FOREWORD

The Ghana Health Service 2011 Annual report summarizes the second year of operations under its five new Health Sector Objectives within the Health Sector Medium Term Development Plan (HSMTDP 2011–2013). 2011 has been a year of profound challenges for the Health Sector in Ghana. Nonetheless, in the face of these challenges, the GHS has continued to work and collaborate with its partners in Health to deliver on its mandate under the Planned Action Programme of Work. There has been continued expansion of CHPS and the Service has made some headway in repositioning CHPS to accelerate countrywide access to primary health care and particularly to promote child survival.

OPD attendance has been increasing constantly since the implementation of the NHIS with 82% of insured clients. There has been progressive work in strengthening surveillance systems of epidemic diseases, even in the face of limited resources, and sustained efforts towards the total eradication of the Guinea Worm disease as well as Polio in Ghana. The country remains on the verge of eradicating both Guinea Worm and Polio.

This 2011 Annual Report highlights some overarching issues that challenged the operations of the Service during the year and outlines the plans for the next year. Topical issues in the Service in 2011 included:

1. Migration of Health Workers unto the Single Spine Salary Structure
2. Inadequate numbers of skilled personnel particularly, midwives and medical assistants
3. The continued decline in EPI coverage in some Regions.
4. The increase in institutional Maternal Mortality

However, I wish to acknowledge the hard work of all staff of the Ghana Health Service, particularly in this very challenging year for the Service, for their commitment to keeping the values of the Service and their indefatigable service that have contributed to the accomplishments of the Health Sector in 2011. I also wish to acknowledge all the cooperation I have received during these few months in office as Acting Director General of this dynamic organization and wish to thank each
and every one of you for your support.

Our experiences in these few years of implementing our new strategic health plan has indeed brought to the fore our strengths and short-comings as a Service, as well as opportunities to improve on how we plan, distribute and manage our resources to attain optimum output and more favourable health outcomes in the Health Sector.

The Ghana Health Service is indeed moving beyond strategy to action and continues to focus on improving access and quality health care for all Ghanaians. I wish to acknowledge the hard work of the immediate past Director General, Dr. Elias Sory and his Deputy, Dr. George Amofa, for their commitment to the vision and mission of the Service. Through their leadership the Service has continued to make laudable achievements in the health sector and on behalf of all the staff of GHS and on my own behalf, I say well done and wish both the best for the future.

Finally, I wish to entreat us all to build institutional memory in our younger staff, it is easier to build on the good foundations of true and committed leadership when these foundations are understood. The GHS needs to cohere and pull together as One GHS, maintaining a set of minimum care and service standards in all facilities and this should only get better as we forge ahead together.

GHS has always prided itself as being a pacesetter among MDAs in Ghana, I will further entreat all in the coming year to strengthen the quality of our interactions with clients, and strengthen the quality of staff in the GHS to enrich the client experience not only at our service delivery points but at every office within the GHS. Let us work together to redefine customer service in health service provision and administration.

Thank you.

Dr. Frank Nyongator
Ag. Director General
Ghana Health Service
EXECUTIVE SUMMARY

The GHS sustains its purpose of increasing and improving access to health care and services through the expansion of CHPS. This is evident in the continuous expansion of functional CHPS zones in all Regions, a profound effort that has been driven in large part by increasing District Assembly involvement and the availability of community health nurses. The number of functional CHPS zones increased from 868 in 2009 to 1,034 in 2010 and in 2011, 652 more CHPS were made functional bringing the total number of functional CHPS to 1,675.

The strength of the Health Sector workforce has progressively improved, especially in the numbers of key health workers. Trends over the three-year period under review (2009 – 2011), the population-to-nurse ratio decreased to 1,240 clients: 1 nurse, in comparison to 1,489:1 (2010) and 1,497:1 (2009). Similarly, the population-to-doctor ratio has improved from 10,483:1 (2010) to 10,032:1 (2011). This is encouraging for the Health Service, particularly at a time when it is positioning itself for universal coverage. To achieve the goals of the health sector in the coming year, an equitable distribution of critical health staff coupled with an overall improvement in the quality of care given at all levels is not just necessary, but very urgent.

The proportion of OPD attendance by insured clients increased from 55.81% in 2010 to 82.11% in 2011, OPD per capita increased from 0.98 in 2010 to 1.07 in 2011, with CHPS contributing approximately 5% to the total OPD attendance countrywide. There has been a corresponding progressive and significant increase in IGF from increasing attendance of insured clients at GHS facilities. During 2011, attendance of insured clients at GHS facilities contributed to more than 80% of their total IGF after suffering a dip in 2010 (72%) in comparison to 77.9% in 2009.

The safe motherhood indicators show fairly sustained ANC coverages over the three-year period being reviewed that is, 92.1% (2009); 93.3% (2010) and 94.4% (2011). This has been in spite of the proportion of clients achieving the 4+ visits, which has continued to decline - 88% (2009) 82.4 % (2010) 74.9% (2011). The national rate of skilled delivery has continued to improve from 45.6% (2009), 49.5% (2010) to 52.2% (2011).

The national EPI recorded marginal increases in the coverage of all the antigens, although the 90% coverage target for all the antigens was not achieved.

There has been significant progress in developing a general Ghana Health Service Monitoring and Evaluation Framework as well as providing a manual on Standard Operating Procedures to guide definition of indicators and data management.

On the downside, the Service suffered the repercussions of late disbursements of service funds from the Government of Ghana, delaying the majority of its essential service activities that were scheduled to be implemented during the first quarter of the year.
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ACRONYMS and ABBREVIATIONS

ACTs  Artemisinin- based Combination Therapies
ADB  Agricultural Development Bank
AEFI  Adverse Events Following Immunization
AFENET  African Field Epidemiology Network
AFRO  African Regional Office of WHO
AMA  Accra Metropolitan Assembly
AMFm  Affordable Medicines Facility for Malaria
AMP  Alliance for Malaria Prevention
ANC  Ante Natal Care
APOC  African Programme for Onchocerciasis Control
BCC  Behavior Change Communication
BMCs  Budget Management Centers
CBAs  Community-based Agents
CDR  Case Detection Rate
CTDI  Community-directed Treatment with Ivermectin
CFR  Case Fatality Ratio
CHO  Community Health Officer
CHPS  Community-based Health Planning and Services
CPD  Continuing Professional Development
DC  Disease Control
DDHS  District Director of Health Services
DFID  UK Department for International Development
DHIMS  District Health Information Management Systems
DHMT  District Health Management Teams
DHS  Demographic Health Survey
DISHOP  District Health System Operationality
DSD  UN Division for Sustainable Development
DTS  Dried Tube Specimens
EmONC  Emergency Obstetrics and Neonatal Care
EMD  Epidemic Meningococcal Disease
ENRAC  Environmental Remediation and Construction
ENRH  Effia-Nkwanta Regional Hospital
EPA  Environmental Protection Agency
EPI  Expanded Programme on Immunization
EQA  External Quality Assessment
FDB  Food and Drugs Board
GAIN  Global Alliance for Improved Nutrition
GAVIHSS  Global Alliance for vaccines and Immunization Health Systems Strengthening
GES  Ghana Education Service
GHS  Ghana Health Service
GIS  Geographical Information System
GMA  Ghana Medical Association
GoG  Government of Ghana
HASS  Health Administrative Support Services
HCWM  Health Care Waste Management
HI  Health Information
HIA  Health Impact Assessment
HIRD  High Impact Rapid Delivery
HMM  Home Management of Malaria
HPV  Human papillomavirus
HRD  Health Research Development Division
HRDD  Human Resource and Development Division
HSMTDP  Health Sector Medium term Development Plan
HTC  HIV Testing and Counseling Services
ICD  Institutional Care Division
ICOH  International Commission on Occupational Health
ICT  Information Communication Technology
IDSR  Integrated Disease Surveillance and Response
IE&C  Information Education and Communication
IHR  International Health Regulation
IGF  Internally Generated Funds
IMCI  Integrated Management of Childhood Illness
IPHU  International Public Health Unit
IPT  Intermittent Preventive Treatment
IRS  Indoor Residual Spraying
ITNs  Insecticide-treated bednets
KATH  Komfo-Anokye Teaching Hospital
KBTH  Korle-bu Teaching Hospital
KNUST  Kwame Nkrumah University of Science and Technology
KRHTS  Kintampo Rural Health Training School
LCSs  Licensed Chemical Sellers
LDP  Leadership Development Program
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<td>Prevention of Disease</td>
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<td>PoW</td>
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INTRODUCTION

The Annual Reports of the GHS provide comprehensive summaries of the Service’s operations and performance during each review year, as well as providing comparative trend analysis of developments and the implementation of activities undertaken under the five health sector objectives.

The 2011 Annual Report of GHS covers the activities performed and achievements under the indicators of the Health Sector Medium term Development Plan (HSMTDP) 2010-2013 and the 2011 PoW.

The five Health Sector Objectives with which the Service assesses its performance are:

1. To bridge the equity gaps in access to health care and nutrition services and ensure sustainable financing arrangements that protect the poor
2. To improve governance and strengthen efficiency in health service delivery, including medical emergencies.
3. To improve access to quality maternal, neonatal, child and adolescent health services.
4. To intensify prevention and control of communicable and non-communicable diseases and promote healthy lifestyles
5. To improve institutional care including mental health service delivery

The above health sector objectives covers the period 2010 to 2013, a revision of the 2007 to 2011 PoW. The revised sector plan reflects the policies and priorities of the present government and expands on its commitments to the people of Ghana. GHS PoW for 2011, reflects the revised priorities of the sector.

To maintain consistency in the Service’s Annual reports, the outline of this report remains the same as much as possible as for previous years’ reports. However, information captured here has been aligned to and reflects the revised health sector objectives that commenced 2010. The 2011 Annual Report begins with a summary of the key priorities of the Service for 2011 and continues to give an overview of GHS’ performance by specific activities outlined under the five (5) health sector objectives. The continuation provides summary tables and narratives on key performance indicators.

The remaining reports outlines the chief challenges peculiar to the Service, which are also predominant in the Various Divisions, Regions and National Programmes, as well as an outlook and way forward for the year 2012.
2011 Annual Programme of Work: Summary of Key Priorities of GHS

Working under the theme: “Going Beyond Strategy To Action.” The 2011 Annual programme of work (PoW) outlined certain key priority areas to be covered by the Ghana Health Service during the year. These priorities have been broadly categorized under GHS’ five health objectives (HO).

**HO1: Bridge Equity Gaps In Access To Health Care And Nutrition Services And Ensure Sustainable Financing Arrangements That Protect The Poor**

- Review CHPS Strategy, operationalize new functional CHPS zones and provide service delivery kits, accommodation and transportation to all functional CHPS.
- Train sub-district teams to support approved service providers in the sub-district; Strengthen DHMTs and develop the district health departments in accordance with LI 1961.
- Scale –up production of middle –level cadre of staff: Community Psychiatric Nurses, Midwives, Medical Assistants, Laboratory Technologists and core auxiliary staff.
- Review establishments, human resource redeployment plan based on revised staffing norms; implement incentive package to public sector workers in under-served areas.

**HO2: Improve Governance And Strengthen Efficiency In Health Service Delivery, Including Medical Emergencies**

- Scale-up Leadership Development Programme and other similar initiatives to strengthen governance at all levels.
- Establish district league table and reward system.
- Develop capacity for data collection, analysis and use.
- Collaborate with Ministry of Education to integrate concepts of healthy lifestyle into school health programmes.

**HO3: Improve Access To Quality Maternal, Neonatal, Child And Adolescent Health Services**

- Implement the Millennium Development Goal 5 Accelerated Framework (MAF); and the recommendations from the report on Emergency Obstetrics and Newborn Care (EmONC): increase access to modern family planning services.
- Implement the National Child Health Policy and Strategy; increase uptake of EPI services: scale up school health programmes: train relevant Community health workers on integrated
case management of diarrhoea, pneumonia, malaria.

- Implement the activities under the Adolescent Health Policy and Strategy.
- Develop the National Nutrition Policy and Strategy; Scale-up essential nutrition actions for women and children.
- Develop and implement measures that ensure transfusion of safe blood and blood products; and improve access to safe blood.

**HO4: Intensify Prevention And Control Of Communicable And Non-Communicable Diseases And Promote Healthy Lifestyles**

- Scale-up vector control strategy: expand coverage and use of ITNs.
- Implement supplementary immunization activities for polio and yellow fever.
- Strengthen surveillance, reporting and emergency response systems.
- Improve HIV/AIDS, TB, Malaria, prevention, case detection and management at health facility level: implement national strategic plans to reduce new HIV infections.
- Establish National NCD Epidemiology Reference Group; expand screening programmes for selected NCDs – Diabetes, sickle cell and selected cancers.
- Implement the Behaviour Enhancing Communication including public education to intensify the promotion of healthy lifestyle.

**HO5: Improve Institutional Care, including Mental Health Service Delivery**

- Adopt a community mental health strategy to facilitate the implementation of the Mental Health Act.
- Review and develop standard protocols and guidelines for institutional care including referrals and ensure availability and use.
PERFORMANCE BY OBJECTIVES

HO1: Bridge Equity Gaps In Access To Health Care And Nutrition Services And Ensure Sustainable Financing Arrangements That Protect The Poor

Access to Healthcare

GHS has continued its commitments to reduce barriers to health services across the country (geographic access) by increasing the implementation and operationalization of CHPS, increasing the staff strength of key cadres, and coverage in the number of clients enrolling unto the national health insurance scheme. There has been ongoing renovation works in many of its facilities to meet the demand of health service delivery and care.

- Community-Based Health Planning And Services

Following the review of the CHPS strategy, there has been a significant increase in the number and operationalization of functional CHPS nationwide after the relatively slow start in CHPS implementation in previous years. Implementation of functional CHPS has doubled from 868 in 2009 to 1,675 in 2011. This increase has also been met with a correlated increase in the number of community health officers, most of whom have already had training in CHPS service delivery as part of their pre-service training (Fig. 1.0).

A functional CHPS zone is defined as a geographically well-defined area within a sub-district, with an assigned a CHO who has started offering community services including home visits to clients living in the zone. A CHPS is functional although one or more key milestones such a compound may not have been provided. The population covered by CHPS increased from 16.4% in 2009 to 21.78% in 2011 (Fig. 1.1). Coverage is still expected to increase in subsequent with the increasing implementation of functional CHPS zones.

- Human Resource Planning, Recruitment, Deployment, Retention and Management

There was increase in the absolute numbers of health workers in GHS across all Regions during 2011. This is in the wake of the decline in the absolute numbers of health workers in four of the regions: Eastern, Volta, Central and Western Regions between 2009 and 2010 (breakdown available in Key performance). Overall, the female staff represents an estimated 62% of the total workforce in the GHS although there are marked differences in the gender distribution across the regions. Female representation varies from about 68% in Greater Accra to 50% in the Upper East Region. This is because the number of female health workers decreases as one moves from the southern parts to the northern parts of the country, a phenomenon that may be attributed to the possibility of female health workers being more disinclined to accept postings to the northern part of the country.
Revision of staffing norms and implementation of incentive packages to health workers in underserved areas is currently underway.

There was significant improvement in the doctor: population ratio across all regions over the 2009 to 2011 period. The Northern Region in particular recorded an unprecedented improvement (over 65%) in its doctor: population ratio from 1: 65,252 (2009) to 1: 22,722 (2011). There is the need to point out that the vast majority of this proportion of doctors in the Northern Region is concentrated in the Tamale Teaching Hospital.

This progress notwithstanding, some regions, particularly the Upper West, Upper East and Western Regions are lagging behind the set targets. This sets out the clear challenge of the GHS in finding useful interventions and solutions to this longstanding issue of doctors refusing to take up postings to those regions. There is currently increased intake and training of health workers into middle-cadres – community psychiatric nurses, midwives, medical assistants and laboratory technicians.

- **National Health Insurance Scheme**

  After the National Health Insurance Authority (NHIA) inspection of health facilities for accreditation during 2011 most of the facilities obtained a grade C, with only three per cent (3%) being awarded a grade A. This is an indication for an urgent need to support the majority of health facilities to improve their infrastructure, equipment and staffing in order to improve their ratings. It is important to note that the accreditation rating can be used as a proxy of the quality of care being offered in a particular facility.

  The GHS has continued to support work towards the Capitation Pilot Payment in the Ashanti Region. Some challenges that beset the commencement of the pilot are being addressed. GHS contributed to the review of the NHIA Act and the development of the Health Sector Strategy for extending NHIS coverage to the poor.

- **OPD Per Capita**

  Outpatient department visits (OPD) per capita recorded progressive increases from 2009 and 2010 to 2011. The annual target for 2011 was 1.0, and following the three-year trend, OPD per capita figures increased from 0.81 (2009) 0.98 (2010) to 1.07 (2011) an increase is being driven in large part by increased registration on the National Health Insurance Scheme (NHIS). This is evident in the increased proportion of insured clients reporting at the OPD - 44.2% (2009) 55.8% (2010) and 82.0% (2011). This increase in OPD per capita was also due to the ongoing nationwide expansion and improvement of healthcare and service infrastructure at various service delivery points. Thus, gradually closing the access gaps, both financial and geographical, which are the persisting challenges to healthcare in Ghana. Guidelines to improve the referral system, gatekeeper system and free-maternal care policy have been developed and are being disseminated within the Greater Accra Region.
Ho2: Improve Governance And Strengthen Efficency In Health Service Delivery, Including Medical Emergencies

Finance, Data Management and Performance Monitoring

- Finance

Finance indicators for resource tracking and utilization were developed in 2011. There was also an evaluation of the effectiveness of the revised monitoring checklist. Quarterly Regional Financial data validation and consolidation were carried out in all ten (10) regions. There were meetings with MOFEP to assign eight (8) banks to thirty-six (36) district/regional hospitals for on-site banking.

GHS is still working with MOH to create accountability through the introduction of the performance Contract.

- Information Technology to Improve Health Information Management and Service Delivery

With the priority to develop capacity within GHS for data collection, analysis and use, the planned migration of DHIMS to DHIMS2 was completed in 2011. Training on DHIMS 2 was completed in five (5) selected regions. Subsequently, discussions on immediate plans to host the DHIMS2 on a server were also concluded in 2011.

