FTEs at PHC level is extracted from the District Health Expenditure Reviews of 2010-11; as such they reflect the number of staff working in the public sector in selected staff categories. The number of doctors FTEs includes the time spent on outreach in PHC facilities by district hospitals doctors. The total number of doctors FTEs may be an overestimate if some sub-districts did not translate visiting doctors into FTEs and calculated them as 1.The column 'All PNs' includes specialised nurses + PNs. An additional 281 professional nurses are currently working in schools (NDoH Aug. 2010). The actual FTEs presented may need further verification; HR information from the DHER is however the best source of information currently available. Note that not all staff categories mentioned in this report are reflected below.

It is important to re-emphasize that the target number of staff is based on utilisation and does not include the staff required to keep facilities open when this minimum staff requirement is higher than the staff required for utilisation. This is often the case during after-hours in rural areas. As such the target number of doctors and nurses is likely to be an underestimate. A separate analysis needs to be carried out by facility to assess when facilities should keep facilities open or have staff on call.

Applying the suggested norms to the Actual PHC Utilisation rate of 201-11 shows shortages of 192 specialists, 361 medical officers, over 10 000 PNs, including specialised nurses, largely due to the introduction of new services: need of 7 453 PNs for the outreach teams as well as 417 PNs for school health (an additional 136 compared to actual) and 156 specialised nurses for the district specialist teams. There would be an excess of 3 211 Nursing Assistants but a shortage in PHC facilities of 1652 counsellors, of 4 500 pharmacy assistants post-basic and of 1 417 admin support.
Note that more detailed work needs to be done regarding pharmacists.

Table 20.   Comparison PHC staff requirements with current public sector staffing

	Specialists	Medical Officers	All PNs	Staff Nurse	Nurse Assistant	Counsellor	Pharmacist	Pharmacist Assistant Basic	Pharmacist Assistant Post-Basic	Admin
Actual in PHC Public Sector	16	863	18 266	5 480	7 395	5 371	449	450	600	4 080
Current Utilisation Rate										
Target EN Model	208	1 224	28 667	-	4 184	7 023			5 100	5 496
Gap EN Model	-192	-361	-10 401		3 211	-1 652			-4 501	-1 417
Target Utilisation Rate Long Term										
Target EN Model	208	2 076	43 894		7 531	11 909			8 649	9 320
Target Staff Nurse Model	208	2 076	26 574	17 321	7 531	11 909	-	-	8 649	9 320
Gap EN Model	-192	-1 213	-25 628		-135	-6 538			-8 050	-5 241
Gap Staff Nurse Model	-192	-1 213	-8 308		-135	-6 538			-8 050	-5 241

CONCLUSION

This presentation of human resources norms, requirements and gaps for selected categories of staff is a high level picture. In the perspective of quality and sustainability It suggests norms based on utilisation levels and shows their implications regarding staffing requirement at national level. It thus presents selected HR requirements for a target package of services with limited implementation for the short-term and for target coverage for the long term for the uninsured population. For PHC facilities, these requirements based on level of utilisation are likely to be an underestimate as they need to be complemented by an assessment of minimum staff requirements to keep facility open during after-hours even when utilisation is very low.

The short-term gaps reflects the additional staff requirements for the introduction of new services, outreach teams as well as district specialist teams, increased school health services and actual shortages in PHC facilities for the current level of utilisation. Some of these shortages require long term training for specialists, specialised nurses whilst others require short, as for pharmacy assistants, or little training for admin support. The production capacity for each category of staff will also give an indication of the rate or pace at which the staff gap will be filled over time.

The impact of rurality has been included in norms for Ward-based PHC Outreach teams. Results of the work on the 'rurality factor' and the work on the WISN will also enable a closer adaptation to specific district needs.

In the context of increased public/private partnership sessional staff will be able to top up the availability of public sector staff.

In the medium to long-term, the creation of a new Staff Nurse will translate into a significantly smaller number of professional nurses required and a saving of R636m. when comparing the salary cost of the current PNs/ENs and that of PNs/Staff Nurses. In addition Staff Nurses can be trained faster than Professional Nurses.

The suggested norms need to be reviewed and agreed by the national PHC team and piloted in an NHI pilot district.. But norms are not static, they may be reviewed after implementation of the PHC Re-engineering, in the meantime the long term target requirements for South-Africa represent an order of magnitude to inform training needs.

