

3. PROJECTED HUMAN RESOURCE REQUIREMENTS

Based on the Need and Supply analysis under the situational analysis, Human Resource needs and supply of the various categories of health professional for the period 2007 – 2011 can be deduced based on the 2006 figures

3.1 Service Delivery Goals for 2011

INDICATOR	'06	'07	'08	'09	'10	'11
Reducing Maternal Mortality						
Maternal Mortality Rate	214	210	200	185	160	120
Antenatal Clinic (ANC) Coverage	95	95	95	96	96	99
Supervised Delivery	58	59	60	62	65	70
Maternal Mortality Rate (Institutional)	2.4	2.3	2.2	2.1	1.8	1.5
TT2 + Immunization	90	91	92	93	95	96
IPT Coverage in pregnant women	20	25	30	33	40	55
Total Fertility Rate (TFR)	4.4	4.4	4.4	4.3	4.3	4.2
CPR for modern methods	0.26	0.27	0.28	0.3	0.35	-
Child Morbidity and Mortality						
Infant mortality rate	66	66	64	62	59	53
Child Mortality Rate (CMR)	111	110	105	103	100	90
Districts implementing IMCI	0.37	0.4	0.43	0.45	0.55	0.65
Penta 3 Coverage	0.91	0.91	0.92	0.92	0.94	0.94
Districts with ≥80% EPI coverage	NA	0.6	0.65	0.66	0.7	0.75
Underweight in children ≤ 5 years	22.1	20.0	19.0	18.0	16.0	14.0
Reducing Communicable Disease Burden						
Malaria Control						
At risk group sleeping under ITN	0.04	0.07	0.09	0.15	0.25	0.35
Appropriate management of malaria cases in health Institutions	0.35	0.37	0.39	0.41	0.5	0.6
Guinea worm cases	5900	4000	3500	3000	2000	1500
Threats to Life Expectancy						
HIV/AIDS						
HIV sero-prevalence	3.6	3.6	3.5	3.5	3.0	2.0
HIV awareness	0.95	0.99	0.99	0.99	0.99	0.99
Condom use	0.18	0.2	0.22	0.23	0.26	0.3
PLWHA on ART	>1%	0.02	0.04	0.08	0.15	0.25
Tuberculosis						
Treatment success	0.5	0.52	0.53	0.54	0.6	0.7
Case detection rate	0.37	0.4	0.45	0.47	0.55	0.6
Neglected Diseases						
CDTI coverage for lymphatic filariasis	0.75	0.75	0.75	0.75	0.75	0.75
Coverage of Schistosomiasis treatment	0.05	0.08	0.1	0.12	0.15	0.25

TT prevalence in women	NA	<3%	<3%	<3%	<3%	<3%
Buruli prevalence in endemic districts/100,000	147	146	146	144	140	130
Buruli cases under on treatment	720	720	705	730	750	800

Targets by the Ghana Micro Health Indicators (GMHI) based on upward review of the GPRS targets

3.1.1 Planned Expansion of Facilities

Level	No of facilities needed	Current Situation	GAP
Community level CHPS Compounds	6CHPS compounds x 6 Sub-districts x 138 Districts = 4,968	47 + 374 Clinics = 421	4547
Sub-district Health Centers	6 health centers x 138 districts =828	488	340
District Hospitals	138	72	66
Regional Hospitals	10	10	0
Ambulance Stations	1 station per DISTRICT (138)	19	119
Teaching Hospitals	4	2	2

Health Intervention Strategies

Strategy	'06	'07	'08	'09	'10	'11
CHPS (*)	320	320	320	320	320	320
National Health Insurance	30	40	50	55	65	80

Adapted from, targets by the Ghana Micro Health Indicators (GMHI)

Projection of Staff Supply

Table 14 provides details of projected increases in the pre-service training capacity for the health professions in the country.