The smartphone system for data collection was introduced in the Kintampo South and Asougyaman districts, with two (2) training centres set-up at Sene for districts in the Northern Sector of Ghana; PPME/ CHIM will be responsible for training districts in the Southern Sector through GAVI HSS support. There are immediate next steps planned to introduce the smartphone system to all districts in the Upper East Region.

To enhance information sharing, weekly divisional meetings are gradually becoming institutionalized in the Service. There are ongoing discussions on how to establish the district league tables and rewards systems once the DHIMS 2 takes off nationwide next year.

- Ghana Health Service Council

GHS Council was inaugurated in September 2009, and is currently chaired by Professor J. O Commey. In 2011 the Council carried out some activities including investigations into payroll irregularities in four (4) regions. This exercise enabled the Service to retrieve large sums of unearned money. Some of the offending officers were dismissed, while legal proceedings were
taken against others in accordance with the GHS Code of Conduct and Disciplinary Procedures.

As part of efforts to enhance the corporate image of the Ghana Health Service, there were collaborations between the Service and Ecobank to develop a manual and a video on customer care, which would be used as staff training tools.

There were attempts during the year to reduce the backlog of delayed promotions at all levels in the Service as well as the appointment of various grades of staff to fill vacancies.

Some divisions of the Service - Public Health, Family Health, Finance, Institutional Care, Human Resource, Stores Supply and Drugs Management (SSDM) and the Policy Planning Monitoring and Evaluation (PPME) Divisions submitted briefs to the Council for review. Programmes including Guinea Worm Eradication (GWEP), National Malaria Control Programme (NMCP), National Tuberculosis Control Programme (NTB) and the National AIDS Control Programme (NACP), Traditional and Alternative Health Directorate of MOH also submitted briefs to the Council.

**Ho3: Improve Access To Quality Maternal, Neonatal, Child And Adolescent Health Services**

**Safe Motherhood and Child Health**

- Development, Review and Distribution of Reference Documents

The job-aids on Newborn Care for Health Workers were finalized and pretested in the three FOCUS regions (Greater Accra, Central and Western) and are ready for printing and countrywide dissemination.

As part of the Better Medicines for Children Project, the WHO Pocketbook on Care for sick Children in Hospital has been adapted for use in health facilities throughout Ghana. When finalized, it will serve as useful clinical guidelines for practitioners providing care for children on admission and at the outpatient department.

Information, education and communication (IE&C) materials for Family Planning have been reviewed and developed. In May 2011, the Adolescent Health Strategic Plan and Standards documents were disseminated and the guidelines on institutionalizing and integrating Adolescent Friendly Services were also developed.

Under the Nutrition and Malaria Control for Child Survival Project, the nutritional status of children in 21 districts is being monitored. Thirteen of these districts have so far been able to cover 50% of their target communities.

- Assessments and Dissemination of Findings and Results

The assessment of breastfeeding practices in hospitals continued in 2011 of which a total number of
121 health facilities have been assessed and 108 passed the assessment. The report on findings from the zinc study has been disseminated to health workers and partners.

GHS is spearheading a neonatal quality improvement programme in three hospitals in collaboration with the WHO and the Johns Hopkins University. Baseline assessments have been carried out in these hospitals and a training programme has subsequently been developed on neonatal resuscitation, neonatal sepsis and kangaroo mother care were developed. Concurrently, data on neonatal and infant morbidity and mortality is collected monthly in the three hospitals and from the communities through the Demographic Surveillance Surveys being conducted by the Dodowa, Navrongo and Kintampo Health Research Centres.

The MDGs Acceleration Framework (MAF) and Action Plan have been disseminated. An operational and resource mobilization plan has so far been developed for the MAF as part of engagements with the European Union for funding.

The Better Medicines for Children’s Programme has since been implemented. This was drawn from the need to strengthen the selection of medicines in the country and done in collaboration with local manufacturers to produce and use zinc for the treatment of childhood diarrhoea.

- **Campaigns**

  Mrs Naadu Mills, Ghana’s first Lady led the launch of the nationwide campaign for the Accelerated Reduction of Maternal Mortality in all ten (10) regions of Ghana. The objective of the campaign is to address the challenges preventing Ghana from achieving its MDG5. This campaign is part of advocacy to prioritize maternal mortality reduction in Regional Action Plans.

*Ho4: Intensify Prevention And Control Of Communicable And Non-Communicable Diseases And Promote Healthy Lifestyles*

**Disease Surveillance**

A joint MoH and WHO mission conducted an in-depth assessment of Ghana’s national surveillance and response system for all hazards and public health risks (including hazards at points of entry) on core capacities required for the implementation of International Health Regulation (IHR) 2005.

At the national level, the following institutions were involved: Environmental Protection Agency, Ministry of Health/ Ghana Health Service, Ghana Atomic Energy Commission, National Disaster Management Organization, Ministry of Food and Agriculture (Veterinary and Plant Quarantine Services), Food and Drugs Board, Ministry of Transport and Communication (Aviation) and Environmental Protection Agency.
A joint analysis of the assessment was carried out, based on the strengths, weaknesses, opportunities and threats observed. Additional feedback on problems and issues that health care personnel themselves identified regarding surveillance and response were solicited. Some of the main findings and recommendations were as follows:

- No specific IHR legislation, policy or strategy, hence the MOH and other partners should work assiduously to develop and use these documents.
- To establish and functionalize the IHR NFP in the country as this is very crucial to the successful implementation of IHR. The assessment showed limited coordination with other partners and agencies. Hence, there should be regular coordination meetings with all relevant partners.
- The assessment also showed that even though surveillance structures do exist in the country, these are mainly limited to infectious diseases. A similar finding was observed for Response structures exist which was also handicapped by inadequate human resource capacity.
- There was also the recommendation to make laboratory information available for evidence-based information and decision-making to ensure individual and collective health security. As such laboratory core capacity should focus on a reliable specimen collection and transport system with special attention to the interaction mechanism between the public health laboratory services and surveillance system. Laboratories need to be organized within a national public health laboratory network.

The national focal person (NFP) communicated with the WHO on three (3) events of potential Public Health Emergency of International Concern in year 2011: (1) the first documented Lassa fever cases, (2) the prolonged incidence of Cholera and (3) the surge in Yellow Fever cases. As part of the activities of the department, the NFP also communicated with the IHR NFP of Canada on contact tracing. As part of capacity building, an NFP participated in the 3rd IHR Implementation course held from September 2011 to February 2012 with funding from the German Society for International Cooperation.

**Other key activities:**

- Completion and submission of the Annual Progress of the Implementation Tool.
- Media monitoring to detect public health emergencies.
- Periodic visits to the Event Information Site by the NFP for information dissemination including outbreak of *E. Coli* in Europe to the regional public health teams.

**Surveillance and Control of Priority Diseases**

1. **Poliomyelitis/Polio Eradication Initiative**

   In order to strengthen the Polio Eradication Initiative (PEI), weekly updates on AFP surveillance were prepared for programme management and development partners. Feedback on both lab results
and performance indicators are also sent to Regions every fortnight. There were also a number of meetings including the National Polio Expert Committee meeting held in March, June and September to classify AFP cases of fourth quarter 2010 and first, second and third quarters 2011. The National Certification Committee (NCC) met in April, June and September to review Polio eradication activities and made recommendations. So far Regions have been supplied with AFP stool collection kit and monitoring and supervisory support visits were conducted to Volta, Central, Western, Eastern and Brong-Ahafo Regions. There have been two rounds of National Immunization Days (NIDs) conducted in March and May of 2011 where at least 5 million children under age five years received OPV doses in each round.

**ii. Meningitis**

Epidemic meningococcal disease (EMD) or meningococcal meningitis remains a major public health challenge in the "meningitis belt" which stretches from Senegal in the West to Ethiopia in the East of Africa. Although epidemics in the meningitis belt are traditionally associated with *Neisseria meningitidis* belonging to sero-group A, the occurrence of meningitis outbreak due to the sero-group W135 and X is also of great concern.

Some activities implemented during the year 2011 included; (1) The development, printing and dissemination of Standard Operating Procedures (SOPs); (2) There was orientation of Regional Deputy Directors, Public Health, Regional Disease Control and Surveillance Officers; (3) Technical support visits were carried out in the Northern, Upper East, Upper West and Brong-Ahafo Regions; (4) Technical support visits to some districts: Bongo (Upper East) and Jirapa, and Nadowli (Upper West); (5) There was also distribution and preposition of logistics to Regions. The good news, however, is that no district crossed the *Alert or Epidemic threshold* during the 2010/2011 meningitis season.

**iii. Cholera**

Ghana experienced cholera outbreaks in nine of the regions during the year. With the exception of Upper East region, all the other regions reported confirmed cases of cholera. The causative organism was *Vibrio cholera Ogawa*.

**iv. Pandemic Influenza H1N1**

Between January and December 2011, a total of 2,772 throat swap specimens from suspected cases were received from the Sentinel surveillance sites established in all regions of the country and analyzed at Noguchi Memorial Institute of Medical Research. A total of 130 were positive for Pandemic A (H1N1), given 32.7% of the total positive cases. In 2010, 89.2% of positive samples were confirmed Pandemic H1N1.
v. Yellow Fever
The period under review saw focal Yellow fever outbreaks in a number of districts. A cumulative total of 581 were reported. Out of these, 33 cases tested positive to YF IgM serological test at the National Public Health and Reference Laboratory (NPHRL). Out of these, 31 were confirmed positive at the WHO Regional Zonal Laboratory at the Institute Pasteur, Dakar, Senegal.

vi. Measles
- Total specimen taken and sent to NPHRL from 1,744 suspected cases
- All specimens sent to NPHRL investigated (100%)
- Out of the 1744 suspected cases, 120 (6.9%) were confirmed positive
- 164 (96.5%) districts out of the 170 reported at least one suspected measles case
- Each region reported at least one positive case
- Of the 1,624 measles negatives and equivocal tested for Rubella, 586 (36.1%) were confirmed positive for Rubella.

In 2010 the same period, 325 suspected cases were reported out of which 13 were confirmed positive for Measles. Ninety-seven out of the 170 districts (57%) reported at least one case during this period. Of the 312 measles negative tested for Rubella, 86 were confirmed positive for Rubella.

vii. Neonatal Tetanus
From January to December 2011, 5 cases of neonatal tetanus were reported in 3 districts. These 5 cases were all investigated and the requisite response actions taken. Out of the 5 cases 3 mothers had antenatal care, 3 of the mothers had only TT1 or TT2 and therefore not protected. Investigations revealed that all 5 mothers delivered at home, attended by traditional birth attendants (TBA) (3 trained and 2 untrained). Further, baby cord dressing was done using some items including cassava dough and Shea butter with salt. One mother used methylated spirit.

The Nanumba North and South districts were identified as the districts with the highest risk for NNT and therefore selected for the Pre/Elimination Assessment. The WHO and UNICEF Consultants led the survey where about 1,349 eligible live births and 34 neonatal deaths were detected. None of them was caused by tetanus. Ghana therefore satisfied the Neonatal Tetanus elimination criteria of having less than one Neonatal tetanus death per 1000 live births in every district of the country. Ghana is declared to have eliminated NNT.
viii. Acute Watery Diarrhoea in the over five years age groups (excluding Cholera)

During the year 2011, the total number of diarrhoea cases recorded among persons above five years was 125,074. Out of these, 1,832 cases suffered severe dehydration and 71 died (CFR=3.88%). The Ashanti Region recorded the highest incidence of acute watery diarrhoeal disease cases (1,010.4 per 100,000 population). Central Region recorded the second highest incidence (766.2 per 100,000 population). Both regions had comparatively higher indices to national average of 609.4 per 100,000 population.

ix. Bloody Diarrhoea

During the year under review a total of 24,242 cases with 22 deaths were reported (CFR-0.024%) giving an incidence rate of 94.49/100,000 population. The highest incidence of bloody diarrhoea was recorded in Upper East region 637.44/100,000 of the population, about seven times above the national average.

x. Human Rabies

There were sixteen cases of human rabies reported between January and December 2011 in 3 regions, namely, Upper East (10 cases), Upper West (5 cases) and Volta (1 case). All cases resulted in fatality.

xi. HIV/AIDS

A total of 16,549 HIV / AIDS cases was reported in 2011 across all 10 regions with 725 fatalities (CFR - 0.044%). The highest incidences were recorded in the Eastern (142.1/100,000 of the population) and Brong-Ahafo Regions (140.6 per 100,000 population), both figures, well above the national average of 64.5/100,000 population.

xii. Viral Hepatitis (Suspected)

Current data collection tools do not capture confirmed cases of Viral Hepatitis in the syndromic diagnosis of “Hepatitis.” During 2011, a total of 22,851 cases were diagnoses of which 100 resulted in fatalities (CFR- 0.44%) were reported from all the regions in Ghana. The Upper East Region had the highest incidence, 1059.4/100,000 population in comparison to the national average of 89.1/100,000 population. The other regions with incidence above the national average was: Brong-Ahafo- 212.9/100,000 population and Upper West - 123.5/100,000 population.
xiii. Typhoid Fever

The total number of Typhoid fever cases reported in Ghana for the year 2011 was 103,353 with 793 deaths (CFR=0.77%). Three regions recorded incidences higher than the national average of 402.9/100,000 population. These were the Upper East (905.0/100,000 population), Central (629.6/100,000 population) and Ashanti (686.2/100,000 population).

Disease Control

Expanded Programme on Immunization

Over the last decade, the landscape of public health in Ghana has changed considerably with the acceptance of immunization nationwide. The expanded programme on immunization (EPI) has improved the health of children and mothers by continuing to reduce the incidence of vaccine preventable diseases and associated disability and death.

The EPI forms an essential component of Primary Health Care and contributes to the country’s quest to achieve Millennium Development Goals (MDG) 4 and 5.

Major Activities

i. Routine Vaccination

Routine vaccination activities were carried out throughout all districts against nine vaccine preventable diseases: BCG, OPV, Penta, (DPT-HepB-Hi-b), Measles, and Yellow Fever.

ii. Polio Sub/National Immunization days (S/NID’s)

In 2011, the EPI organized four (4) Polio Immunization day campaigns; two (2) NIDs and one (1) sub-NID. The first round of NIDs took place from 24th – 26th March 2011 targeting 5,258,575 children between the ages of 0-59 months. The second round of NIDs was integrated into the 2011 Child Health Promotion Week commencing with the provision of routine child health services and free birth registration in health facilities from 9th – 11th March 2011. This was followed by a house-to-house administration of the polio vaccine to 0-59 month old babies, vitamin-A supplementation among 6-59 month old babies and de-worming activities targeted at preschoolers aged 2 -5 years old. Activities covered the 12th – 14th March 2011.

There was the third round of the Polio campaign in August 2011. This was a sub-national activity covering thirty-three (33) districts in the five (5) regions bordering Cote d’Ivoire and Burkina Faso. The rationale was part of the response to outbreaks of WPV in Côte d’Ivoire and in large part to maintain Ghana’s ‘polio free’ status by targeting 746,089 babies between 0 – 59 months with doses
of mOPV3. This exercise took place from 18th – 20th August 2011. The fourth round of the Polio campaign was held from 27th – 29th October and integrated with the vitamin A supplementation exercise: Oral Polio was administered to babies from birth – 59months, and whilst those aged 6mths – 59months received Vitamin A supplementation. With exception of the third round campaign conducted in August, all other campaigns were had independent Monitors from Kintampo Rural Health Training School to assess coverage and quality.

iii. MNT Pre-Validation and Validation Assessments

A second pre-validation assessment (first conducted in 2010) was carried in May 2011 to identify the districts at highest risk for MNT. Indicators used were: ANC and Penta 3 (data from coverage survey 2008), clean delivery (DHS 2008), SIA coverage, TT2+ coverage (EPI administrative data) and local knowledge of the districts.

iv. Elimination Assessment

The Nanumba North and South districts were identified as the districts with the highest risk for NNT and therefore selected for the pre/elimination Assessment. Consultants led the survey from the WHO consultant and UNICEF. About 1,349 eligible live births and 34 neonatal deaths were detected. None of them was caused by tetanus. Ghana therefore satisfied the Neonatal Tetanus elimination criteria of having less than one Neonatal tetanus death per 1000 live births in every district of the country. Ghana has been declared as haven eliminated NNT and is therefore not a public health problem in the country at the time of the survey.

v. Yellow Fever Preventive Sub-national Campaign

In November 2010, Ghana conducted a Yellow Fever risk assessment to identify districts at risk for yellow fever. The results of the assessment showed that fifty-four (54) districts in eight (8) regions were at risk for Yellow fever in the country. A Yellow Fever Preventive campaign was subsequently planned in these high-risk districts to be conducted in two (2) phases; a first phase scheduled for 2011 and a second for June/July 2012.

A total of forty (40) districts in the 8 regions conducted this yellow fever preventive campaign, which targeted all persons 10 years old and above excluding pregnant women. A total of 5,808,538 persons (67%) across the selected districts were targeted for the campaign. However, a total of 5,904,181 (101.65%) persons within the targeted age group were vaccinated. The Kintampo Rural Health Training School reported 73.5% coverage during this exercise.
vi. Reactive vaccination campaign

Three (3) districts conducted a reactive campaign in response to reported and confirmed cases of Yellow fever. Reactive campaigns were in Jirapa, Nadowli and Wa East districts of the Upper West Region targeting 93% of the population from one year olds and above excluding pregnant women. Coverage during this activity was 94.5% with an overall vaccine wastage rate of 2.4% during the two campaigns. Rigorous AEFI investigation, reporting and treatment were followed throughout the campaign with collaborative effort from Food and Drugs Board and WHO. A total of 397 adverse events following immunization (AEFI cases) were recorded through administrative reporting.

vii. EPI Surveillance Review

In February 2011, the Expanded Programme on Immunization (EPI) reviewed, finalized and printed a policy document on Immunizations in Ghana. This policy document covered issues concerning the new vaccines. There was also the Commemoration of African Vaccination Week and Press briefing for 2011 Child Health Promotion. This was the 1st African Vaccination week commemoration advocated by African Regional Office of WHO (AFRO). A press briefing was organized on 27th April at Kama Conference Hall with the purpose of intensifying awareness and advocacy to support immunization activities as well as to launch the 2011 Child Health Promotion week.