The suggested norms represent a significant increase in staffing even when applied to the current level of utilisation in PHC facilities and it might be necessary to .prioritise their implementation for specific target areas such as rural areas and poorer urban areas. Prioritising some components of the package at the expense of others may lead to poor outcomes: the real impact of the ward PHC Outreach teams and school health requires that PHC facilities are able to respond to increased referrals.

RECOMMENDATIONS

The following recommendations are aimed at ensuring the acceptability of the suggested norms, their implementation at local level and their use to assess training needs:

- The NDoH PHC team needs to review/modify the suggested norms and agree to them formally
- Work on the impact of rurality needs to be integrated in the norms.
- Support/training of provinces/districts, starting with NHI pilot districts must be carried out to assist them with short-term decisions on deployment between facilities and priority recruitment.

- The long term picture of gaps at PHC level must be combined with that for other levels of care (hospitals) and information on staff availability in the private sector to inform modelling of training needs and the design of time lines given the training capacity.
- Promulgation of regulations and Implementation of the new staff nurse category

Table 21.   Assumptions Community Health Workers

Key interventions	Population Reference	Prevalence	Coverage	% Support group only	% Medium Intensity Home Visits	% High Intensity Home Visits	Number Home Visits per Case Medium Intensity	Number Home Visits per Case High Intensity	Home Visit Time Equivalent	Time weighted Number Home Visits Equivalent
Household Registration	All households	25%	75%		100%		1		1.5	2 952 621
Household screening	All households	25%	75%		100%		1		2.0	3 936 828
Additional Social Vulnerable households incl Alc & Substance Abuse	All households	25%	50%			100%		3	1.0	3 936 828
ANC	Under 1 * 1.04	100%	80%		65%	35%	3	4	1.0	2 382 948
PNC	Under 1 * 1.04	100%	90%		65%	35%	3	4	1.3	3 485 061
CHILDREN	Under 1	100%	80%		65%	35%	3	5	1.0	2 530 685
	1 to 4	100%	70%		65%	35%	3	5	1.0	9 072 424
HIV	Total Population	11%								
on ART at beginning of Year			100%	35%	35%	10%	4	6	0.5	1 015 918
ART Initiations required this year	HIV - on ART	31%	50%							
New ART + TB	ART Initiation Ca	60%	90%			100%		16	0.5	2 489 383
New ART no TB	ART Initiation Ca	50%	90%			100%		16	0.5	2 074 486
HIV not ART			70%		100%		1		0.5	1 081 513
TB	Total Population	0.8%								
TB only new cases	TB cases-TB&ART		80%			100%		16	0.5	118 548
MDR TB 1st 6 months	TB New Cases	3.01%	95%		0%	100%	13	6	0.5	28 264
MDR TB 2nd 6 months Year 1	MDR 1st 6 month	100%	95%	75%	60%	40%	26	52	0.5	136 831
MDR TB 2nd Year	MDR 2nd 6 mont	100%	95%	75%	50%	25%	3	6	0.5	10 713
Chronics (HT, Diab, Asthma) under 4	Under 40	12%	50%	75%	20%	20%	3	6	0.5	1 722 554
Chronics (HT, Diab, Asthma) over 40	40+	35%	50%	30%	20%	20%	3	6	0.5	1 589 754
Mental Health requiring support	5 and over	17%	50%	30%	50%	20%	4	6	0.7	6 954 949
Malaria	Total Pop	0.02%	95%	0%	90%	10%	1	2	1.0	8 777