HUMAN RESOURCE TRAINING PROJECTIONS

Table 14

Number	Category	Year					
1	Medicine(Doctors)						
	Year	2006	2007	2008	2009	2010	2011
	Intake (10% increase over each year)	260	286	315	346	381	419
	1% dropout rate	3	3	3	3	4	4
	Output	250	275	303	333	366	403
2	Pharmacy						
	Year	2006	2007	2008	2009	2010	2011
	Intake (10% increase over each year)	139	152.9	168	185	204	224
	1% dropout rate	1	2	2	2	2	2
	Output	90	100	100	105	138	151
3	Pharmacy Technician/Technology						
	Year	2006	2007	2008	2009	2010	2011
	Intake (10% increase over each year)	76	84	92	101	121	133
	1% dropout rate	1	1	1	1	1	1
	Output	62	45	47	75	83	91
4	General Nursing (Degree)						
	Year	2006	2007	2008	2009	2010	2011
	Intake (5% increase over each year)	90	95	99	104	109	115
	1.5% dropout rate	1	1	1	2	2	2
	Output	30	30	30	40	89	93
5	General Nursing (Diploma), Public						
	Year	2006	2007	2008	2009	2010	2011
	Intake (5% increase over each year)	1850	1943	2040	2142	2249	2361
	0.5% dropout rate	9	10	10	11	11	12
	Output	1200	1,300	1,415	1841	1933	2029
6	General Nursing (Diploma), Private						
	Year	2006	2007	2008	2009	2010	2011

	Intake (5% increase over each year)	200	201	203	205	207	209
	1% dropout rate	2	2	2	2	2	2
	Output	120	120	120	198	199	201
7	Mental Nursing (Diploma)						
	Year	2006	2007	2008	2009	2010	2011
	Intake (5% increase over each year)	370	389	408	428	450	472
	1% dropout rate	4	4	4	4	4	5
	Output	150	200	250	366	385	404
	Total Prod. (General nursing)	1500	1650	1815	2445	2605	2727
8	Midwifery (Diploma)						
	Year	2006	2007	2008	2009	2010	2011
	Intake (20% increase over each year)	535	642	770	924	1109	1331
	1% dropout rate	5	6	8	9	11	13
	Output	140	250	313	530	636	763
9	Midwifery (post basic)						
	Year	2006	2007	2008	2009	2010	2011
	Intake (5% increase over each year)	150	158	165	174	182	191
	1% dropout rate	2	2	2	2	2	2
	Output	60	149	156	164	172	181
	Total Prod. (midwives)	200	399	468	693	807	943
10	Community Health Nursing (Diploma)						
	Year	2006	2007	2008	2009	2010	2011
	Intake (5% increase over each year)	60	63	66	69	73	77
	2% dropout rate	1	1	1	1	1	2
	Output	0	48	59	62	65	68
11	Community Health Nursing (certificate)						
	Year	2006	2007	2008	2009	2010	2011
	Intake (20% increase over each year)	1660	1992	2191	2410	2651	2916
	0.5% dropout rate	8	10	11	12	13	15
	Output	1173	1340	1652	1982	2180	2398
	Total Prod. (Community Health Nurses)	1173	1388	1711	2044	2245	2466
12	Medical Assistants (Diploma)						
	Year	2006	2007	2008	2009	2010	2011

	Intake (50% increase over each year)	50	75	83	91	100	110
	2% dropout rate	1	2	2	2	2	2
	Output	0	0	0	49	74	81
13	Medical Assistants (Post basic)						
	Year	2006	2007	2008	2009	2010	2011
	Intake (5% increase over each year)	103	108	114	119	125	131
	2% dropout rate	2	2	2	2	3	3
	Output	41	101	106	111	117	123
14	Community Oral Health (Diploma)						
	Year	2006	2007	2008	2009	2010	2011
	Intake (5% increase over each year)	7	7	8	8	9	9
	2% dropout rate	0	0	0	0	0	0
	Output	9	7	7	8	8	8
	Total Prod. (Medical Assist.)	41	101	106	160	190	204
15	Health Assistants, Clinical (Certificate) public						
	Year	2006	2007	2008	2009	2010	2011
	Intake (20% increase over each year)	460	552	662	795	954	1145
	1% dropout rate	5	6	7	8	10	11
	Output	0	0	455	546	656	787
16	Health Assistants, clinical (certificate) Private						
	Year	2006	2007	2008	2009	2010	2011
	Intake (10% increase over each year)	100	110	121	133	146	161
	1% dropout rate	1	1	1	1	1	2
	Output	0	0	99	109	120	132
	Total production (health Assist. Clinical)	0	0	554	655	776	919
17	Health Assistants, Lab (certificate)						
	Year	2006	2007	2008	2009	2010	2011
	Intake (5% increase over each year)	0	50	53	55	58	61
	2% dropout rate	0	1	1	1	1	1
	Output	0	0	0	49	51	54
18	Ear, Nose and Throat (Post Basic Nursing)						
	Year	2006	2007	2008	2009	2010	2011