There was a final response to the GAVI conditionality on Rotavirus, 2nd dose measles and Pneumococcal vaccines application and a submission of a proposal for Meningitis A conjugate vaccine application. The WHO notified Ghana of her qualification to introduce the 2nd dose Measles (MSD) in 2009 following assessment of performance. A proposal to introduce the three vaccines was submitted and this received a conditional approval from GAVI. In May 2011, EPI team concluded its response to issues raised and to GAVI's conditionality on the Rotavirus, MSD and Pneumococcal vaccines’ application.

Another new application was for a Meningitis campaign in the three Northern regions. On September 17 2011, Ghana received approval for the introduction of all the three vaccines requested.

viii. Training and Orientation

Data Management training and orientation on the Reaching Every District (RED) Approach to improve immunization coverage was held in September at Kumasi for Regional EPI officers, Data Managers and Regional Deputy Directors of Public Health. These workshops were to help address gaps in data management and to improve immunization coverage at the operational levels.
National Malaria Control Programme (NACP)

Malaria is not only the burden of the health sector but it also permeates every aspect of our social as well as economic life. The National Malaria Control Programme (NMCP) seeks to reduce the malaria disease burden till it is no longer of public health significance. The overall goal is to reduce malaria specific morbidity and mortality by 75% by 2015. This is to be achieved through multi-interventional strategies such as: Prevention through Intermittent preventive treatment for pregnant women, use of insecticide treated nets (ITNs) and indoor residual spraying (IRS), Case management at both health facility and community levels.

In the year 2011 the NMCP heightened its efforts to ensure universal access to all interventions by increasing access to ACTs through AMFm, procurement and distribution of Rapid Diagnostic Test Kits, for testing of fever cases and distribution of LLINs door-to-door accompanied hang up campaign.

Programme Objectives in 2011

- To reduce malaria Case Fatality Rate in children under-five years from 1.9 in year 2010 to 1.8 in 2011 (Attained)
- 85% of pregnant women would be put on IPT2 (Not attained)
- 85% of target structures in the districts where IRS is implemented would be sprayed (Attained)

Key Activities

i. Improving Malaria Case Management in the country

To improve access to affordable and effective ACTs, the Affordable Medicine Facility for Malaria (AMFm) initiative was launched during the year. This intervention increased the availability of effective ACTs within the private sector and also reduced the cost of these medicines. The Pharmacy Council, with funding from Malaria Control Program, trained 3,481 licensed chemical sellers (LCS) and 507 medicine counter assistants (MCA) on malaria case management. Routine monitoring of public and private health facilities as well as pharmacies and licensed chemical shops were also vigorously embarked on. A mystery client survey was conducted across the country to assess knowledge, availability of medicines and compliance to protocols under the AMFm. As a step towards improving diagnosis, 7000 clinicians were given orientation on malaria diagnosis and the use of malaria RDTs.

IMad, a US PMI agency, undertook the OTSS programme visiting over 252 health facilities, to review malaria diagnosis, infrastructure and equipment, human resource and assess quality assurance. Findings showed most clinicians follow the national policy. Ninety-nine per cent (99%) out of 252 facilities visited, had functional/working microscopes and the recommended SOPs and Bench Aids. 93% of these facilities used RDTs correctly. The Table A5 summarizes key findings.
ii. Home Management of Malaria (HMM)

Home management of malaria seeks to ensure early recognition of malaria, recognition of dangers and appropriate care seeking. Thirty-eight districts in the Northern, Upper East and Upper West Regions had already started implementing HMM with support from UNICEF. In 2011 with Global Fund support, this was extended to Thirty-four more districts in Western, Greater Accra, Eastern, Volta and Ashanti regions. 1,736 CHO’s and 3,077 Community Drug Distributors were trained to manage appropriately, uncomplicated malaria cases. In addition, they were taught to recognize the signs and symptoms of severe malaria and refer patients promptly to appropriate health facilities. These trained CBAs have so far treated 3,526 children, who had malaria, correctly and promptly with ACTs.

To enhance their work, Bicycles, Raincoats, Wellington Boots, Torchlights, Batteries, Toolboxes with medicines, were distributed to them. The respective sub-district level health personnel supervise them and ensure re-stocking of their logistics, drugs and adherence to protocol. Funding for this strategy, is provided by UNICEF, PMI/USAID; Global Fund.

iii. Integrated Vector Control

Vector control is an essential component of malaria control programmes in Ghana. The Key interventions are Environmental Management, Adulticiding, Larviciding and Biological control of the vectors. The overall objective of deploying the multiple prevention method is to reduce man–vector contacts as much as possible and render the environment unsuitable for mosquito breeding through the Promotion and use of LLINs, Intermittent Preventive Treatment for pregnant women (IPTp), Targeted Larviciding and Indoor Residual Spraying (IRS). To keep the commitment of relevant sectors and improve partnership, the programme housed an oversight committee on vector control. The Malaria Vector Control Oversight Committee (MaVCOC) held three meetings during the year. Standard Operations Procedure (SOP) for IRS was finalized to provide technical advice on IRS. MaVCOC agreed to prepare SOPs for the other vector control interventions, which was on going at the close of the year. One major achievement in this area is the universal coverage of LLINs in 6 out of 10 regions in the country by the close of 2011. Larviciding was also carried out in some selected sites in Greater Accra, Ashanti and Brong-Ahafo Regions.

iv. Promoting the Use of Long-Lasting Insecticide Treated Bednets (LLINs)

Door-to-door distribution and hang-Up of LLINs or ITNs has its main objective of Improving Ownership and usage of LLINs. The use of ITNs continues to offer one of the most practical ways of protecting oneself from mosquito bites, thus preventing malaria transmission. The campaign ensured that, every 2 persons in every household were provided with one free net.

This was a collaborative effort and supported in cash or in kind by NMCP/GHS/MOH, Regional Health Directorates, Regional Coordinating Councils, Municipal/Metropolitan/ Districts
v. Malaria Prevention in Pregnancy Using *Sulphadoxine* - *Pyrimethamine* (SP)

Implementation of IPT continued across the country. However, there was shortage of SP as a result of failure of the first batch of SP to pass quality testing that was done by Food and Drugs Board. This resulted in the interruption of the intervention in some districts and health facilities in the country. Nevertheless, 545,032 (69.4%) pregnant women received IPT1 an increase of 2.3% over 2010. In addition, 418,684 (53.3%) received IPT2, whilst 283,682 (36.1%) received IPT3.

vi. Indoor Residual Spraying (IRS)

Indoor Residual Spraying (IRS) is the application of insecticide on the inner walls of dwelling places for both human and animals, where the malaria vector rests after taking blood meals. The Long lasting insecticide, which may be effective between 3 and 9 months on these surfaces, helps to reduce the lifespan of the vectors (anopheles mosquito) so that they do not live for long to transmit the malaria parasite. AngloGold and PMI/USAID are the main coordinators of IRS. 923,856 people in 9 districts were protected following the spraying of 352,985 rooms in 2011.

vii. Malaria Vaccine Trial

Malaria vaccine trial is being carried out at two sites: Agogo and Kintampo. It is in the third stage now. This is being coordinated by the Kintampo health Research Unit, KNUST, SMS and MVI and is being supported by WHO/GSK.

viii. World Malaria Day Commemoration

World Malaria Day Commemoration is a day of determination and optimism as the international community now has enough evidence that the fight against malaria can be won if partners collaborate efficiently on community, local, national, regional as well as international levels. It is a day of unified commemoration of the global effort to provide effective control of malaria around the world.
Activities Undertaken By NGOs in Malaria Control

Most NGOs work in deprived areas and communities. The NMCP therefore engaged these NGOs to implement some of the activities. They have, for the past years and in 2011, carried out activities such as training community based agents (CBAs) and traditional birth attendants (TBAs) on the importance of SP and ITNs. They also treat/retreat nets and follow-up pregnant women who are on Intermittent Preventive Treatment (IPT). Moreover, they train mothers/caretakers to recognize early signs and symptoms of malaria. Other activities carried out were Information Education and Communication (IE&C) on Intermittent Preventive Treatment (IPTp), Insecticide Treated Nets (ITNs), the New Antimalaria Drug Policy and Home Based Care. Thirty NGOs were funded by the NMCP/GFATM to undertake these activities. Staff of National Malaria Control Programme as well as the Ghana Coalition of NGOs in Malaria, monitor/supervise their activities.

Operational Research

As part of evidence based and focused researched strategy, a number of operational studies were conducted to determine whether the new initiatives are appropriate and yielding the desired results. In 2011 the programme undertook operation studies, some of which were on LLIN door-to-door distribution and Hang up campaign, RDTs and AMFm.

- AMFm Mystery Client/Exit Interview Survey

The monitoring took place in 522 facilities across the nation. The MCS provided in-depth information on malaria case management practices of private sector health care service providers (including pharmacies and LCS) through the application of typical clinical scenarios of malaria manifestation.

Summary of findings

- Malaria case management responses across facilities showed that, attendants were most likely to ask about the symptoms of the patient (98%) but less likely to refer patients for a lab test (43%). The majority of clients paid for their drugs with NHIS. All clients in LCSs paid with NHIS, while only 68.5% of clients in hospitals used NHIS. Clients in the Northern zone were most likely to use NHIS to purchase drugs (85.7%) and respondents in the Southern zone were the least likely (59.6%).

- The cost of medications was similar across facility types, with a slightly higher cost in pharmacies (GHC 1.77) than LCSs (GHC 1.73). Across localities, the cost was about the same, but slightly higher in urban centres (GHC 1.77) than peri-urban and rural areas (GHC 1.74 and GHC 1.70 respectively). A zonal comparison shows that the cost of medications is higher in the Southern zone (GHC 1.83) than the Northern zone (GHC 1.72) and the Middle zone (GHC 1.68).
Other ongoing studies in 2011

Other studies were nearing completion: Kintampo Rural Health Training School Director and Team conducted post-campaign evaluation on ITN ownership and use in the Eastern region.

The Hohoe Research Unit was commissioned to carry out a study to identify interventions for improving IPT uptake as well as Rapid Needs Assessment in ten (10) health facilities to ascertain quality of malaria case management.

Monitoring Malaria/Other Health Commodities Supply Chain

An Early Warning System piloted with the help of the US PMI /Focus Regions Health Project using mobile technology to track stock of some commodities at the health facilities has been carried out. The system alerts service providers and others on their stock levels of these items. The result of the survey shows improvement in the stock management of ACTS and other items.

MICS with Malaria Bio makers 2011

Ghana Statistical Service carried out the Multiple Indicator Cluster Survey, in collaboration with UNICEF, USAID and National Malaria Control Program. The results of key indicators in the MICS can be found in Appendix A18.

Neglected Tropical Diseases Control Programme (NTDs)

The Ghana National Neglected Tropical Diseases (NTD) Programme manages five (5) of the fifteen (15) diseases that have been designated as “neglected” by the World Health Organization (WHO). These are Lymphatic Filariasis (elephantiasis), Onchocerciasis (river blindness), Schistosomiasis, soil transmitted Helminths and Trachoma. The overall goal of the NTD programme is to prevent, control, eliminate or eradicate these NTDs by 2015. All five (5) diseases rely on preventive chemotherapy and use mass drug administration (MDA) as the main control strategy. The integrated NTD programme has completed 4 years of its implementation activities since its inception in 2006 and is in the 5th year of implementation. The NTD programme works closely with both the Buruli Ulcer and Yaws control programmes.

The NTD programme’s major agenda in 2011 was to maintain MDA across the country against Lymphatic Filariasis, Onchocerciasis, and soil transmitted helminths as well as scale up treatment for Schistosomiasis, while monitoring progress in achieving the overall goal for each disease. The NTD programmes specifically planned to:
i. Complete the Round 2 of the community-based MDA in 107 districts that started in December 2010

ii. Conduct 2 rounds of CDTI for all hyper and meso endemic communities in all 40 Onchocerciasis endemic districts and one round of CDTI in 33 additional Onchocerciasis endemic districts

iii. Conduct one integrated round of school-based MDA in 62 districts between May and June 2011 (this will include 30 districts which have still not had any treatment for Schistosomiasis)

iv. To hold 10 regional Post MDA review meetings after each round of MDA in December and July 2011.

v. Support LF surveillance activities in 2 communities per 10 districts where Trachoma transmission has been broken.

vi. Carry out night blood surveys in 15 endemic LF districts that have completed the minimum of 6 rounds of MDA

vii. Carry out Onchocerciasis entomological and epidemiological surveys in selected river basins countrywide

viii. Complete the NTD Master Plan and share with stakeholders

ix. Continue with advocacy activities outlined in Advocacy Strategy Plan

Some of the key priorities in 2011 were to enhance staff capacity for effective and efficient scale-up of mass drug administration for all 5 NTDs, and strengthen government ownership, advocacy and partnership. Also on the annual agenda was to improve planning, resource mobilization, and financial monitoring, and enhance NTD monitoring and evaluation including surveillance and operational research.

Some key implemented activities:

- Completed 2010 second round MDA in the first quarter of 2011
- Completed compilation of 2010 programme MDA reports
- Organized MDA review and planning meeting
- Developed Onchocerciasis surveillance work plan
- Organized First round MDA for Schistosomiasis, STH and Onchocerciasis
- Conducted night blood surveys for LF as part of implementation of the LF exit plan
- Conducted Entomological surveillance for Onchocerciasis
- Conducted Epidemiological surveillance for Onchocerciasis
- Developed USAID/FHI/360/CRS work plan
- Developed NTD M & E work plan
- Finalized NTD Master Plan
Outstanding activities:

- To organize 2\textsuperscript{nd} round MDA against Lymphatic Filariasis (LF) and Onchocerciasis
- To conduct Onchocerciasis entomological surveillance
- To conduct Onchocerciasis epidemiological surveillance
- To complete LF impact assessments

Lymphatic Filariasis

Major activities:

Exit Plan

As part of the Exit Plan implementation for Lymphatic Filariasis (LF) elimination, the NTD programme undertakes night blood surveys for microfilaraemia in endemic districts that have completed a minimum of 6 rounds of mass drug administration. So far there has been complete collections of night blood samples in 15 LF endemic districts as part of its monitoring activities. The slides have been processed and microscopy is underway.

Surveillance

i. Entomological surveys

In 2010 a total of 10 capture sites were monitored for entomological studies with technical and financial assistance from MDSC/APOC. Subsequently the country was demarcated into three zones (1) the initial OCP areas, (2) the southern extension and (3) the forest zones. The results from the DNA pool-screening analysis conducted in the MDSC indicated that infectivity rates at Ahamansu (Wawa basin), Ekumdipe (Daka basin) and Nakong (Sissili basin) exceeded the recommended threshold of 0.5/1,000 parous flies. It is significant to note that the Dakar and Sissili basins are in the original OCP areas.

In 2011 nine sites were selected with at least one site in every endemic region. Black flies were collected and transported to the MDSC in Ouagadougou for DNA analysis. There was also field dissection of flies at five sites.

ii. Epidemiological evaluations

Thirty (30) villages were sampled along the Ghana-Togo border (Wawa basin), Ghana-Cote d’Ivoire border (Black Volta), Ghana-Burkina Faso border (Sissili basin) as well as the Tano and Pra River basins for evaluations 2011. The Surveys are scheduled for completion in 2012. This evaluation is aimed at creating a better understanding of the cross border issues affecting countries
and would help to map up effective strategies for its resolution.

iii. Mass Drug Administration/Community-Directed Treatment with Ivermectin Only or Ivermectin and Albendazole

Two rounds of mass drug administration were planned. There was a first round of MDA targeting treatment of school-aged children for Schistosomiasis and soil transmitted helminthes infections using praziquantel and mebendazole and a first round of community-based treatment for Onchocerciasis. Then there was a second round of community-based treatment for Lymphatic Filariasis and a second round treatment for onchocerciasis using ivermectin and albendazole or ivermectin only.

Completed MDA reports in 2011 showed that Ivermectin and Albendazole treatment achieved total population coverage of 75.4% in all the 74 LF endemic districts. About 8,788,441 individuals were treated out of a total at-risk population of 9,963,010 during the second round 2010 MDAs for LF nationally.

iv. 1st round CDTI Activities

An at-risk population of about 2.3 million was targeted for treatment. Collation of treatment results is still ongoing alongside data validation to ensure the submission and availability of credible and reliable data at districts, regional and national levels. The available results show that some 1,559,996 people were treated among the total registered population of 2,033,231 with total population/therapeutic coverage of 76.7%.

The second round of MDAs planned to be undertaken between November and December 2011 has been re-scheduled for January 2012 due to planning challenges with the new USAID END-IN-AFRICA Project implementation.

v. Post-MDA Review and Onchocerciasis Surveillance Multi-year Planning Workshop

A three-day workshop to discuss and develop a multi-year plan for strengthening Onchocerciasis surveillance along major river basins in Ghana was organized from 1st-3rd March 2011. The workshop brought together all stakeholders including ex-OCP staff, representatives from Sightsavers, regional coordinators and entomologists as well as technicians from across the country. There was a review of the NTD programme’s 2010 performance and challenges with Onchocerciasis control relating to each of the river basins.

There is a plan to conduct Epidemiological Surveys in selected sentinel sites within problem areas
and also to conduct an evaluation once every three years. Random evaluations would be done in areas outside the sentinel sites once every five years per river basin to monitor prevalence. Following a region-by-region review of sentinel sites and availability of technical personnel, there was a suggestion that the strategic plan should focus on the gaps identified. To this effect a multi-year Onchocerciasis surveillance plan was developed to guide the implementation of surveillance activities and has been disseminated to all Regions.

vi. Schistosomiasis and Soil-Transmitted Helminthiasis Control Activities

As part of control activities for Schistosomiasis and Soil-Transmitted Helminths (SSTH) praziquantel and mebendazole were administered to school-aged children. Communities that recorded a predictive prevalence of more than 50% were also targeted for treatment. About sixty-five (65) districts were selected from the ten regions of Ghana for the school-based control of SSTH. The estimated number of school-aged children at-risk was 3,012,070. These children were identified to receive praziquantel and mebendazole treatment. The selection was based on the WHO strategy for Schistosomiasis morbidity control and the selection of districts for de-worming was based on empirical data available through baseline, mapping and validation surveys.