Table 22.   Assumptions Clinic Services

Package	PN	Enrolled Nurse	ENA	Dr : % patients referred	PHCN : % patients referred	Pharmacy Assistant Post-Basic	Consults/ Case	Prevalence	Coverage
				Consultation Time per Category of Staff					
ANC 1st	20		3	10%	10%	4	1	100%	90%
ANC Follow-up Simple	10		3	0%	5%	0	2	90%	90%
ANC Follow-up Complex	10		3	20%	30%	4	4	10%	90%
ANC 32 wks	10		3	2%	3%	3	1	100%	90%
ANC PMTCT HIV+			0	5%	10%	5	1	30%	90%
ANC ARV - incl below									
PNC	10		5	5%	10%	0	1	100%	90%
Pap-Smears	10		3	2%	8%	0	2	10%	90%
FP1	10		3	1%	4%	0	1	60%	90%
FP Follow-Up	10		0	0%	3%	0	3	60%	90%
Under 1 Visits	10		5	5%	10%	2	10	100%	90%
IMCI Basic over 1	10		3	2%	3%	4	3	100%	90%
IMCI Additional HIV-TB	10		3	15%	15%	4	3	7%	90%
Children Chronic in 'Chronics under 40' below									
Diarrhea	10		3	5%	5%	3	1	30%	90%
URTI	10		3	10%	10%	3	2	25%	90%
Under 5 Other Curative /Minor ailments	10		3	5%	5%	3	2	20%	90%
Over 5 Curative /Minor ailments	10		3	5%	5%	3	3	30%	90%
HCT not Pregnant Women							1	100%	18%
HIV								11%	100%
ART at beginning of Year assessment	10		3	10%	10%	5	2	100%	100%
ART short visits	5		0	2%	3%	3	5	100%	95%
ART Initiation								31%	50%
New ART + TB	10		3	30%	30%	4	3	50%	100%
New ART no TB	10		3	5%	5%	4	3	50%	100%
Post initiation Reassessment year 1	10		3	5%	5%	3	3	100%	100%
Post initiation short visits	5		0	2%	3%	3	7	100%	100%
HIV not ART - opportunistic infections	10		0	2%	8%	3	2	40%	90%
TB New Cases								0.8%	100%
TB New initiation treat excluding TB+ART	15		3	20%	40%	4	1	100%	95%
TB New Re-assessments	8		3	5%	5%	4	2	100%	95%
TB New scripts			3			3	4	100%	95%
TB MDR Initiation + Audio baseline	30		3	100%		3	1	3%	95%
TB MDR Reassessment Year 1+ Audio	30		3	100%		3	2	100%	100%
TB MDR Reassessment no Audio Year 1	5		3	100%		3	4	100%	100%
TB MDR Reassessment Year 2	5		3	100%		3	11	100%	95%
TB MDR scripts Year 2			3			3	6	100%	95%
Chronics under 40 1st visit	5		3	40%	40%	4	1	3%	95%
Chronics under 40 Reassessment	15		3	3%	7%	3	2	12%	95%
Chronics under 40 Short Visits	10		3	1%	4%	3	10	6%	95%
Chronics under 40 Complex	10		3	80%		4	10	1%	95%
Chronics Under 40 Repeat Scripts			3	0%	5%	3	5	5%	95%
Chronics 40+ 1st visit	20		3	40%	30%	4	1	5%	95%
Chronics 40+ Reassessment	15		3	3%	7%	3	2	35%	95%
Chronics 40+ Short Visits	10		3	1%	4%	3	10	9%	95%
Chronics 40+ Complex	10		3	70%		4	10	1%	95%
Chronics 40+ Repeat Scripts			3			3	5	25%	95%
Mental Health & Substance Abuse 1st	20		3	20%	30%	4	1	8%	60%
Mental Health& Substance Abuse Reasse	15		3	20%	30%	4	2	17%	60%
Mental Health Repeat	10		0	1%	4%	3	10	17%	60%
Geriatrics additional - 60+	10		3	10%	15%	4	3	40%	95%
Malaria	10		3	5%	5%	4	1	0.02%	90%