	Intake (5% increase over each year)	15	16	17	17	18	19
	1% dropout rate	0	0	0	0	0	0
	Output	15	15	15	16	17	18
19	Anesthesia (Post Basic Nursing)						
	Year	2006	2007	2008	2009	2010	2011
	Intake (5% increase over each year)	48	50	53	56	58	61
	0.5% dropout rate	0	0	0	0	0	0
	Output	44	48	50	53	55	58
20	Residents (Medicine and Dental)						
	Year	2006	2007	2008	2009	2010	2011
	Intake (10% increase over each year)	115	116	117	118	120	121
	5% dropout rate	6	6	6	6	6	6
	Output	0	64	65	109	110	111
21	BSc, Herbal Medicine						
	Year	2006	2007	2008	2009	2010	2011
	Intake (5% increase over each year)	15	16	17	17	18	19
	2% dropout rate	0	0	0	0	0	0
	Output	15	15	15	15	15	15
22	Technical Officer (Community Health (Diploma))						
	Year	2006	2007	2008	2009	2010	2011
	Intake (No increase for the next five years)	85	85	85	85	85	85
	1% dropout rate	1	1	1	1	1	1
	Output	0	70	70	84	84	84
23	Technical Officer (Health Information (Diploma))						
	Year	2006	2007	2008	2009	2010	2011
	Intake (10% increase over each year)	60	66	73	80	88	97
	1% dropout rate	1	1	1	1	1	1
	Output	30	30	30	59	65	72
24	Technical Officer (Medical Laboratory (Diploma))						
	Year	2006	2007	2008	2009	2010	2011
	Intake (10% increase over each year)	40	44	48	53	59	64
	1% dropout rate	1	1	1	1	1	1
	Output	0	0	29	39	43	47

25	Field Technicians (Certificate)						
	Year	2006	2007	2008	2009	2010	2011
	Intake (10% increase over each year)	107	118	129	142	157	172
	1% dropout rate	1	1	1	1	2	2
	Output	80	99	106	117	128	141
26	Environmental Health (Diploma)						
	Year	2006	2007	2008	2009	2010	2011
	Intake (5% increase over each year)	70	74	77	81	85	89
	2% dropout rate	1	1	2	2	2	2
	Output	60	60	60	69	72	76
27	Environmental Health Asst. (Certificate)						
	Year	2006	2007	2008	2009	2010	2011
	Intake (10% increase over each year)	250	275	303	333	366	403
	1% dropout rate	3	3	3	3	4	4
	Output	150	150	248	272	299	329
	Total Production (Env. health officers.)	210	210	308	341	372	405
28	Public health Nursing (Post Basic)						
	Year	2006	2007	2008	2009	2010	2011
	Intake (2% increase)	40	41	42	42	43	44
	1% dropout rate	0	0	0	0	0	0
	Output	39	40	40	40	41	42
29	Laboratory Technology (Diploma, Universities)						
	Year	2006	2007	2008	2009	2010	2011
	Intake (5% increase over each year)	70	74	77	81	85	89
	1% dropout rate	1	1	1	1	1	1
	Output	45	45	45	69	73	76
30	Medical Laboratory Technology (Degree)						
	Year	2006	2007	2008	2009	2010	2011
	Intake (5% increase over each year)	52	55	57	60	63	66
	1% dropout rate	1	1	1	1	1	1
	Output	50	50	50	50	51	54
	Total Production (Lab Tech)	95	95	95	119	124	130

31	X' Ray Technicians (Diploma)						
	Year	2006	2007	2008	2009	2010	2011

	Intake (5% increase over each year)	10	11	11	12	12	13
	1% dropout rate	0	0	0	0	0	0
	Output	10	10	10	10	10	11
32	X' Ray Technicians (Degree)						
	Year	2006	2007	2008	2009	2010	2011
	Intake (5% increase over each year)	58	70	82	94	106	118
	1% dropout rate	1	1	1	1	1	1
	Output	50	50	50	50	57	69
	Total Production (X-Ray Tech)	60	60	60	60	68	80
33	Physiotherapy (Degree)						
	Year	2006	2007	2008	2009	2010	2011
	Intake (5% increase over each year)	31	33	34	36	38	40
	1% dropout rate	0	0	0	0	0	0
	Output	30	30	30	30	31	32
34	Peri-operative/Critical Care Nursing (Post Basic)						
	Year	2006	2007	2008	2009	2010	2011
	Intake (5% increase over each year)	44	46	49	51	53	56
	1% dropout rate	0	0	0	1	1	1
	Output	40	44	46	48	50	53
35	Ophthalmic Nursing						
	Year	2006	2007	2008	2009	2010	2011
	Intake (5% increase over each year)	30	32	33	35	36	38
	1% dropout rate	0	0	0	0	0	0
	Output	30	30	31	33	34	36
36	Emergency Medical Technicians						
	Year	2006	2007	2008	2009	2010	2011
	Intake (10% increase over each year)	58	64	70	77	85	93
	2% dropout rate	1	1	1	2	2	2
	Output	57	63	69	76	83	92
37	Oral Health (Technical Officer)						
	Year	2006	2007	2008	2009	2010	2011
	Intake (5% increase over each year)	30	32	33	35	36	38
	1% dropout rate	1	1	1	1	1	1
	Output	29	31	32	34	36	38