The Volta River Authority (VRA) entered into a new partnership with the NTD programme this year to provide support for treatment in endemic districts and communities within the catchment of Volta River Basin. The proposed districts and communities are located in the Northern, Brong-Ahafo, Ashanti, Eastern and Volta regions.

Major activities:

Praziquantel and Albendazole Distribution

Distribution of praziquantel and mebendazole achieved a national coverage of 88.9%, with 1,355,189 school-aged children out of a total registered school-aged population of 1,688,198, children receiving treatment. There was also community treatment for Schistosomiasis with praziquantel for communities located in districts with a predictive Schistosomiasis prevalence of more than 50%. The selected communities were those that were located close to water bodies where the risk factors for Schistosomiasis transmission were high.

Reports received indicate an estimated coverage of 52.8%, representing 162,774 individuals from 572 communities out of a total registered population of 308,126 that have been treated. These figures exclude figures from the Kwahu North district in the Eastern region, which had not submitted its community treatment reports. Thus, so far a total of 1,517,963 individuals including school-aged population and whole communities have received praziquantel treatment for Schistosomiasis.
Guinea Worm Eradication Programme (GWEP)

2011 was the first year of guinea worm eradication precertification activities in Ghana. The Global strategy for eradicating guinea worm disease involves two phases; the intervention phase and the precertification phase. The intervention phase refers to the period when interventions are applied with the aim of interrupting an existing transmission.

The intervention phase is followed by the precertification phase, which refers to, at least, three years of intensive surveillance and awareness creation to ascertain the validity of the interruption and also prepare the country for certification.

Ghana recorded her last guinea worm case on the 11th of May 2010 and, therefore, begun her first precertification year in January 2011. This transition informed GWEP objectives for the year, which included; nationwide awareness creation on the cash reward, timely and complete investigation and reporting of all rumours, and complete monthly reporting on guinea worm from all reporting sites in the country.

i. Surveillance

To strengthen community-based reporting, GWEP produced twenty-four thousand (24,000) CBS books for distribution to CBS volunteers. There was active surveillance in the remaining four endemic villages through monthly mass case searches and weekly visits (daily during the transmission season) to households by CBS volunteers. Non-endemic and recently guinea worm-free districts also searched for cases during NIDs and other mass campaigns periods.

As part of the effort to enhance reporting of rumours, (2) hotlines were advertised nationally to enable people to report promptly any suspected cases or rumours of guinea worm should they find any. Over 1,200 calls were received in the course of the year. Two hundred and forty seven (247) rumours were investigated during the year. Two hundred and thirty-two (232) representing 94% of the total were investigated within 24 hours.

ii. Monitoring and Supervision

Monitoring and supervision were stepped up at all levels; district, region and national. National Officers visited each region at least once in the year under review. The National Certification Committee made monitoring visits to the Ashanti and Brong-Ahafo regions during the year. AWHO technical Team paid a support visit to the programme from July 17 – 29th, 2011.
iii. Social Mobilization, Health Education and Marketing

The National Communication Plan/Framework was completed and launched in January 2011. The key messages were produced in four main languages and distributed to the regions for broadcasting. A Communication Sub-Committee was inaugurated in January 2011. This committee was tasked to monitor the implementation of the communication strategy. Regional teams were briefed and funded to implement the strategy. So far Regions have achieved various levels of implementation.

iv. Filter Distribution

In first half of 2011, volunteers made regular monitoring visits and replaced worn out filters in the four remaining endemic villages and other at-risk villages. All endemic villages had 100% cloth filter coverage. A total of 20,000 cloth filters were distributed during the first half of the year. No filters were distributed during the second half of the year since no threats existed to necessitate that.

v. Vector Control

There was treatment of all eligible water sources during the first half of the year in all four endemic villages. This regular water source treatment exercise was guided by a forecast list. There were, however, no treatments done during the second half of the year, as no threats existed to necessitate that.

vi. Capacity Building

There was training on the GWEP communication strategy for Health Promotion and Disease Control Officers in all the ten regions were trained in January 2011. Regional Surveillance Officers and Regional Disease Control Officers in all ten regions were also trained to use the GWEP reporting tools. This took place in February 2011.

vii. External Evaluation

MOH in collaboration with other partners in health organized an independent external evaluation of the GWEP from 3-16th November 2011. The evaluation team visited all 10 regions, a total of 37 districts and 127 communities. Interviews were conducted in 1,153 communities. There were six teams with each team comprising one independent external evaluator, one independent internal external evaluator and at least one National/Regional support staff member. The external evaluation did not find any evidence of indigenous transmission.

Among others the team found that the knowledge about guinea worm disease was low in freed
areas; and awareness of reward scheme was low among health workers and the general population. They also concluded that even though they did not find any evidence of ongoing transmission, the surveillance system (including documentation) was not satisfactory enough to enable them conclude with certainty that transmission has been broken. The team made several recommendations for improving surveillance, communication and awareness creation rumour reporting and prompt investigation.

National Tuberculosis Control Programme (NTP)

i. Accelerated TB case finding interventions in Accra Metropolis

The NTP continued its implementation of the accelerated TB case intervention in collaboration with the WHO under the CIDA initiative. The intervention aims to improve TB case detection particularly in the Accra Metropolis. A total of ten (10) health facilities; (5 Polyclinics and 5 hospitals) are involved in active TB case finding at the OPD through patient screening.

Contacts of index TB cases are also being screened as part of the contact tracing investigation intervention. The DOTS corner nurses conduct follow-up home visits to index cases identified and also screen their contacts. Data on this activity is captured in the contact investigation register.

There is ongoing Systematic TB screening among high-risk groups such as PLHIV and Diabetics. The patients that come to this special clinic are screened systematically for TB and records of this activity are captured in the suspect register and submitted monthly.

ii. Collaboration with Veterinary Services

Apart from the implementation of these key initiatives to improve TB case findings, the Programme also supported the Veterinary Services Directorate of the Ministry of Food and Agriculture in a screening programme to identify TB in carcasses in the various Slaughter Houses in Accra. This initiative was necessitated by the fact that the number of cases of Tuberculosis in cattle (Bovine TB) increased from 88 in 2009 to 106 cases in 2010. These cases were found among the 134 slaughterhouses in the ten (10) regions of the country. This activity was organized in the 3 zones of the country.

Training sessions were organized for meat inspectors in the 3 northern regions in Tamale. Participants were Meat Inspectors of the Veterinary Services Directorate, Environmental Health Division of the Ministry of Local Government and Rural Development of the Ashanti and Brong-Ahafo Regions.
iii. Improved data recording and reporting with data validation

With the support of TBCARE I project, the process of data validation towards improved recording and reporting was initiated in Eastern Region. This activity has improved data quality since inconsistencies in data capture were identified and addressed. Lessons learnt from this initiative will be extended to the rest of the regions and districts across the country.

iv. Programmatic Management of Drug Resistant TB (PMDT)

The NTP was supported by Partners in Health, Lesotho to begin managing multi-drug resistant TB patients in Ghana as part of a pilot programme. As at the end of the year, 4 patients had been started on treatment. The country received a mission from the Green light Committee as part of preparatory activities towards commencing Programmatic Management of Drug Resistant TB (PMDT).

As part of preparations by the NTP to commence the PMDT programme, a training tour was organized for a team of 10 health personnel in by Partners in Health Maseru, Lesotho in October 2011 with support from WHO. The capacity of the team was built and experience gained from the PMDT Programme being run by Partners in Health, Lesotho. A mission from the Green Light Committee and the Supra national Reference Laboratory in Borstel primarily to look at the Country’s preparation and readiness to commence the Programmatic Management of Drug Resistant TB.

v. National TB Prevalence Survey

A number of activities were initiated in the year as part of the preparatory activities for the National Prevalence survey including meetings of the Steering Committee.

A study tour was organized for the core team (Survey coordinator, radiologist, biomedical scientist, data analyst and a statistician) of the Prevalence Survey in Ethiopia. This is to gain experience and knowledge in the survey, which was being conducted in Ethiopia. A training course was organized by WHO in Cambodia primarily for survey coordinators with focus on field operations. A team represented Ghana and participated in this training.

The NTP also took delivery of a 20ft containerized digital x-ray equipment to be used for the survey. Training sessions were organized for engineers from the Ghana Health Service, radiologists and radiographers on the use of the equipment. Data collection tools were developed and the initial review of the tools done.
vi. Close out Global Fund TB R5 grant

The National TB Control programme has received two financing grants Round 1 and Round 5 of Global fund financing mechanism. The Global Fund Round 5 grant as a financing mechanism for TB health sector strategic plan ended in April 2011, after a month extension and has since been closed. The programme achieved ‘A’ rating over the grant period.

The grant significantly strengthened the Tuberculosis Control in Ghana. Critical masses of health personnel encompassing all categories, from teaching hospitals to district hospitals, capacities to care and support TB patients were developed. High staff turnover was however a challenge to the implementation of programme interventions.

Health products and equipment, infrastructure and other equipment’s such as diagnostic equipment, vehicles, motorcycles and bicycles, refurbishing of facilities were key components of the interventions that also strengthened the health system.

National AIDS Control Programme (NACP)

i. HIV Testing and Counseling Services (HTC)

At the end of the year, one million, one hundred and fifty-one thousand and thirty-four (1,151,034) people received HTC services. These are people who completed HIV testing and received post-test counseling, thus getting to know their HIV sero-status. They were made up of two hundred and twenty-one thousand, two hundred and two males (221,202) and nine hundred and twenty-nine thousand eight hundred and thirty-two females (929,832).

Out of the number that tested to know their HIV status in the period under review, a total of fifty-six thousand, eight hundred and ninety-one (56,891) were HIV positive, indicating a period prevalence of 4.9%.

ii. PMTCT Services

In the period under review, six hundred and twenty-seven thousand, one hundred and eighty (627,180) pregnant women tested to know their sero-status. Of the number that tested, fifteen thousand, seven hundred and sixty-three (15,763) were HIV Positive, which is about 2.5% of those who tested within the reporting period. Eight thousand and fifty-seven (8,057) HIV positive pregnant women who were due to receive ARVs were given to prevent mother to child transmission of HIV.
iii. Clients on Antiretroviral Therapy

During the year under review, a total of Fourteen Thousand Three Hundred and Eighty-Three (14,383) people made up of 3,953 male and 10,430 female were put on ART.

Cumulatively, a total of sixty-five thousand Three Hundred and Forty-two PLHIVs have been put on treatment.

iv. Procurement of logistics for Principal Recipients

The country won Round Eight of the Global Fund’s call for HIV proposal. As part of its implementation, four Principal Recipients namely, MOH/GHS/NACP, ADRA, GAC and PPAG were awarded the grant to undertake HIV and AIDS activities geared towards reducing and reversing the HIV trends in the country.

MOH/GHS/NACP, being the longest implementer of Global Fund grants in the country, was entreated to undertake bulk procurement of logistics for the other principal recipients of the Grant. In line with this, the under-listed items were procured for their benefit in the course of the period under review.

a) Condoms

Fifty million pieces of male condoms were procured in the period under review.

b) HIV Test Kits and Accessories

During the period, the Programme took delivery of 1,942,800 Tests of First Response HIV I/II rapid test kits, 509,400 First Response rapid Syphilis Kits, and 60,000 tests of OraQuick to enhance HIV testing and counseling.

c) Adults Registration Booklets

The Programme took delivery of 50,000 copies of the adult registration booklets to enhance data collection and research.

v. Refurbishments of Service Delivery Areas

The Programme continued with the creation of conductive environment for the effective and confidential interaction between clients and service providers. In this vein, the Programme released funds to the under-listed institutions to refurbish their service delivery areas. In all forty (40) HIV service delivery areas are expected to be refurbished.
vi. Capacity Building for Health Care Workers

In response to the country updating its treatment guidelines for the management of PLHIV, series of refresher trainings were conducted for health care workers involved in the Prevention of Mother-To-Child Transmission and Antiretroviral Therapy.

In all a total of fourteen (14) training sessions took place and the capacity of four hundred and five (405) health professionals from one hundred and twenty (120) health institutions were built.

vii. CDC Collaboration

The Ghana Health Service in collaboration with the Centers for Disease Control and Prevention (CDC) of the United States of America are strengthening the Laboratory Systems, Strategic Information and Blood Safety services in Ghana. As part of the collaboration, four Toyota Hilux Pick Ups and a Mini Van were procured in the course of the year under review to help in mobilizing more voluntary blood donors and support monitoring activities. As an addition to the collaboration, a total of forty (40) health professionals have been trained on sample collection from eight (8) sentinel sites within six (6) regions to enhance HIV incidence studies that have been ongoing in the country.

To assist in effective implementation of this collaboration, a technical working group made up of twenty-five professionals has been formed to guide the process. A significant number of health professionals were trained to provide efficient and effective services to clients as well as creating conducive environment for service delivery. These activities will definitely enhance coverage of persons in need of HIV services and assist in the country’s resolve to reversing the rising trend of HIV.

Yaws Prevention And Control

Two regions (Volta and Ashanti) were trained on the yaws elimination package. The trainees comprised of one yaws focal person from each sub district and all district disease control officers/district yaws focal persons. The training was funded by GOG. Though benzathine penicillin was available, sufficient quantities could not be released to regions because of shortage of needed accompanying logistics especially syringes and needles. These have however arrived now in January 2012 and will facilitate treatment activities this year. In addition to education by health workers on the field TV Africa also supported with yaws awareness creation documentary on the television.

Monitoring visits were carried out in Ashanti, Northern, Upper East, Upper West, Brong Ahafo and Volta regions by the program in collaboration with the National TB Control Program. Random surveys of some communities were done to verify the Ashanti Region baseline carried out late last
year. An oral Azithromycin trial on yaws was started and is ongoing in collaboration with Ga West Municipal Health Directorate, School of Public Health, KNUST School of Biological Science Microbiology Department and WHO. The research also collaborates with another study centre in Papua New Guinea whose results have already been published in the Lancet showing oral Azithromycin to be non-inferior to benzathine penicillin in the treatment of yaws.

**Findings and returns**

The three key indicators to monitor yaws elimination were only partially met with more room for improvement. Contact tracing and treatment still lags behind case finding in all regions though some are progressing in the right direction. The target of 10 contacts to one case was not achieved. Logistic use is not optimum (currently at ratio of 2) in all regions and shortages of syringes/needles, water for injection and reporting forms were observed in some regions. Yaws is looked for mainly by Disease Control Officers and to a lesser extent by Community Health Nurses and mainly in basic schools. Eastern, Ashanti and Volta regions are doing best in this area due to the training.

The revised data forms are fully in use in three regions. Some regions use a mixture of old and new and others still use mainly the old forms despite the core RHMT members in all but Greater Accra and Upper West Regions having been adequately trained on the yaws elimination package. During the year, 16 new cases of suspected leprosy and 52 new cases of suspected Buruli ulcer were detected during integrated case search activities in Ashanti, Brong-Ahafo and Western Regions and referred to the program managers as part of integrated case search activities.

**Leprosy Control**

WHO target for elimination is less than 1/10,000. The number of registered cases as at 31-12-2011 was 568; prevalence rate 0.24/10,000. Even though overall target has been achieved, a prevalence rate 0.24/10,000 against 1/10,000, the Upper West Region did not achieve this target at the close 2011. A total of 794 new cases were detected nationwide. This gives a case detection rate of (CDR) 3.3/100,000. This is a useful indicator for estimating Leprosy transmission in an area.

**Children**

A high child proportion among new cases is a sign of active and recent transmission. There were 28 children among the new cases, representing 3.5% of the new cases.
Trachoma Control

i. TT cases search

There was active case search for TT in the Wa East and Nadowli Districts of the Upper West Region and in the West Mamprussi, Tamale Metro, Yendi, Bole and Sawla/Tuna/Kalba Districts of the Northern Region. Surgeries were performed as well as education on facial cleanliness and environmental improvement.

ii. Surveillance

A National Surveillance Plan was adopted in June 2011 and surveillance activities started, with support from partners. Activities included:

- Dissemination of Trachoma Surveillance Document in the Northern and Upper West Regions
- Training of 28 Ophthalmic Nurses in the two regions
- Training of 174 health workers (6 from each of the 29 Districts) in the two regions in identification of TT cases and suspected active cases to support the ophthalmic nurses in the surveillance activities
- Active case search for TF (1 – 9 years) and TT (15 years and above) in 58 randomly selected communities in the two regions (2 communities per district in the 29 Districts) as a pilot to test our surveillance protocols

A total of 58 communities (2 in each district in the Upper West and Northern Regions) were randomly selected for implementation of the pilot phase of the Ghana surveillance plan. One hundred and eleven (111) children were screened in the second line communities in Upper West. No TF was found in the communities. 576 children were screened in the second line communities in Northern Region. 8 TF cases were found and treated. Four hundred and twelve (412) people were treated with Zithromax and tetracycline in Moyiri whilst 623 were treated in Mempeasem.

Almost 99% of communities visited in the two regions had access to potable water. It was however observed that some of the water points were far from the communities. Apart from communities in the urban areas, less than 10% of communities in the rural areas had access to toilet facilities. The surveillance team educated community members on the importance of facial cleanliness and environmental improvement in the control of trachoma.