Table 23.   Assumptions CHC services

Package	Experienced Midwife	Advanced Midwife	Experienced Psychiatric Nurse	PN	EN	Nursing Assistant	%Counsellor / Mid-level Psychologist	Counsellor/ Mid-level Psychologist	Clinical Associate	% referral to Dr	Doctor time	PHCN	Pharmacy
Core Hours Services													
ANC referred scan-Xray		10				3				20%	10		5
Genetic Services				20						40%	10		
Sterilisation													
Female						30	100%	20		100%	30		3
Male						30	100%	20		100%	30		3
Followup Checkup													
Female				10						5%	5		
Male				10						1%	5		
Surgical TOPs													
1st Visit				10	5		100%	20					3
Procedure						20	100%	10		100%	30		3
Male Circumsion													
Procedure						20	20%	15		100%	15		3
Follow-up				10	5					5%	5		
Special Services													
Mental Health New/Complex			30				80%	15		100%	10		5
Complex Communicable diseases (HIV,)				10		3				100%	10		5
TB complex				5						80%	15		5
Diarrhea complex				10		3				5%			5
Pneumonia Complex				10		3				20%			5
Chronic Unstable				10		3	50%	15		60%	10		5
Geriatrics additional - 60+				10		3	10%	15		10%	10		5
Optometry													
Physiotherapy													
Occupational Therapy													
Speech/Hearing Services													
Oral Health										5%	5		
After Hours													
Acute Curative all				10		3				80%	10		5
Emergencies													
Medical Emergencies				15		5				100%	15		5
Trauma/Surgical				15		5				100%	15		5
Sexual Assault Services						30	100%	20		100%	15		3
Short-term Stay													
Stabilisation/Observatiion 24 Hrs				60		120							
Simple Deliveries													
Pre-delivery	65												
Delivery	45									5%	15		
Post-Delivery	15			20	15								5
Supervision		10											

Table 24.   Total Target FTEs by PHC Component

Target for Full Implementation

SA Uninsured	Target U.R.	Family Medecine	Paediatrician	O&G	Anaesthesiologist	Doctor	Advanced Paediatric Nurse	Advanced Midwife	PHCN	Experienced Midwife	Experienced Psychiatric Nurse	PN	Nursing Assistant	Counsellor/ Mid-level Psychologist	Pharmacy assistant Post-Basic	Optometrist	Dental Therapist	Oral Hygienist	Dental Assistant	Optometrist	Nutritionist	Health Promoters	Env. Health Practioners	CHW	Home-Based Carers	Admin
Outreach												7 453									344	858		44 792	29 395	
School Health												1 284	817									285				
Clinic services	4.44					1 588			5 191			28 395	6 230	11 720	8 342							858				8 675
CHC services	0.33					488		156	310	396	32	522	484	189	308	2 101	620	3 565	2 713	2 101						645
Specialised Team		52	52	52	52		52	52	52																	
Long-term Total	4.77	52	52	52	52	2 076	52	208	5 553	396	32	37 653	7 531	11 909	8 649	2 101	620	3 565	2 713	2 101	344	2 000	4 999	44 792	29 395	9 320

Target HR for Current UR of PHC Fac

SA Uninsured	Current U.R. Adapted	Family Medecine	Paediatrician	O&G	Anaesthesiologist	Doctor	Advanced Paediatric Nurse	Advanced Midwife	PHCN	Experienced Midwife	Experienced Psychiatric Nurse	PN	Nursing Assistant	Counsellor/ Mid-level Psychologist	Pharmacy assistant Post-Basic	Optometrist	Dental Therapist	Oral Hygienist	Dental Assistant	Optometrist	Nutritionist	Health Promoters		CHW	Home-Based Carers	Admin
Outreach		-	-	-	-	-	-	-	-	-	-	7 453	-	-	-	-					344	858		44 792	29 395	-
School Health												417	225									25				
Clinic services	2.62	-	-	-	-	936	-	-	3 061	-	-	16 745	3 674	6 911	4 919	-						506		-	-	5 116
CHC services	0.19	-	-	-	-	288	-	92	183	234	19	308	285	111	181	1 239	366	2 102	1 600	1 239		-		-	-	380
Specialised Team		52	52	52	52		52	52	52																	
Total for Current UR	2.81	52	52	52	52	1 224	52	144	3 296	234	19	24 923	4 184	7 023	5 100	1 239	366	2 102	1 600	1 239	344	1 389	3 333	44 792	29 395	5 496

Nurses and nursing are the backbone of PHC service delivery and therefore this annexure outlines some of the key issues that will impact on determining and implementing PHC HR norms. For the purpose of this model the scope of practice and the categories of nurses used were based on the provisions of the Nursing Act, 33 of 2005. It is therefore imperative that these provisions of the Nursing Act are clearly explained especially as far as they impact on nursing practice in the context of PHC services.