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GAP (November-December)	685	576	463	299	106	(97)
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SUPPLY AND PROJECTIONS

MEDICAL OFFICERS	Years					
	2006	2007	2008	2009	2010	2011
Projected 2.4% population growth	21,804,143	22,327,442	22,863,301	23,412,020	23,973,908	24,549,282
No. at Post (January)	2,026	2,238	2,671	3,135	3,631	4,163
Current ratio (1:10,762)	10,762	9,976	8,559	7,469	6,603	5,897
No. required based on norms	3,732	3,732	3,732	3,732	3,732	3,732
1.5% attrition (outward migration, deaths, resignations)	30.39	33.57	40.07	47.02	54.46	62.44
Shortfall	1,996	2,205	2,631	3,088	3,576	4,101
Annual production (output from schools, October)	250	275	303	333	366	403
Other recruitments (contracts, re-engagements, expatriate)	0	200	210	221	232	243
number by October	2,238	2,671	3,135	3,631	4,163	4,734
GAP (November-December)	1,494	1,061	597	101	(431)	(1,002)

GENERAL NURSES (RGN, SRN, ENROLLED.)	Years					
	2006	2007	2008	2009	2010	2011
Projected 2.4% population growth	21,804,143	22,327,442	22,863,301	23,412,020	23,973,908	24,549,282
No. at Post (January)	10,260	11,459	13,023	14,720	16,999	19,391
Current ratio (1:2,125)	2,125	1,949	1,756	1,590	1,410	1,266
No. required based on norms	19,181	19,181	19,181	19,181	19,181	19,181
2.5% attrition (outward migration, deaths, resignations)	257	286	326	368	425	485
Shortfall	10,004	11,172	12,697	14,352	16,574	18,906
Annual production (output from schools, October)	1,500	1,650	1,815	2,445	2,605	2,727

Other recruitments (contracts, re-engagements, expatriate)	-	250	263	276	289	304
number by October	11,459	13,023	14,720	16,999	19,391	21,855
GAP (November-December)	7,723	6,158	4,461	2,182	(210)	(2,674)

MIDWIVES	Years					
	2006	2007	2008	2009	2010	2011
Projected 2.4% population growth	21,804,143	22,327,442	22,863,301	23,412,020	23,973,908	24,549,282
No. at Post (January)	2,810	2,962	3,424	3,953	4,699	5,550
Current ratio (1:7,759)	7,759	7,538	6,677	5,923	5,102	4,423
No. required based on norms	8,205	8,205	8,205	8,205	8,205	8,205
1.5% attrition (outward migration, deaths, resignations)	42	44	51	59	70	83
Shortfall	2,768	2,917	3,373	3,894	4,628	5,467
Annual production (output from schools, October)	200	399	468	693	807	943
Other recruitments (contracts, re-engagements, expatriate)	-	120	126	132	139	146
number by October	2,962	3,424	3,953	4,699	5,550	6,528
GAP (November-December)	5,243	4,781	4,252	3,506	2,655	1,677

COMMUNITY HEALTH NURSES	Years					
	2006	2007	2008	2009	2010	2011
Projected 2.4% population growth	21,804,143	22,327,442	22,863,301	23,412,020	23,973,908	24,549,282

No. at Post (January)	3,246	4,375	5,805	7,546	9,604	11,846
Current ratio (1:6,717)	6,717	5,104	3,938	3,103	2,496	2,072
No. required based on norms	12,934	12,934	12,934	12,934	12,934	12,934
1% attrition (outward migration, deaths, resignations)	32	44	58	75	96	118
Shortfall	3,214	4,331	5,747	7,470	9,508	11,728
Annual production (output from schools, October)	1,173	1,388	1,711	2,044	2,245	2,466
Other recruitments (contracts, re-engagements, expatriate)	-	100	105	110	116	122
number by October	4,375	5,805	7,546	9,604	11,846	14,291
GAP (November-December)	8,559	7,129	5,388	3,330	1,088	(1,357)