Seventy (70) suspected TT cases were found in the Northern Region during the pilot surveillance exercise. A team of two ophthalmic nurses was tasked to confirm and operate on the 70 cases. Out of the expected 70 cases, 40 were operated on. Seven (7) people refused surgery whilst three (3) had epilation. Twenty (20) of the cases were actually not TT.
National Buruli Ulcer Control Programme

i. Standardized Case Management with antibiotics:
With the support from the local collaborators case management activities were carried out in all the major treatment centres.

ii. Laboratory confirmation of cases
The total number cases confirmed with support from Noguchi and KCCR and KATH covered 700, representing 68 % of cases found for the year.

iii. Information Communication Technology
- Current surveillance forms continue to motivate regions to submit reports electronically and via the Internet. This is an improvement over the traditional one in use.
- Districts are encouraged to use software data capturing tools in responding to data submission.

iv. Capacity Development
- Training programmes were conducted for a number of community-based agents (CBSVs, school teachers, herbalists and chemical sellers) on suspecting and reporting buruli ulcer in Ga-South, Asunafo-South
- Health workers were trained on diagnosis, use of combination therapy, specimen collection and transportation, wound care; surgery and prevention of disability were also carried out at Goaso and Asunafo-South.
- Prevention of Disability [POD] as a service to alleviate the disability associated with the disease was taken up strongly.

v. Infrastructure development
Supplies of surgical and physiotherapy equipment were made and the beneficiary facilities were – Amasaman hospital and Obom Health centre, by courtesy of the World Vision International, Stop Buruli project, Health Foundation, Ghana.
vi. **Drug supply support**
Logistical support in terms of wound dressing materials, antibiotics were provided regularly to the treatment centres in the regions and districts, however the supplied quantities were not sufficient to meet the demand in the centres.

The National Buruli Ulcer Programme did not receive any medicines to support treatment centres in 2011. The programme had to rely on other country programme support for the medicine. We took delivery from Benin and Togo.

vii. **Operational Research**
- Antibiotics - International research in the use of all oral antibiotics in the treatment of Buruli ulcer, early lesion is yet to commence. Preparation far advanced for takeoff.
- Enhancing wound healing with the use of a specialized dressing materials Drawtex

viii. **Monitoring, Supervision and Technical Support**
- Programmatic technical support to endemic districts [Amansie West, Amansie Central, Amansie East, Asunafo South, and Ahafo Ano North. Ga West and Akwapem South]
- Integrated monitoring, supervision and technical support through disease control and prevention department framework.

ix. **Integration with other Disease Control Programmes**
Collaboration among the Yaws, Buruli Ulcer Guinea Worm and other NTDs programmes is encouraging and showing results. This includes combined work in skin diagnosis of lesions during community screening. The National Buruli Ulcer programme also collaborated with the National Malaria Control programme in Volta region in case detection during the hang-up campaign, use of insecticide-treated bed nets. There is ongoing advocacy for visibility of Buruli ulcer in the context of neglected tropical diseases.

x. **Collaborations**
The following are the key collaborators of the programme:
- MAP International: Advisory meeting on Buruli ulcer control Programme
- HFG: Early case detection, strengthening of treatment centres
- STOP BURULI PROJECT: Case Laboratory diagnosis, health education and supporting patient to care.
xi. Surgical Outreach Services

The national programme continued to collaborate with other local NGO to support the surgical outreach services to Ga West. Other districts also carried out some activities; Asunafo South and North

xii. Public Education

- Media Health education on Buruli ulcer – Television, radio talk show and interviews
- An evening with corporate organization in Accra and Tema

Non-Communicable Disease Control Programme

i. Management-Related Programme Issues

Draft Strategic Plans and Policies

These have been developed with support from the West African Health Organization (WAHO). The specific documents include:

- Draft NCD National Policy
- Draft NCD Strategic Plan
- Sickle Cell Strategic Plan (finalized)
- Cancer Strategic Plan (finalized)

ii. Monitoring Visits to Regions

NCDCP undertook monitoring visits to the Greater Accra Region (GAR) in March, the Western Region (WR) in June and the Volta region (VR) in August 2011.

Observations

The NCDCP made the following observations during the visits:

- Low priority to NCDs in WR and GAR
  ✓ Neither region had a Focal Person responsible for the leading the planning, monitoring and coordination of NCD-related activities.
  ✓ Neither region had a plan which clearly articulated priority NCD activities to be implemented
  ✓ Neither region had recently organized specific training on NCDs
  ✓ Lack of funding was a major issue hindering the attention to NDC control. Although some activities such as health education on radio were mentioned, funding limited its frequency and scope.
Data Management

The three regions identified serious data management issues.

Clinical care

Both the Ridge Hospital and the Effia-Nkwanta Regional Hospital (ENRH) operated weekly diabetes and hypertension clinics.

A medical officer and a physician specialist manage the diabetes clinic at the Ridge Hospital. The clinic attends to about 60 patients a day. The clinic has introduced a booking system to reduce the number of patients seen at any time. Patients are treated on individual basis, mostly with medication. Compliance to lifestyle is difficult for the patients. The doctor could be called out from the diabetes clinic to attend to medical emergencies at the OPD anytime.

Counseling services on specific diseases and on healthy lifestyles were lacking or weak in clinical care due to weak capacity. Both hospitals lacked some critical personnel such as trained nurses, nurse educators and counselors. There was a shortage of physicians/medical officers in Ridge Hospital, no dietician in WR and absence of a multidisciplinary team for managing diabetes. The floor space was very small at the Ridge Hospital.

Patient’s height was measured against graduations marked on the wall. In both hospitals, there was no system for periodically calibrating measuring instruments such as weighing scales and BP monitors.

Cervical Cancer screening at Ridge Hospital

Ridge Hospital also provides screening services for cervical cancer with visual inspection after acetic acid application (VIA) and Pap smear. The clinic has a protocol for screening. VIA is performed on women from 25 to 45 years while Pap smear is done for women 21 years and above. If the VIA is performed and it is not convincing, Pap Smears is done after three days to confirm it. Apart from the clinic work, the Cervicare nurses provide health education in churches and work places on cervical cancer. Sometimes, they are invited by the media to their stations for health education to the general public.

In the past two years, the Clinic has also been providing HPV vaccinations (Cervarix) at a cost of GHC85.00 per dose. However, contrary to standard practice, this vaccine is given to adults who are VIA negative instead of to girls aged 9-13 years. Given the low sensitivity of VIA, a negative test does not necessarily mean the woman being screened has not been exposed to HPV.

Best Practices

Because of the small floor space, the Diabetes Clinic at Ridge Hospital introduced a booking system to reduce the number of patients they see at a time. Patients are treated on individual basis mostly on medication.
Owing to the lack of funds for public education on kidney disease as part of the World Kidney Day celebrations in March 2011, the Diabetes Clinic Physicians of ENRH proposed a barter system where they screened 160 personnel of 10 media houses aged 18 – 60 years in Sekondi-Takoradi in exchange for free air time.

The Physician in charge of the Diabetes Clinic at ENRH (Dr Ama Barnes) is designing an audit form for diabetes patients. She was advised to link up with KATH or KBTH where such forms are available for harmonization.

The Department of Medicine at ENRH screened about 80% of all the hospital staff during the year.

The Ho Municipal Health Directorate has some NCD morbidity and mortality indicators pasted on their notice board.

Following the successful consultation meetings of Ministers of Health in the various WHO regions, the first global ministerial conference on healthy lifestyles and NCD control was held in Moscow 28-29 April 2011.

The conference had three main goals:

- To highlight the magnitude and socio-economic impact of NCDs;
- To review international experience on NCD prevention and control; and
- To provide evidence on the pressing need to strengthen global and national initiatives to prevent NCDs as part of national health plans and sustainable development frameworks.

The conference produced a Moscow Declaration that looked ahead to the UN High level meeting on NCDs. The Declaration urged a multisectoral approach to prevention and treatment of these illnesses, including promotion of healthy lifestyles and stronger public policies to help individuals, families and communities make healthy choices.

A High-level Meeting of the General Assembly was held by the UN from 19 to 20 September 2011, to address the prevention and control of NCDs worldwide, with a particular focus on developmental and other challenges and social and economic impacts, particularly for developing countries. Ghana’s delegation to the UN included the Hon. Minister of Health, the Acting Director-General, and the Director Public Health Division of GHS.

From plenary and roundtable discussions, Hon. Minister of Health, Joseph Yieleh Chireh made the following commitments:

- National NCD policy
- Public health bill with tobacco control
- National strategy for cancer control
- National sickle-cell strategic plan
- Regenerative health and nutrition strategic plan

iii. Awareness creation

There were several events during the year to highlight NCDs:
Celebration of international days

Celebrated international events:
- Africa Healthy Lifestyles Day
- World Cancer Day
- World No Tobacco Day
- World Heart Day
- World Kidney Day
- World Diabetes Day

iv. Development of educational materials

The following were developed and disseminated:
- IEC materials
- Desktop calendar NCDs
- Distributed breast cancer and cervical cancer (UICC)
- Finalized healthy lifestyles poster (UICC)
- Draft childhood cancers poster

Sickle Cell Disease (SCD)

Screening of Newborn Babies

The programme for scaling up the newborn screening for sickle cell disease (NSSCD) was prepared during the year led by the Sickle Cell Foundation of Ghana (SCFG). In preparation for the scale up, a total of nearly 600 health workers were trained in all ten regions of the country. The scale-up proposes that screening of newborns for SCD will start concurrently in all the regional capitals and proceed from there to the districts. Regional Directors of Health Services are expected to identify which district hospitals could run sickle cell clinics within the regions.

A total of 19 facilities conducted screening during the year 2011. An average number of 524 dried blood samples were sent to Noguchi weekly by Expedited Mail Services.

Cancers

Early detection and screening for the major cancers namely breast cancer and cervical cancer are conducted in the teaching hospitals and some regional hospitals. At both Korle-Bu Teaching Hospital and Komfo-Anokye Teaching Hospitals, they have a breast clinic, where eligible women walk in and have their breast examined.
Occupational and Environmental Health

i. Occupational Health and Safety (OHS)

The OHS policy guidelines for the health sector was printed and formally launched by Minster of health in August 2011 and the new ILO list of OHS indicators have also been sent to CHIM to facilitate the design of the DHIMS data entry interface. The OHS monitoring checklists and indicators have also been developed and sent to PPME to be introduced into the 2012 annual performance review guidelines for Regions and Districts.

Monitoring teams made visits to all Regional Health Directorates and Regional Hospitals in the last quarter of 2011. A monitoring report has since been prepared and disseminated. (Appendix A). The International scientific conference on OHS in Small and Medium Enterprises (SMEs) was successfully organized in August 2011 and attended by 105 participants from 18 countries. Two forums were held in July and August 2011, respectively to identify and sensitize stakeholders on the “Healthy Workplace Programme”. There is a plan to conduct individual company assessments and funding is currently being sourced to facilitate this. So far about 8 companies have expressed a willingness to participate in the programme.

Technical staff of the Occupational and Environmental Health Unit was able to participate in the 2011 Continuing Professional Development (CPD) programmes:

- ICOH Scientific Conference-Accra
- Healthy Workplace Sensitization Workshop-Accra

ii. Environmental Health

One monitoring visit and on-the-job supervision was conducted in each of the pilot Health Care Waste Management (HCWM) facilities in Central R in September 2011. The HCWM training was also conducted in Sogakope and KBTH as scheduled and training reports have since been produced.

As the Unit prepares to conduct the Health Impact Assessment (HIA), ENI Ghana and Tullow Oil Ghana have given commitment to be part sponsors of the HIA Assessment for the Oil and Gas sector.

- Climate Change-Health project:
  - Three Climate change in health project management committee meetings were held in the course of the year.
  - An office at OEHU has been renovated to serve as Project office.
  - A Project manager and project assistant have been appointed.
  - The Project inception meeting was held at Akosombo in the last quarter of 2011.
Technical staff of the unit was able to participate in the following CPD programmes in Environmental Health:

- Health and Environment-GMA
- HCWM Sensitization Workshops-Sogakope/KBTH
- HCWM conference-Cote d’Ivoire
- 5th session of African Union Ministers in Health (Theme: Climate change as one-Namibia
- Climate change confab-Namibia
- Intox-Data management system-U.K.
- AFENET-Tanzania

- Attended (3) ENRAC meetings
- The HESA sub-committee of ENRAC has been constituted but Joint plans of action for Health and Environment are yet to be developed.

iii. Poison Control

The Poison information service provided answers to 64 enquiries on poisoning with 60 related to patient management. A Toll-Free Number (0-800-100-46) and call-forwarding service were installed at the centre. The Poison Control unit collaborated with DSD to investigate a suspected incident of chemical poisoning at Teshie cluster of schools. Three planning meetings with SHEP coordinators of GES and One (1) planning meeting with the Oil Marketing Companies (OMCs) came off.

An orientation workshop was held for 20 teachers in 7 sub-metros of AMA on prevention and management of kerosene poisoning in children. The programme office engaged in Public Talks on the following topics:

- Health and Environmental Implications of use of car tyres for singeing meat-EPA
- Prevention/management of household poisoning-Rev. Ernest Bruce Methodist Church, Adabraka
- Role and operations of Ghana Poison Control Centre-Radio Universe

One hundred and twenty-three (123) farm workers (pesticide applicators) from Ga-East and Dangme-West were trained to recognize signs and symptoms of pesticide poisoning and how to administer first aid for pesticide poisoning.

One (1) planning meeting and (1) stakeholder meeting held in connection with policy on safer packaging of kerosene and other toxic substances. There was monitoring and evaluation of TOT project to increase awareness about prevention of childhood poisoning among nurses.

Two (2) planning meetings were held with GAR Health Information Officer and an officer from PPME concerning the development of a poison surveillance system. Data collection tools for surveillance activities have been developed and stakeholders have been identified. The technical
staff of the unit was able to participate in the following CPD programme in Poison control: IntoxData management system-U.K.

iv. Public Health Laboratory Services

The Public Health Laboratories (PHL) are located at Korle-bu, Sekondi-Takoradi, Kumasi and Tamale. The laboratory at Korle-Bu has been designated as the National Public Health and Reference Laboratory.

Major activities

- Made technical support and supervisory visits to Northern, Upper West and Upper East Regions
- Participated in EQA’s for measles & rubella, HIV, Malaria, Bacteriology, TB (Proficiency testing)
- Several In-service training activities (the use of the Cholera SMART rapid test kits, IPHU, processing of Dried Tube Specimens (DTS) and digital proficiency testing as well as other trainings)
- Sent 10% measles and YF samples to WHO/AFRO Lab for Quality Control and participated in YF outbreak investigations and the BUI Health Impact Assessment
- The NPHRL selected lab for accreditation involved in SLMTA activities; NPHRL is a PT center for DTS provided EQA to HIV testing sites in a pilot study, which included 37 sites in Accra. The sites were trained in March. Three rounds of challenge samples were sent to the selected sites in the year. November-December witnessed a scale-up to 250 sites in total. Training was organized in each region and 100 new sites were selected to participate in a trial
- The Regional laboratory at Koforidua investigated a suspected outbreak of nosocomial infection in the special care baby unit at the regional hospital. The two main organisms identified were *klebsiella spp.* and *staphylococcus spp.*
- The PHL at Tamale organized the 4th and 5th outreach training and support supervision (OTSS) on malaria diagnosis. The OTSS covered 18 health facilities in the Northern region.

Ho5 Improve Institutional Care, including Mental Health Service Delivery

The report on the Baseline Assessment on Quality of Neonatal Care conducted in 3 hospitals was completed and discussed with the hospitals. Training program and materials developed were developed. With support from Vodafone, 2700 free cataract surgeries were performed nationwide. Two new refractive centres were provided for Nsawam and Ho Regional Hospitals. Guidelines for screening for non-communicable diseases were developed and screening for non-communicable diseases was started in the Regional Hospitals.
KEY PERFORMANCE INDICATORS

Table and Figures

Ho1: Bridge Equity Gaps in access to health care and nutrition services and ensure sustainable financing arrangements that protect the poor

Community-Based Health Planning And Services

FIG 1.0 NATIONAL PROGRESS IN IMPLEMENTING FUNCTIONAL CHPS ZONES

Although the set target (1,800 new functional CHPS in 2011) for CHPS implementation was not achieved, there has been a significant increase in the number of functional CHPS nationwide following the relatively slow start in CHPS implementation over the previous years. Implementation of functional CHPS has doubled from 868 in 2009 to 1,675 in 2011. This increase has also been met with a correlated increase in the number of community health officers, most of whom have already had training in CHPS service delivery as part of their pre-service training.