1   BACKGROUND

The practice of nurses over the last 10 to 15 years has undergone major transition due to various developments and changes in the health care delivery system. Some of these developments include the restructuring of the health service post 1994, the impact of HIV and AIDS, task shifting due to scarcity of other categories of health professionals. Over this period a significant mismatch developed between the scope of practice, education and training and level of competence of the different categories of nurses and the health service delivery demands.

In response to the above the South African Nursing Council during the period 2003 to 2007 undertook an extensive review of the nursing profession. The review took into consideration the appropriateness and relevance of the existing legislation (Nursing Act, 1978) and regulations, categories of nurses and their scopes of practice especially with regard to delivery of PHC services, competence of nurses for delivering appropriate and quality health care and the education and training requirements and qualifications of nurses.

2   NURSING ACT, 33 OF 2005

The outcome of the review process was the Promulgation of the Nursing Act, 33 of 2005 in December 2007 which focused on creating an enabling regulatory environment to transform the scope, practice, education and training of nurses and midwives in line with the health sector legislative and policy changes.

2.1   Revised Category of Nurse and New Scopes of Practice for Nurses

More specifically Section 30 of the Nursing Act 33 of 2005 (excerpt below) makes provision for revised scopes of practice for the different category of nurses and replaces the category of enrolled nurse with a new category of nurse called the "staff nurses" (this term is not to be confused with the term staff nurse used to describe the post of staff nurse). The creation and introduction of the category of staff nurse to replace the current category of enrolled nurse was informed by the need to have a mid-level nurse who can contribute to providing PHC services. The scope of this new category of nurse includes a wide range of services to persons whose condition is stable, this includes maternal and child health at a primary health care setting. Another important aspect of the practice of a staff nurse is that Section 56 of the Nursing Act, 2005 makes provision for a staff nurse that meets the prescribed training requirements may be licensed to assess, diagnose, treat and prescribe medication. The introduction of the staff nurse will no doubt once fully implemented have a profound impact on addressing the human resource challenges especially in the under resourced and rural areas of the country.

"30.   (1)   A *professional nurse* is a person who is qualified and competent to independently practise comprehensive nursing in the manner and to the level prescribed and who is capable of assuming responsibility and accountability for such practice.

(2)   A *midwife* is a person who is qualified and competent to independently practise midwifery in the manner and to the level prescribed and who is capable of assuming responsibility and accountability for such practice.

(3)   A *staff nurse* is a person educated to practise basic nursing in the manner and to the level prescribed.

(4)   An *auxiliary nurse* or an *auxiliary midwife* is a person educated to provide elementary nursing care in the manner and to the level prescribed."

2.2   Implementing an enabling mechanism for professional nurses and staff nurses to prescribe treatment

The Nursing Act, 2005 with the broadened scope of practice especially for the professional nurse, midwife and staff nurse creates a regulatory environment that enable task shifting both within the different categories and across other health professionals.

Section 56 of the Nursing Act, 2005 makes provision for nurses (staff nurses, professional nurses and midwives) who meet the prescribed training and competence requirements and who provide public health services to be licensed to assess, diagnose, treat and prescribe medication and the regulations to give effect to this section are drafted and are awaiting publication. Once implemented, section 56 of the Nursing Act, 2005 will facilitate nurses assuming responsibilities for treating and managing some of the health priorities at a PHC level.

3 WAY FORWARD

3.1 The Department of Health publish enabling Regulations to give effect to relevant sections of the Nursing Act 33 of 2005 that will facilitate improved service delivery of PHC services by nurses
   a. Regulations required for implementing Section 31 i.e. the new category of staff nurse the revised scopes of practice for all categories of nurses
       Draft regulations were published by the Department of Health in the Nursing Strategy (Department of Health, 2008) (To date these regulations are not yet published in a Gazette)
   b. Regulations required for implementing Section 56 which makes provision for nurses (staff nurses, professional nurses and midwives) who meet the prescribed training and competence requirements and who provide public health services to be licensed to assess, diagnose, treat and prescribe medication.

3.2 Further delays in finalising the enabling regulations will result in:
   1. Delays in the scaling up of the training of the new category of staff nurse (creating delays in addressing staffing challenges)
   2. Non-implementation of the new scopes of practice and competence requirements for all categories of nurses impacting on the capacity of nurses to address the numerous PHC service delivery issues
   3. The new nursing education and training qualifications that address the health service challenges that nurses are required to address remaining unimplemented