LABORATORY TECHNICIANS/TECHNOLOGISTS	Years					
	2006	2007	2008	2009	2010	2011
Projected 2.4% population growth	21,804,143	22,327,442	22,863,301	23,412,020	23,973,908	24,549,282
No. at Post (January)	430	518	609	699	812	928
Current ratio (1:50,707)	50,707	43,136	37,549	33,491	29,529	26,447
No. required based on norms	1,062	1,062	1,062	1,062	1,062	1,062
1.5% attrition (outward migration, deaths, resignations)	6	8	9	10	12	14
Shortfall	424	510	600	689	800	914
Annual production (output from schools, October)	95	95	95	119	124	130
Other recruitments (contracts, re-engagements, expatriate)	-	5	5	6	6	6
number by October	518	609	699	812	928	1,049
GAP (November-December)	544	453	363	250	134	13

X'RAY TECHNOLOGISTS	Years					
	2006	2007	2008	2009	2010	2011
Projected 2.4% population growth	21,804,143	22,327,442	22,863,301	23,412,020	23,973,908	24,549,282
No. at Post (January)	108	166	227	287	346	413
Current ratio (1:201,890)	201,890	134,681	100,856	81,605	69,209	59,419
No. required based on norms	1,062	1,062	1,062	1,062	1,062	1,062
1.5% attrition (outward migration, deaths, resignations)	2	2	3	4	5	6
Shortfall	106	163	223	283	341	407
Annual production (output from schools, October)	60	60	60	60	68	80
Other recruitments (contracts, re-engagements, expatriate)	-	4	4	4	5	5
number by October	166	227	287	346	413	491
GAP (November-December)	896	835	775	716	649	571

PHARMACISTS	Years					
	2006	2007	2008	2009	2010	2011
Projected 2.4% population growth	21,804,143	22,327,442	22,863,301	23,412,020	23,973,908	24,549,282
No. at Post (January)	1,550	1,629	1,714	1,824	1,910	2,072
Current ratio (1:14,067)	14,067	13,704	13,337	12,836	12,551	11,850
No. required based on norms (1:8,000)	2,726	2,625	2,625	2,625	2,625	2,625
1.5% attrition (outward migration, deaths, resignations)	23	24	26	27	29	31

Shortfall	1,527	1,605	1,689	1,797	1,881	2,041
Annual production (output from schools, October)	95	100	124	100	175	138
Other recruitments (contracts, re-engagements, expatriate)	8	10	12	14	16	20
Number by October	1,629	1,714	1,824	1,910	2,072	2,198
GAP (November-December)	1,097	911	801	715	553	427

HEALTH ASSISTANTS	Years					
	2006	2007	2008	2009	2010	2011
Projected 2.4% population growth	21,804,143	22,327,442	22,863,301	23,412,020	23,973,908	24,549,282
No. at Post (January)	-	-	-	554	776	919
Current ratio	-	-	-	42,260	30,894	26,713
No. required based on norms	7,176	7,176	7,176	7,176	7,176	7,176
0.5% attrition (outward migration, deaths, resignations)	-	-	-	3	4	5
Shortfall	-	-	-	551	772	914
Annual production (output from schools, October)	-	-	554	655	776	919
Other recruitments (contracts, re-engagements, expatriate)	-	-	-	-	-	-
Number by October	-	-	554	1,203	1,544	1,829
GAP (November-December)	7,176	7,176	6,622	5,973	5,632	5,347

MEDICAL ASSISTANTS	Years					
	2006	2007	2008	2009	2010	2011
Projected 2.4% population growth	21,804,143	22,327,442	22,863,301	23,412,020	23,973,908	24,549,282
No. at Post (January)	500	557	666	779	943	1,136
Current ratio (1:43,608)	43,608	40,067	34,310	30,060	25,414	21,606
No. required based on norms	1,242	1,242	1,242	1,242	1,242	1,242
1.5% attrition (outward migration, deaths, resignations)	8	8	10	12	14	17
Shortfall	493	549	656	767	929	1,119
Annual production (output from schools, October)	50	103	108	162	193	206
Other recruitments (contracts, re-engagements, expatriate)	15	15	15	15	15	15
number by October	557	666	779	943	1,136	1,339

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