A functional CHPS zone is defined as a geographically well-defined area within a sub-district, with an assigned a CHO who has started offering community services including home visits to clients living in the zone. A CHPS is functional although one or more key milestones such as a compound may not have been provided. The population covered by CHPS increased from 16.4% in 2009 to 21.78% in 2011.
FIG 1.1 CHPS COVERAGE

TABLE 1.0 PROGRESS IN CHPS IMPLEMENTATION 2011

<table>
<thead>
<tr>
<th>REGION</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASH</td>
<td>8</td>
<td>36</td>
<td>196</td>
</tr>
<tr>
<td>BAR</td>
<td>62</td>
<td>46</td>
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<tr>
<td>CR</td>
<td>68</td>
<td>93</td>
<td>134</td>
</tr>
<tr>
<td>ER</td>
<td>298</td>
<td>315</td>
<td>369</td>
</tr>
<tr>
<td>GAR</td>
<td>20</td>
<td>83</td>
<td>66</td>
</tr>
<tr>
<td>NR</td>
<td>75</td>
<td>78</td>
<td>182</td>
</tr>
<tr>
<td>UER</td>
<td>104</td>
<td>96</td>
<td>120</td>
</tr>
<tr>
<td>UWR</td>
<td>85</td>
<td>93</td>
<td>105</td>
</tr>
<tr>
<td>VR</td>
<td>50</td>
<td>71</td>
<td>225</td>
</tr>
<tr>
<td>WR</td>
<td>114</td>
<td>123</td>
<td>176</td>
</tr>
<tr>
<td>Total</td>
<td>868</td>
<td>1034</td>
<td>1675</td>
</tr>
</tbody>
</table>

There have been increases in the number of functional CHPS zones across all the regions. However the Ashanti Region has shown a comparatively greater pace in scaling-up CHPS than most regions - improving from 36 CHPS in 2010 to 136 in 2011. The Volta Region has also shown similar rapid scale-up. These two regions are the only Regions reported to have sensitized their districts teams on the repositioning of CHPS in 2011.
TABLE 1.1 3-YEAR TREND IN OPD PER CAPITA 2009 - 2011

<table>
<thead>
<tr>
<th>REG</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASH</td>
<td>0.89</td>
<td>1.04</td>
<td>1.18</td>
</tr>
<tr>
<td>BAR</td>
<td>1.15</td>
<td>1.25</td>
<td>1.38</td>
</tr>
<tr>
<td>CR</td>
<td>0.71</td>
<td>0.81</td>
<td>0.83</td>
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<tr>
<td>ER</td>
<td>0.95</td>
<td>1.04</td>
<td>1.19</td>
</tr>
<tr>
<td>GAR</td>
<td>0.51</td>
<td>0.97</td>
<td>0.66</td>
</tr>
<tr>
<td>NR</td>
<td>0.53</td>
<td>0.54</td>
<td>0.62</td>
</tr>
<tr>
<td>UER</td>
<td>1.37</td>
<td>1.47</td>
<td>1.42</td>
</tr>
<tr>
<td>UWR</td>
<td>0.72</td>
<td>0.91</td>
<td>1.10</td>
</tr>
<tr>
<td>VR</td>
<td>0.69</td>
<td>0.76</td>
<td>0.87</td>
</tr>
<tr>
<td>WR</td>
<td>0.99</td>
<td>1.16</td>
<td>1.38</td>
</tr>
<tr>
<td>National</td>
<td>0.81</td>
<td>0.98</td>
<td>1.07</td>
</tr>
</tbody>
</table>

OPD attendance continued to increase nationally with an average of 1.07. All the regions showed an increase in OPD per capita with the exception of Greater Accra and Upper East Region. The drop in the OPD per capita can be attributed to incompleteness of the service data. The overall increase is largely due to improvement in access to health care that the National Health Insurance provides. Deployment of community health officers into CHPS zones has greatly improved geographical accessibility in most of the regions contributing to the high OPD per capita. The proportion of the outpatients seen by Community Health Officers under CHPS has moved from 4.2% in 2009 to 5.2% in 2011.

TABLE 1.2 3-YEAR TREND IN DOCTOR/POPULATION RATIO 2009 - 2011

<table>
<thead>
<tr>
<th>Region</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASH</td>
<td>8,288</td>
<td>7,184</td>
<td>7,704</td>
</tr>
<tr>
<td>BAR</td>
<td>16,919</td>
<td>22,967</td>
<td>16,103</td>
</tr>
<tr>
<td>CR</td>
<td>22,877</td>
<td>18,218</td>
<td>20,442</td>
</tr>
<tr>
<td>ER</td>
<td>16,132</td>
<td>15,801</td>
<td>16,065</td>
</tr>
<tr>
<td>GAR</td>
<td>5,103</td>
<td>4,099</td>
<td>3,712</td>
</tr>
<tr>
<td>NR</td>
<td>50,751</td>
<td>18,257</td>
<td>21,751</td>
</tr>
<tr>
<td>UER</td>
<td>35,010</td>
<td>31,214</td>
<td>38,642</td>
</tr>
<tr>
<td>UWR</td>
<td>47,932</td>
<td>27,050</td>
<td>38,267</td>
</tr>
<tr>
<td>VR</td>
<td>26,538</td>
<td>32,605</td>
<td>23,660</td>
</tr>
<tr>
<td>WR</td>
<td>33,187</td>
<td>31,190</td>
<td>26,044</td>
</tr>
<tr>
<td>National</td>
<td>11,929</td>
<td>10,423</td>
<td>10,034</td>
</tr>
</tbody>
</table>

The average doctor/population ratio for Ghana has improved slightly in 2011 compared to 2010. The improvement in the ratio in the Northern Region was not sustained. The three regions, Upper East, Upper West and Northern Region continue to have a poor doctor/population ratio. This is because persistently doctors have refused posting to the three northern Regions. The Volta Region is recovering from the poor ratio. Although the doctor/population ratio for both Ashanti and Greater Accra appear to be good, about 50% of these doctors are in the two Teaching Hospitals seriously consider more sustainable strategies to push up its number of doctors nationwide.
Nationally, the nurse/population ration for the country has continued to improve following the trend from the previous two years. Interestingly, Upper West and East has recorded remarkable improvement in the nurse/population ratio. This is the direct result of the train and retain policy adopted by the Ministry of Health, which allows Regions to retain the nurses trained in their Regions. The two regions have applied this policy strictly and are benefitting from it. The same applies to the Western Region. Greater Accra has experienced a worsening of the nurses/population ratio as a result of nurse leaving to enter tertiary institutions in other regions.

<table>
<thead>
<tr>
<th>Region</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASH</td>
<td>1,629</td>
<td>1,971</td>
<td>1,568</td>
</tr>
<tr>
<td>BAR</td>
<td>1,822</td>
<td>1,891</td>
<td>1,495</td>
</tr>
<tr>
<td>CR</td>
<td>1,518</td>
<td>1,538</td>
<td>1,309</td>
</tr>
<tr>
<td>ER</td>
<td>1,181</td>
<td>1,356</td>
<td>1,173</td>
</tr>
<tr>
<td>GAR</td>
<td>1,069</td>
<td>1,017</td>
<td>1,255</td>
</tr>
<tr>
<td>NR</td>
<td>1,934</td>
<td>2,067</td>
<td>1,547</td>
</tr>
<tr>
<td>UER</td>
<td>1,125</td>
<td>1,141</td>
<td>914</td>
</tr>
<tr>
<td>UWR</td>
<td>1,136</td>
<td>1,163</td>
<td>950</td>
</tr>
<tr>
<td>VR</td>
<td>1,174</td>
<td>1,422</td>
<td>1,242</td>
</tr>
<tr>
<td>WR</td>
<td>1,581</td>
<td>1,690</td>
<td>895</td>
</tr>
<tr>
<td>National</td>
<td>1,497</td>
<td>1,489</td>
<td>1,240</td>
</tr>
</tbody>
</table>

The midwife/women in fertile age ratio has improved from the year 2010 to 2011. This is because of increase in the production of midwives. Midwifery training schools have been set up in all the regions. Eastern, Northern, Upper West, Volta and Western are seen a worsening in the Midwife to WIFA ratio. These regions appear to be greatly affected by the retirement of the ageing midwives.
National Health Insurance

FIG 1.2  NHIS ASSESSMENT, ACCREDITATION AND GRADING IN 2011

![National grading - all levels](image)

Most of the facilities were classified as C, only 3% had an A classification on inspection.

TABLE 1.5  INSURANCE STATUS OF OUTPATIENT ATTENDANCE

<table>
<thead>
<tr>
<th>Region</th>
<th>2011 target for insured clients at OPD</th>
<th>2011</th>
<th>Contribution from CHPS (%OPD clients seen by CHOs)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total number of OPD attendants</td>
<td>% Insured OPD Clients</td>
<td></td>
</tr>
<tr>
<td>ASH</td>
<td>65</td>
<td>5,739,460</td>
<td>83</td>
</tr>
<tr>
<td>BAR</td>
<td>65</td>
<td>3,504,469</td>
<td>88</td>
</tr>
<tr>
<td>CR</td>
<td>65</td>
<td>1,802,886</td>
<td>72</td>
</tr>
<tr>
<td>ER</td>
<td>65</td>
<td>3,166,197</td>
<td>85</td>
</tr>
<tr>
<td>GAR</td>
<td>65</td>
<td>2,651,707</td>
<td>54</td>
</tr>
<tr>
<td>NR</td>
<td>65</td>
<td>1,589,509</td>
<td>85</td>
</tr>
<tr>
<td>UER</td>
<td>65</td>
<td>1,478,075</td>
<td>91</td>
</tr>
<tr>
<td>UWR</td>
<td>65</td>
<td>758,084</td>
<td>94</td>
</tr>
<tr>
<td>VR</td>
<td>65</td>
<td>1,883,185</td>
<td>80</td>
</tr>
<tr>
<td>WR</td>
<td>65</td>
<td>3,271,384</td>
<td>75</td>
</tr>
<tr>
<td>National</td>
<td>65</td>
<td>25,844,956</td>
<td>80</td>
</tr>
</tbody>
</table>

The impact and contributions of CHPS to OPD attendance also though varied among the regions is both significant and encouraging, with the Upper East and Upper West Regions recording the
highest values. This impact is also reflected by the percentage of insured clients attending the OPD in these two regions. On the other hand, Greater Accra Region, recording the lowest contribution from CHPS (1%) was also incidentally the region with the lowest number of insured clients attending the OPD in 2011. This presents a striking difference to the Ashanti region where CHPS contributions are equally low (1.6%) yet has one of the highest number of insured clients at the OPD (85%) above the target for 2011. The reasons for this disparity although not immediately obvious may be well varied.

**Ho2: Improve governance and strengthen efficiency in health service delivery, including medical emergencies**

**Financing Mechanism and Financial Management Systems**

Although there was a 12.5% increase in the overall health sector budget for 2011, this was not as significant as when compared to the previous year 2010 (40.7%). Sector Budget Support and Earmarked funds given in 2011 were significantly lower than that allocated in 2010. Most significant is the increase in IGF at 144%. The sector did not receive funds from the HIPC initiative.

**TABLE 2.0 TREND IN HEALTH SECTOR BUDGET 2008 - 2011**

<table>
<thead>
<tr>
<th>TOTAL HEALTH SECTOR BUDGET</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOURCE</td>
<td>BUDGET (000)</td>
<td>BUDGET</td>
<td>BUDGET</td>
<td>BUDGET (&quot;000)</td>
<td>BUDGET (&quot;000)</td>
</tr>
<tr>
<td>GOG</td>
<td>248,190.00</td>
<td>268,517.00</td>
<td>344,398.00</td>
<td>400,451.00</td>
<td>406,642.00</td>
</tr>
<tr>
<td>HEALTH FUND/SBS</td>
<td>18,900.00</td>
<td>126,731.00</td>
<td>63,981.00</td>
<td>79,823.00</td>
<td>70,660.00</td>
</tr>
<tr>
<td>EARMARKED FUNDS</td>
<td>78,583.50</td>
<td>92,191.00</td>
<td>18,602.00</td>
<td>243,294.00</td>
<td>135,970.00</td>
</tr>
<tr>
<td>IGF</td>
<td>52,100.00</td>
<td>115,070.00</td>
<td>108,312.00</td>
<td>208,180.00</td>
<td>507,493.00</td>
</tr>
<tr>
<td>NHIF</td>
<td>175,909.70</td>
<td>235,430.00</td>
<td>462,940.00</td>
<td>480,908.00</td>
<td>477,673.00</td>
</tr>
<tr>
<td>HIPC</td>
<td>9,500.00</td>
<td>6,485.00</td>
<td>11,427.00</td>
<td>8,000.00</td>
<td>8,000.00</td>
</tr>
<tr>
<td>TOTAL HEALTH SECTOR BUDGET</td>
<td>583,183.20</td>
<td>844,424.00</td>
<td>1,009,660.00</td>
<td>1,420,656.00</td>
<td>1,598,438.00</td>
</tr>
</tbody>
</table>

As in the previous year, the GHS total non-wage recurrent was predominantly from internally generated funds (IGF), constituting over 60%. Programme receipts were also fairly high (35%), whereas Government of Ghana (GoG) receipts were significantly low (2%).
TABLE 2.1 2011 GHS STATEMENT OF RECEIPTS/ EXPENDITURE

<table>
<thead>
<tr>
<th>Source</th>
<th>Receipt</th>
<th>Expenditure</th>
<th>% Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>GoG</td>
<td>6,037,054.98</td>
<td>6,748,263.07</td>
<td>0.25</td>
</tr>
<tr>
<td>IGF</td>
<td>171,829,675.63</td>
<td>246,262,625.72</td>
<td>-26.17</td>
</tr>
<tr>
<td>SBS</td>
<td>7,473,612.69</td>
<td>5,572,206.29</td>
<td>0.67</td>
</tr>
<tr>
<td>Programme</td>
<td>99,083,147.54</td>
<td>90,132,456.06</td>
<td>3.15</td>
</tr>
<tr>
<td>Total</td>
<td>284,423,490.84</td>
<td>348,715,551.14</td>
<td>-23</td>
</tr>
</tbody>
</table>

Ghana Health Service Fleet size

There was an improvement in the fleet size of the service, with the introduction of the facilities vehicle hire purchase schemes. Other programs also procured vehicles for both the Regions and Districts. More motorbikes were also provided for the districts.

TABLE 2.2 GHANA HEALTH SERVICE FLEET SIZE 2011

<table>
<thead>
<tr>
<th>REGION</th>
<th>% OF VEHICLES 0-5 YEARS</th>
<th>% MOTORCYCLES 0-3 YEARS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASH</td>
<td>58</td>
<td>96</td>
</tr>
<tr>
<td>BAR</td>
<td>58</td>
<td>74</td>
</tr>
<tr>
<td>CR</td>
<td>69</td>
<td>10</td>
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<tr>
<td>ER</td>
<td>59</td>
<td>83</td>
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<tr>
<td>GAR</td>
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<td>89</td>
</tr>
<tr>
<td>NR</td>
<td>40</td>
<td>86</td>
</tr>
<tr>
<td>UER</td>
<td>90</td>
<td>76</td>
</tr>
<tr>
<td>UWR</td>
<td>60</td>
<td>63</td>
</tr>
<tr>
<td>VR</td>
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<td>66</td>
</tr>
<tr>
<td>WR</td>
<td>66</td>
<td>92</td>
</tr>
<tr>
<td>Headquarters</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>54.7</td>
<td>72.5</td>
</tr>
</tbody>
</table>
Ho3: Improve Access To Quality Maternal, Neonatal, Child And Adolescent Health Services

TABLE 3.0 KEY SECTOR PERFORMANCE INDICATORS 2009 - 2011

<table>
<thead>
<tr>
<th>Indicator</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2011 TARGET</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institutional MMR (per 1000 live births)</td>
<td>169.9</td>
<td>163.2</td>
<td>173.8</td>
<td>150</td>
</tr>
<tr>
<td>HIV prevalence among pregnant women 15-24 years</td>
<td>2.9%</td>
<td>2.0%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>ANC coverage</td>
<td>92.1%</td>
<td>93.3%</td>
<td>91.3%</td>
<td>95</td>
</tr>
<tr>
<td>% Deliveries attended by A Skilled Attendant</td>
<td>45.6%</td>
<td>49.5%</td>
<td>52.23%</td>
<td>50.0%</td>
</tr>
<tr>
<td>PNC coverage</td>
<td>56.0%</td>
<td>61.6%</td>
<td>64.7</td>
<td>65</td>
</tr>
<tr>
<td>FP Acceptor Rate</td>
<td>31.1%</td>
<td>24.9%</td>
<td>24.9</td>
<td>27</td>
</tr>
<tr>
<td>Penta-3 coverage</td>
<td>89.3%</td>
<td>87.1%</td>
<td>85.86</td>
<td>90</td>
</tr>
<tr>
<td>Measles coverage</td>
<td>89.1%</td>
<td>87.7%</td>
<td>86.33</td>
<td>90</td>
</tr>
</tbody>
</table>

Institutional Maternal Mortality Ratio

Following the high institutional maternal mortality ratio recorded in 2009, there was a slight decline in maternal deaths in 2010 (from 169.9_{2009} to 163.2_{2010}). This was however not sustained and IMMR increased to 173.8 in 2011. The reasons for these may well be varied but are very important particularly as there are many interventions ongoing towards achieving MDG5 including increasing access to skilled delivery and EmONC including safe blood. We need to ensure that women are not dying in our facilities, hence the need to investigate the underlying causes of this year’s sudden increase in maternal deaths.

Ante natal Care and Skilled Delivery

Efforts to provide quality maternal care services continue to be high priority in the GHS. This focus is yielding positive results in the coverage of skilled attendance across the country. There was a marginal increase in the ANC coverage an improvement over the previous year when there was a decrease. Efforts in addressing the MDG5 through the posting and training of midwives to health centers and CHPS compounds may be responsible for this trend.
TABLE 3.1  3-YEAR TREND IN SKILLED DELIVERY COVERAGE

<table>
<thead>
<tr>
<th>Region</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2011 target</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASH</td>
<td>42.4%</td>
<td>53.4%</td>
<td>52.0%</td>
<td>50%</td>
</tr>
<tr>
<td>BAR</td>
<td>53.7%</td>
<td>54.0%</td>
<td>63.2%</td>
<td>50%</td>
</tr>
<tr>
<td>CR</td>
<td>52.5%</td>
<td>51.6%</td>
<td>59.7%</td>
<td>50%</td>
</tr>
<tr>
<td>ER</td>
<td>52.1%</td>
<td>48.2%</td>
<td>52.8%</td>
<td>50%</td>
</tr>
<tr>
<td>GAR</td>
<td>47.9%</td>
<td>54.4%</td>
<td>56.0%</td>
<td>50%</td>
</tr>
<tr>
<td>NR</td>
<td>36.1%</td>
<td>36.8%</td>
<td>31.2%</td>
<td>50%</td>
</tr>
<tr>
<td>UER</td>
<td>52.6%</td>
<td>59.7%</td>
<td>67.3%</td>
<td>50%</td>
</tr>
<tr>
<td>UWR</td>
<td>36.7%</td>
<td>46.5%</td>
<td>53.3%</td>
<td>50%</td>
</tr>
<tr>
<td>VR</td>
<td>39.4%</td>
<td>36.9%</td>
<td>40.2%</td>
<td>50%</td>
</tr>
<tr>
<td>WR</td>
<td>42.6%</td>
<td>49.6%</td>
<td>54.7%</td>
<td>50%</td>
</tr>
<tr>
<td>National</td>
<td>45.6%</td>
<td>49.5%</td>
<td>52.2%</td>
<td>50%</td>
</tr>
</tbody>
</table>

With the national coverage of 52.2% in skilled deliveries in 2011, this indicator has continued to improve from 45.6% in 2009 and 49.5% in 2010. However, wide inter-regional variations persist: Upper East, Western and Brong-Ahafo Region have all shown a consistent increase in skilled delivery coverage from the year 2009. Greater Accra Region has also recovered from the drop it suffered in 2009 and increased coverage to 56% in 2011. This may be in part, a reflection of improvements in data collection particularly from the private sector.

Volta Region also recovered from its dip in 2010 to achieve 40.2% coverage in 2011; an achievement, which, for the most part may be attributable to improved staffing particularly the midwife to WIFA population ratio during 2011. Northern region has however continued to suffer a decline in its skilled delivery coverage, from approximately 36% (in both 2009 & 2010) to 31% in 2011.

_Ho4: Intensify Prevention And Control Of Communicable And Non-Communicable Diseases And Promote Healthy Lifestyles_

_Disease Surveillance_

Between January and December 2011, 274 AFP cases were reported from the regions, given a Non-polio AFP rate of 2.2 per 100,000 population. There were no records of wild poliovirus isolated during the year although 17 cases were classified as being compatible with polio. This has called for an improvement on AFP surveillance at all levels.
The number of discarded cases was 132. Timeliness and adequacy of stool were 84.7% and 82.5% respectively. Although Brong Ahafo, Greater Accra, Volta and Western regions did not achieve stool adequacy (>=80%), 97.8% of stools arrived at the lab in good condition. Approximately 72.8% of AFP cases had received at least 3 doses of OPV. The sixty-day (60) follow-up of the AFP cases was a major challenge as only 143 (53%) of AFP cases were duly followed up within this period. Out of these, 26.2% had residual paralysis.

**FIG 4.0   AFP CORE SURVEILLANCE INDICATORS 2000 - 2011**

**FIG 4.1   CONFIRMED WILD POLIO VIRUS CASES 1996 - 2011**
### TABLE 4.0 REGIONAL VARIATIONS IN REPORTED CHOLERA CASES, DEATHS, CFR AND ATTACK RATES JAN – DEC 2011

<table>
<thead>
<tr>
<th>Region</th>
<th>Cases</th>
<th>Deaths</th>
<th>Case fatality rate (%)</th>
<th>Attack rate / per 100,000 pop</th>
</tr>
</thead>
<tbody>
<tr>
<td>GAR</td>
<td>9,118</td>
<td>75</td>
<td>0.8</td>
<td>19.540</td>
</tr>
<tr>
<td>ER</td>
<td>624</td>
<td>11</td>
<td>1.8</td>
<td>2.542</td>
</tr>
<tr>
<td>CR</td>
<td>464</td>
<td>7</td>
<td>1.5</td>
<td>2.316</td>
</tr>
<tr>
<td>VR</td>
<td>89</td>
<td>4</td>
<td>4.5</td>
<td>0.442</td>
</tr>
<tr>
<td>NR</td>
<td>55</td>
<td>0</td>
<td>0.0</td>
<td>0.223</td>
</tr>
<tr>
<td>WR</td>
<td>45</td>
<td>1</td>
<td>2.4</td>
<td>0.176</td>
</tr>
<tr>
<td>BAR</td>
<td>42</td>
<td>1</td>
<td>2.4</td>
<td>0.176</td>
</tr>
<tr>
<td>ASH</td>
<td>37</td>
<td>2</td>
<td>5.4</td>
<td>0.071</td>
</tr>
<tr>
<td>UWR</td>
<td>10</td>
<td>0</td>
<td>0.0</td>
<td>0.144</td>
</tr>
<tr>
<td>National</td>
<td>10,484</td>
<td>101</td>
<td>1.0</td>
<td>4.086</td>
</tr>
</tbody>
</table>

A total of 10,484 cases with case fatality rate of 1.0% were reported from the nine regions indicated above. Acceptable case fatality rate during Cholera outbreaks is 1.0% and below. About 97.4% of the reported cases were the Greater Accra Region (87%), Eastern Region (6%) and Central Region (4.4%). The overall attack rate was 4.08/100,000 population. Four regions (Northern, Upper East, Upper West and Western) reported measles outbreak during the year. All the outbreaks were investigated and appropriate response actions taken.

### FIG 4.2 SUSPECTED CASES AND LAB CONFIRMED CASES OF MEASLES AND MEASLES IMMUNIZATION COVERAGE IN GHANA 2003 - 2011
Pneumonia in under-five year olds

For the period under review, there were a total of 44,393 Pneumonia cases in children under five years of age with 170 deaths (CFR= 0.38%). There was an 11.3% increase in reported cases between 2010 and 2011.

**FIGURE 4.3 TREND IN REPORTED PNEUMONIA CASES AMONG UNDER-5 YEAR OLDS 2003 – 2011**

Acute Diarrhoeal Diseases (Excluding Cholera)

*Diarrhoea in Children Under Five Years*

The total number of diarrhoea cases among children under five years for the year 2011 was 113,786 out of which 2,318 were with severe dehydration and 354 deaths (CFR=0.31%). Upper Region recorded the highest IR of 3,611.2/100,000 population as compared to the national average of 2,217.6/100,000 population. This is largely due to the fact that the Upper East Region provided regular and timely and complete weekly reports on diarrhoeal diseases.
FIG 4.4 REGIONAL VARIATION IN REPORTED DIARRHOEA CASES AMONG UNDER-5 YEAR OLDS PER 100,000 CASES IN 2011

Immunization Coverage

TABLE 4.1 KEY PRIORITY EPI INDICATORS 2010 – 2011

<table>
<thead>
<tr>
<th>Antigens</th>
<th>2010</th>
<th>2011</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCG</td>
<td>1,019,676</td>
<td>1,070,080</td>
<td>50,404</td>
</tr>
<tr>
<td>Penta-1</td>
<td>900,240</td>
<td>916,003</td>
<td>15,763</td>
</tr>
<tr>
<td>Penta-2</td>
<td>851,257</td>
<td>876,555</td>
<td>25,298</td>
</tr>
<tr>
<td>Penta-3</td>
<td>869,670</td>
<td>887,086</td>
<td>17,416</td>
</tr>
<tr>
<td>Polio-0</td>
<td>618,779</td>
<td>678,046</td>
<td>59,267</td>
</tr>
<tr>
<td>Polio-1</td>
<td>897,110</td>
<td>909,277</td>
<td>12,167</td>
</tr>
<tr>
<td>Polio-2</td>
<td>849,213</td>
<td>873,341</td>
<td>24,128</td>
</tr>
<tr>
<td>Polio-3</td>
<td>867,350</td>
<td>884,615</td>
<td>17,265</td>
</tr>
<tr>
<td>Measles</td>
<td>875,449</td>
<td>894,546</td>
<td>19,097</td>
</tr>
<tr>
<td>YF</td>
<td>873,904</td>
<td>888,802</td>
<td>14,898</td>
</tr>
<tr>
<td>TT-2+</td>
<td>761,440</td>
<td>773,092</td>
<td>11,652</td>
</tr>
</tbody>
</table>
Table 4.1 above shows the performance of the immunization programme by antigen. From the table, the 2011 performance for all antigens improved in absolute figures over that of 2010. In terms of coverages, there was a reduction in Polio-1 and yellow fever. All other antigens either improved or remained the same. With the exception of BCG and Penta-1 that exceeded the annual coverage target of 90.0%, all other antigens could not meet the target.

**TABLE 4.2   TREND IN PENTA-3 COVERAGE 2009 – 2011**

With the national target at 90%, national performance in immunization, as measured by Penta-3 coverage, continued its decline for a second year running, dropped from 89.3% in 2009 and 87.1% in 2010 to 85.8% in 2011. Western Region was the only region to achieve 100% coverage. In contrast, Volta was the only Region that continued to record a progressive drop in coverage over the three-year period. All other regions recorded either a slight decline or improvement. Several factors are contributing to this decline. Some of the reasons are: Poor data capture especially in the Greater Accra Region. Inadequate funding and the delays in the release of funds for district activities affected planned outreach services in districts resulting in the inability to provide immunization services in many hard-to-reach communities. This has affected this year’s EPI national coverage evidenced by Penta 3 coverage figures in Table 4.2 shown.

<table>
<thead>
<tr>
<th>Region</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASH</td>
<td>83.7</td>
<td>86.5</td>
<td>88.9</td>
</tr>
<tr>
<td>BAR</td>
<td>95.0</td>
<td>94.3</td>
<td>95.5</td>
</tr>
<tr>
<td>CR</td>
<td>96.6</td>
<td>94.3</td>
<td>86.7</td>
</tr>
<tr>
<td>ER</td>
<td>94.5</td>
<td>93.6</td>
<td>88.0</td>
</tr>
<tr>
<td>GAR</td>
<td>72.7</td>
<td>70.1</td>
<td>71.8</td>
</tr>
<tr>
<td>NR</td>
<td>123.0</td>
<td>109.2</td>
<td>84.1</td>
</tr>
<tr>
<td>UER</td>
<td>106.0</td>
<td>83.1</td>
<td>88.7</td>
</tr>
<tr>
<td>UWR</td>
<td>90.1</td>
<td>81.7</td>
<td>81.3</td>
</tr>
<tr>
<td>VR</td>
<td>82.9</td>
<td>81.4</td>
<td>77.0</td>
</tr>
<tr>
<td>WR</td>
<td>88.6</td>
<td>86.4</td>
<td>100.6</td>
</tr>
<tr>
<td><strong>National</strong></td>
<td><strong>89.3</strong></td>
<td><strong>87.1</strong></td>
<td><strong>85.86</strong></td>
</tr>
</tbody>
</table>

Inadequate funding and the delays in the release of funds for district activities affected planned outreach services in districts resulting in the inability to provide immunization services in many hard-to-reach communities. This has affected this year’s EPI national coverage evidenced by Penta 3 coverage figures in Table 4.2 shown.

It is worth mentioning that funding for service activities in the districts are continually being released relatively later each year; and this delay is most significant to EPI activities, for which the most opportune time to maximize immunization activities is during dry season from January to April when most communities are accessible.

Table 4.3 below shows that the number of compatibles decreased from 24 in 2010 to 17 in 2011, representing a decrease of 29.2%
TABLE 4.3  TREND IN AFP SURVEILLANCE  JAN – DEC 2009 - 2011

<table>
<thead>
<tr>
<th>Indicator</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of cases detected</td>
<td>308</td>
<td>211</td>
<td>277</td>
</tr>
<tr>
<td>Non Polio AFP rate</td>
<td>2.48</td>
<td>1.82</td>
<td>2.2</td>
</tr>
<tr>
<td>% Timely stools</td>
<td>81.2%</td>
<td>87.0%</td>
<td>84.0%</td>
</tr>
<tr>
<td>% Adequate stool</td>
<td>75.4%</td>
<td>79.2%</td>
<td>82.5%</td>
</tr>
<tr>
<td>Number of WPV isolated</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Number compatible with Polio</td>
<td>33</td>
<td>24</td>
<td>17</td>
</tr>
<tr>
<td>Number discarded as non-Polio</td>
<td>273</td>
<td>184</td>
<td>238</td>
</tr>
</tbody>
</table>

Tuberculosis Incidence And Prevalence

Under the grant, the programme realized some major achievements: The grant contributed importantly to the acceleration of the downward trend in TB prevalence and incidence (fig 4.5). Case notification/detection was much improved (fig 4.6 and 4.7 below) meeting the global target of 70% in 2010. This was largely attributable to implementing multiple interventions, with other stakeholders including the civil society.

FIG. 4.5     TRENDS OF TB PREVALENCE AND INCIDENCE

![Trends of prevalence and incidence rate](image)

FIG. 4.6  TRENDS IN CASE DETECTION RATE


FIG. 4.7  TB CASE NOTIFICATION RATES

TB Treatment Outcomes

Treatment Success

The NTP has since 2008 achieved the Global target of 85% treatment success (fig 4). The treatment success rate however varied from region to region. All regions except Eastern, Brong-
Ahafo and Upper East regions achieved treatment success rates above the national average in the reporting period of 2011

FIG. 4.8 NATURAL TB TREATMENT SUCCESS RATES VERSUS ADVERSE OUTCOMES

Adverse Treatment Outcomes

Adverse treatment outcomes comprises, proportion of patients dying, defaulters, and treatment failures. There has been significant improvement with noticeably declining trend (fig.4)

However, further analysis of adverse outcomes (fig.5) indicates that the proportion of patients dying has not declined significantly compared with the others. (Treatment failures and defaulters) It may be explained perhaps, by low quality of care patients may be receiving in some health institutions, late arrival of patients, TB/HIV co-infection, and definition of what constitute TB death. An Operations research will be needed to ascertain established causes.
Improving Regional and District Monitoring, Evaluation and Surveillance Systems

The National TB Control Programme at the beginning of the year planned to provide technical support to regions and districts aimed at enabling them maintain continuous improvement in case management. A number of monitoring and evaluation activities were undertaken throughout the country during the year under review. The NTP also participated in quarterly regional and district review meetings to review Programme implementation activities and also validate data sent to the national level. The Programme also conducted nationwide technical monitoring and support visits to all 10 regions in the country.

Non-communicable diseases

Sickle Cell Disease

| TABLE 4.4 TREND IN SCREENING BABIES FOR SICKLE CELL DISEASE, BY SCREENING CENTRE  2009-2011 |
|-------------------------------|------------------|------------------|------------------|------------------|
| Screening Centre              | 2009             | 2010             | 2011             |
| KATH (Main)                   | Total screened   | Share (%) of total cases | Total screened   | Share (%) of total cases | Total screened   | Share (%) of total cases |
|                               | 7,500            | 39.2             | 7,672            | 38.2             | 6,071            | 28.1             |
Out of a total of 20,348 babies screened with results during the period, 294 (1.44%) tested positive for SCD. A total of 343,375 babies were screened from the inception of the programme in 1995; 6,031 (1.8%) tested positive. A total of 3,186 babies (1.0%) had the FS genotype and 2,806 (0.8%) had the FSC genotype. As at 31 Dec 2011, a cumulative total of 1137 babies were awaiting results; 1349 babies had no results ever, 20 were not under newborn screening programme when their blood was tested.

### TABLE 4.5 TREND IN SCREENING FOR CERVICAL CANCER AND CRYOTHERAPIES PERFORMED

<table>
<thead>
<tr>
<th>Year</th>
<th>Total no. of Clients screened</th>
<th>VIA positive</th>
<th>VIA negative</th>
<th>Total no. of Cryotherapies performed</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>1083</td>
<td>21 (1.9%)</td>
<td>1062 (98.1%)</td>
<td>15 (71%)</td>
</tr>
<tr>
<td>2010</td>
<td>1088</td>
<td>34 (3.1%)</td>
<td>1054 (96.9%)</td>
<td>30 (88.2%)</td>
</tr>
<tr>
<td>2011</td>
<td>770</td>
<td>28 (3.6%)</td>
<td>742 (96.4%)</td>
<td>24 (86%)</td>
</tr>
</tbody>
</table>

Ridge Hospital in Accra and Kumasi South Hospital in Kumasi and KATH undertook cervical cancer screening as an integral part of their family planning services. They used both visual inspection with acetic acid/cryotherapy and Pap smear with cytology.
TABLE 4.6 TREND IN CERVICAL CANCER SCREENING AT RIDGE HOSPITAL USING PAP SMEAR AND PERCENTAGE POSITIVE FOR CIN 1-111 AND CERVICAL CANCER, 2009 – 2011

<table>
<thead>
<tr>
<th>Year</th>
<th>Total no. of clients screened</th>
<th>CIN 1-111</th>
<th>Cancer</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>1132</td>
<td>30 (2.7%)</td>
<td>14 (1.2%)</td>
</tr>
<tr>
<td>2010</td>
<td>1321</td>
<td>23 (1.7%)</td>
<td>8 (0.61%)</td>
</tr>
<tr>
<td>2011</td>
<td>1116</td>
<td>13 (1.2%)</td>
<td>11 (1.0%)</td>
</tr>
</tbody>
</table>

The number of clients screened using VIA declined sharply from 1,088 in 2010 to 770 in 2011. The percentage that tested positive for VIA however increased slightly from 3.1% to 3.6% while the percentage of those who had cryotherapy performed out of the VIA positives decreased from 88.6% to 86% from 2010 to 2011. About 1200 women are screened every year for cervical cancer using Pap smear. In the year 2011, 1116 women were screened, out of whom 13 (1.2%) were positive for CIN 1-111 and 11 (1%) were cancer cases.

Hypertension as a risk factor for NCDs: Morbidity profile

The reported number of newly diagnosed outpatient hypertension in health facilities excluding KBTH and KATH increased 10-fold in 20 years from around 60,000 in 1990 to nearly 600,000 in 2009. Approximately 700,000 newly diagnosed outpatient cases of hypertension, 150,000 cases of diabetes and 300,000 cases of injuries and poisonings are currently being reported. Incomplete data from 2011 suggests dramatic increase in the reported cases of asthma more than twice the total reported cases in 2008.

Outpatient cases of NCDs are reported predominantly in females, this probably being a reflection of reporting behaviour of the two sexes. In 2011, 59.5% of the total new OPD cases were females. Of the total reported cases of hypertension in 2011, 67.1% were reported in females. Similarly, females constituted 62.6% and 53.4% of cases of diabetes and SCD in 2011.

With regards to within-sex comparison, hypertension accounted for 3.8% of the total new female OPD cases compared with 2.7% of the total new male OPD cases. Similarly, the proportion of all new cases due to diabetes was 0.8% among females compared with 0.7% among males.

Contrary to popular perception, majority of patients with newly diagnosed hypertension or diabetes were not elderly. Of the 629,214 cases reported in first nine months of 2011, 52.8% were aged 20-59 years; 46.6% were 60 years or older. Among the cases of diabetes in 2011, 57.9% were aged 20-59 years.

The proportion of newly reported outpatient cases in all ages attributed to hypertension has ranged from 3.1% to 4.0% in the past six years (Table 5). In comparison, only 1.23% of the total OPD cases were due to hypertension in 1985. About 2% of total OPD cases are due to injuries.
## TABLE 4.7 TREND IN NCDS REPORTED IN OUTPATIENTS 2006 - 2011

<table>
<thead>
<tr>
<th>Disease</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension and other heart diseases</td>
<td>265,040</td>
<td>298,304</td>
<td>526,960</td>
<td>338,616</td>
<td>611,736</td>
<td>705,202</td>
<td>847,588</td>
</tr>
<tr>
<td>Hypertension</td>
<td>249,342</td>
<td>283,591</td>
<td>505,180</td>
<td>321,994</td>
<td>586,960</td>
<td>681,163</td>
<td>847,588</td>
</tr>
<tr>
<td>Diabetes</td>
<td>39,789</td>
<td>47,464</td>
<td>112,657</td>
<td>66,115</td>
<td>121,931</td>
<td>156,076</td>
<td>193,079</td>
</tr>
<tr>
<td>Injuries and poisonings</td>
<td>268,519</td>
<td>231,675</td>
<td>276,847</td>
<td>187,190</td>
<td>303,496</td>
<td>324,834</td>
<td>281,231</td>
</tr>
<tr>
<td>Asthma</td>
<td>23,288</td>
<td>24,877</td>
<td>43,402</td>
<td>30,212</td>
<td>58,317</td>
<td>68,482</td>
<td>68,032</td>
</tr>
<tr>
<td>Sickle cell disease</td>
<td>10,261</td>
<td>12,260</td>
<td>18,925</td>
<td>10,974</td>
<td>19,017</td>
<td>25,905</td>
<td>30,401</td>
</tr>
<tr>
<td>All new diseases</td>
<td>8,488,752</td>
<td>10,208,310</td>
<td>12,667,324</td>
<td>10,131,505</td>
<td>16,639,223</td>
<td>19,239,769</td>
<td>18,843,502</td>
</tr>
</tbody>
</table>
CHALLENGES

Objective 1: Bridge gaps in access to health care and nutrition services and ensure sustainable financing arrangements that protects the poor

Human Resource

Sustaining the human resource in the Service has been a major challenge. A swelling health sector wage bill, inequitable distribution of available staff, delayed promotions and high attrition rates hampers the Service’ efficiency. The reasons given in part are linked to the poor monitoring system to track disengaged staff, which is made difficult by the unavailability of an updated and comprehensive HR database. Some have blamed this on inadequate support from Regional and Divisional Directors on HR activities particularly the updating and submission of nominal rolls on quarterly basis. Others argue that a number of reasons including outdated staffing norms for facilities, make re-distribution of essential health staff difficult. There are also concerns that there are inadequate resources for in-service training, fellowship and other management and leadership training.

Artisans are another cadre of staff whose numbers are declining due to ageing and retirement of already inadequate staff.

Objective 2: Improve governance and strengthen efficiency in health service delivery, including medical emergencies

Planned Maintenance

The Central Mechanical Workshop is collapsing because the failure of the Service to pay for vehicle maintenance services. There is also lack of commitment on the part of some institutional managers to commit funds and logistics towards maintenance of health infrastructure. This year, there has been a lack of spare parts particularly for corrective maintenance of laundry equipment.

There was a note on the poor coordination in the supply and installation of medical equipment by various programme, donors and BEU.

The Service is unhappy with MOH seemingly disregard with GHS Capital Investment Plan by MoH

Objective 3: Improve access to quality maternal, neonatal, child and adolescent health services

Access to skilled attendants and blood services

The Service continues to grapple with sustaining adequate numbers and an equitable distribution of
midwives nationally to afford WIFA increased access to skilled attendance during delivery. There is also growing concern to increase and provide Blood banks in many Hospitals. Some health facilities have their service delivery being hampered by inadequate medical equipment.

**Objective 4: Intensify prevention and control of communicable and non-communicable diseases and promote healthy lifestyles**

*Communicable Diseases - Surveillance and documentation*

- Delays in getting results of YF investigations from Institute de Pasteur (Dakar)
- Erratic supply of yellow fever reagents to the NPHRL
- Inadequate reporting during outbreaks including observance of daily reporting
- Poor use of existing case definition
- There is little idea about index of suspicion of cholera cases
- Vehicle for Rapid Response activities not performing optimally
- Inadequate documentation of surveillance activities
- Non-use of outbreaks/rumour logbooks

*Non-communicable diseases*

There is a generally low awareness on NCDs nationally resulting in low utilization, late reporting. The Service suffers from a general lack of national screening programmes for NCDs and limited diagnostic or screening equipment and limited palliative for NCDs coupled with inadequate treatment guidelines for NCDs. Counselling at health facilities for NCDs is weak or poor.

**Objective 5: Improve institutional care including mental health service delivery**

Compliance to national guidelines is low especially at the lower level where clinical care structures are very weak, this coupled with non-availability of these guidelines in most of the facilities. The coverage of Clinical care interventions (IPC, Patient Safety, Customer Care) is very low and thus their impact cannot be felt. Inadequate staffing in health facilities coupled with mal-distribution and poor attitude affect quality of services. In the earlier part of the year delayed payment of claims by NHIA affected service provision.
WAY FORWARD

HO 1 Bridge the equity gaps in access to health care and nutrition services and ensure sustainable financing arrangements that protect the poor

Human resource

In order achieve this health objective the Service plans to work out its human resource challenges:

- Scale-up standard HR tool (WAHO HRIS Software) to support HR Planning and budget at National and Regional Level
- Forecast HR needs of the GHS
- Complete reviewing staffing norms
- Production of HR Bulletin (Newsletter)
- Updating of Nominal Roll
  - Headquarters levels
  - Regional Levels
- Reconciliation of Nominal roll with Payroll
- Provide Technical Support to other HR Units and Regions Scale out standard HR tool (WAHO HRIS Software) to support HR Planning and budget at National and Regional Level.
- Forecast HR needs of the GHS.
- Complete reviewing staffing norms
- Production of HR Bulletin (Newsletter)
- Updating of Nominal Roll
  - Headquarters levels
  - Regional Levels
- Reconciliation of Nominal roll with Payroll
- Provide Technical Support to other HR Units and Regions

HO 2 Improve governance and strengthen efficiency in health service delivery, including medical emergencies

Planned Maintenance

To improve upon planned maintenance activities in the Service, in 2012 the Service plans to:

- Undertake Planned Preventive and Corrective Maintenance Programmes – transport, equipment and buildings
- Promote the use of Standard Designs and Specifications for construction of various types of health facilities
- Develop criteria for prioritization of infrastructure development
GHANA HEALTH SERVICE 2011 ANNUAL REPORT

- Healthcare Waste Management programme – conduct regional trainings with EHCU and construct 13 incinerators in selected health facilities.
- Collate information and monitor civil works procurement plans of all RHDs and GHS HQ
- Pursue the Completion of the GHS Headquarters Rehabilitation Project including the construction of access road to the 28th February crossing road
- Implement GHS Capital Plan and provide technical support for ADB PIU, OPEC PIU, Bolgatanga Regional Hospital PIU
- Revamp the Boat Management System
- Develop Standard Transport Operating Procedures (STOPs) also known as Transport Manual to guide the operational management of transport resources
- Sustain new initiative for vehicle replacement – Hire Purchase Scheme.
- Work towards strengthening Procurement and Logistics systems in the GHS.
- Liaise with PPA in the training of the ETC Members and Practitioners.
- Advocate for establishment of the Central Procurement Account.

**HO 3 Improve access to quality maternal, neonatal, child and adolescent health services**

**Ensuring and expanding access to Safe motherhood**

To expand and improve upon the continuum of care the Service in 2012 will continue to:

- Improve on Monitoring & Supervision (maternal, newborn and nutrition surveillance)
- Implement EMONC Assessment recommendations
- Provide modern equipment – sonic aid, portable Ultrasound, CTG Monitors for health facilities
- Build Capacity of Staff to offer quality care.
- Improve on Technical support to Regions, Districts, Division, Programmes and Partner agencies
- Strengthen Health Promotion Department & Resource Centre to provide materials for behaviour change communication.

**HO 4: Intensify prevention and control of communicable and non-communicable diseases and promote healthy lifestyles**

**Communicable Diseases**
In order to strengthen surveillance and documentation the Service proposes to commit additional efforts to:

- Strengthen the skills and practices of health personnel in the core surveillance functions through structured and integrated in-service training and enhanced facilitative supervisory support visits
- Complete adaptation of Second Edition of IDSR Technical Guidelines and its Training Modules to address declining core functions
- Print and distribute 400 copies of revised IDSR technical guidelines
- Organize zonal surveillance review meetings for District Surveillance Officers
- Installation of Data entry templates for all regions and on-site orientation of staff on the use of Epi-Info in managing IDSR data (weekly and monthly reports)
- Update database (inventory) for Community Based Surveillance
- Produce weekly and quarterly bulletins on priority diseases and provide feedback to the regions. This would be done in collaboration with Program managers and Center for Health Information Management in this direction.

**Non-communicable diseases**

To raise awareness on NCDs and extending screening services, the Service has proposed in 2012 to:

- Expand screening centres for cervical cancer
- Strengthen cancer registration, early detection, palliative care
- Scale up newborn screening SCD
- Continue advocacy for more NCDCP staff and Regional Focal Persons

**HO 5 Improve institutional care including mental health service delivery**

To further strengthen institutional care in the Service:

- There will be steps to initiate the establishment of the District Clinical care teams as defined in the Act 525.
- Some of Gaps identified in the quality of care for sick children in hospitals will be addressed through the provision of clinical care guidelines, engaging the Paediatric Society, collaborating with the better Medicine for Children’s project a
- Improving collaboration between public health and clinical care at all level should be placed on GHS agenda
- The Impact of clinical care interventions will be felt if there is scaling up to all health facilities such as infection prevention and control, patient safety, customer care, accidents and emergency, data quality audit, clinical audit. In this regard, performance of health facility managers must be linked to the implementation of clinical care interventions
- National clinical lab will be strengthened to enable it coordinate the implementation of GHS CDC cooperative and other lab agreements
- Continue collaboration with NHIA in the accreditation program. In addition GHS facilities that fail or awarded provisional accreditation will be supported to gain accreditation
- Introduce clinical data quality audit
- Complete draft clinical care guidelines and disseminate
- Continue specialist outreach service
- Intensify clinical supervision
- Undertake research on neonatal care and baseline A and E services
- Contribute to programs that will improve maternal health and make blood available and safe
## APPENDIX A

### TABLE A1  POLIO SURVEILLANCE INDICATORS 2011

<table>
<thead>
<tr>
<th>Region</th>
<th>Pop Under 15 years</th>
<th>Expected AFP</th>
<th>Reported AFP</th>
<th>AFP Discarded</th>
<th>Non-Polio AFP Rate</th>
<th>Compatible</th>
<th>Percent timely stool</th>
<th>Percent Adequate stools</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASH</td>
<td>2,191,984</td>
<td>44</td>
<td>48</td>
<td>46</td>
<td>2.09</td>
<td>1</td>
<td>93.8</td>
<td>93.8</td>
</tr>
<tr>
<td>BAR</td>
<td>1,000,430</td>
<td>20</td>
<td>35</td>
<td>28</td>
<td>2.80</td>
<td>2</td>
<td>74.3</td>
<td>71.4</td>
</tr>
<tr>
<td>CR</td>
<td>841,342</td>
<td>16</td>
<td>21</td>
<td>19</td>
<td>2.38</td>
<td>2</td>
<td>90.5</td>
<td>90.5</td>
</tr>
<tr>
<td>ER</td>
<td>1,031,025</td>
<td>20</td>
<td>25</td>
<td>20</td>
<td>2.00</td>
<td>3</td>
<td>84.0</td>
<td>84.0</td>
</tr>
<tr>
<td>GAR</td>
<td>1,959,790</td>
<td>40</td>
<td>15</td>
<td>12</td>
<td>0.60</td>
<td>1</td>
<td>80.0</td>
<td>73.3</td>
</tr>
<tr>
<td>NR</td>
<td>1,036,187</td>
<td>20</td>
<td>38</td>
<td>33</td>
<td>3.30</td>
<td>1</td>
<td>89.5</td>
<td>84.2</td>
</tr>
<tr>
<td>UER</td>
<td>435,855</td>
<td>8</td>
<td>20</td>
<td>18</td>
<td>4.50</td>
<td>2</td>
<td>90.0</td>
<td>85.0</td>
</tr>
<tr>
<td>UWR</td>
<td>291,503</td>
<td>6</td>
<td>16</td>
<td>15</td>
<td>5.00</td>
<td>1</td>
<td>93.8</td>
<td>93.8</td>
</tr>
<tr>
<td>VR</td>
<td>844,881</td>
<td>16</td>
<td>29</td>
<td>25</td>
<td>3.13</td>
<td>2</td>
<td>72.4</td>
<td>69.0</td>
</tr>
<tr>
<td>WR</td>
<td>1,143,040</td>
<td>22</td>
<td>27</td>
<td>22</td>
<td>2.00</td>
<td>2</td>
<td>77.8</td>
<td>77.8</td>
</tr>
<tr>
<td>National</td>
<td>10,775,018</td>
<td>216</td>
<td>274</td>
<td>238</td>
<td>2.20</td>
<td>17</td>
<td>84.7</td>
<td>82.5</td>
</tr>
</tbody>
</table>

### TABLE A2  MEASLES SURVEILLANCE INDICATORS 2011

<table>
<thead>
<tr>
<th>Region</th>
<th>No. of Districts</th>
<th>No. of Districts Reported</th>
<th>% District Reported</th>
<th>Number of suspected cases reported</th>
<th>Number Confirmed</th>
<th>Percentage Confirmed</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASH</td>
<td>27</td>
<td>27</td>
<td>100</td>
<td>528</td>
<td>7</td>
<td>1.3</td>
</tr>
<tr>
<td>BAR</td>
<td>22</td>
<td>21</td>
<td>95.5</td>
<td>133</td>
<td>4</td>
<td>3.0</td>
</tr>
<tr>
<td>CR</td>
<td>17</td>
<td>16</td>
<td>94.1</td>
<td>110</td>
<td>2</td>
<td>1.8</td>
</tr>
<tr>
<td>ER</td>
<td>21</td>
<td>20</td>
<td>95.2</td>
<td>218</td>
<td>6</td>
<td>2.8</td>
</tr>
<tr>
<td>GAR</td>
<td>10</td>
<td>10</td>
<td>100</td>
<td>215</td>
<td>9</td>
<td>4.2</td>
</tr>
<tr>
<td>NR</td>
<td>20</td>
<td>16</td>
<td>80.0</td>
<td>81</td>
<td>20</td>
<td>24.7</td>
</tr>
<tr>
<td>UER</td>
<td>9</td>
<td>9</td>
<td>100</td>
<td>61</td>
<td>18</td>
<td>29.5</td>
</tr>
<tr>
<td>UWR</td>
<td>9</td>
<td>8</td>
<td>88.9</td>
<td>49</td>
<td>3</td>
<td>6.1</td>
</tr>
<tr>
<td>VR</td>
<td>18</td>
<td>18</td>
<td>100</td>
<td>179</td>
<td>24</td>
<td>13.4</td>
</tr>
<tr>
<td>WR</td>
<td>17</td>
<td>17</td>
<td>100</td>
<td>170</td>
<td>27</td>
<td>15.9</td>
</tr>
<tr>
<td>Total</td>
<td>170</td>
<td>162</td>
<td>95.3</td>
<td>1744</td>
<td>120</td>
<td>6.9</td>
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</tbody>
</table>
### TABLE A3  AGE DISTRIBUTION OF CONFIRMED MEASLES CASES 2011

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Suspected Cases</th>
<th>Lab Confirmed Cases</th>
<th>% IgM Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-8 Months</td>
<td>43</td>
<td>9</td>
<td>21%</td>
</tr>
<tr>
<td>9-11 Months</td>
<td>42</td>
<td>6</td>
<td>15%</td>
</tr>
<tr>
<td>1-4 Years</td>
<td>527</td>
<td>19</td>
<td>4%</td>
</tr>
<tr>
<td>5-14 Years</td>
<td>778</td>
<td>54</td>
<td>7%</td>
</tr>
<tr>
<td>15+ Years</td>
<td>181</td>
<td>10</td>
<td>5%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1571</strong></td>
<td><strong>98</strong></td>
<td><strong>6%</strong></td>
</tr>
</tbody>
</table>

### TABLE A4  DISTRICTS REPORTING MEASLES OUTBREAKS IN 2011

<table>
<thead>
<tr>
<th>Districts</th>
<th>No. Reported</th>
<th>No. Positive</th>
<th>% Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aowin-Suaman</td>
<td>20</td>
<td>12</td>
<td>60%</td>
</tr>
<tr>
<td>Bawku</td>
<td>12</td>
<td>7</td>
<td>58%</td>
</tr>
<tr>
<td>Bawku West</td>
<td>9</td>
<td>9</td>
<td>100%</td>
</tr>
<tr>
<td>Bole</td>
<td>12</td>
<td>3</td>
<td>25%</td>
</tr>
<tr>
<td>Nkwanta</td>
<td>26</td>
<td>16</td>
<td>62%</td>
</tr>
<tr>
<td>Nkwanta North</td>
<td>3</td>
<td>3</td>
<td>100%</td>
</tr>
<tr>
<td>Sawla-Tuna-Kalba</td>
<td>8</td>
<td>5</td>
<td>63%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>90</strong></td>
<td><strong>55</strong></td>
<td><strong>61%</strong></td>
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</table>

### A5  QUALITY ASSURANCE ACTIVITIES OBSERVED BY THE OTSS TEAM IN 2011

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Percentage Score in Malaria Microscopy Tasks Performed According to Protocol</td>
<td>80% of those observed</td>
</tr>
<tr>
<td>Average Percentage Score in RDT Tasks Performed According to Protocol</td>
<td>80% of those observed</td>
</tr>
<tr>
<td>Prescriber Adherence to Negative Test Results: Proportion of Health Facilities Adhering to Negative Tests for Patients</td>
<td>65% of those observed</td>
</tr>
<tr>
<td>Proportion of Health Facilities Performing Internal Quality Assurance Tasks</td>
<td>75% of Observed</td>
</tr>
<tr>
<td>Proportion Health Facility Slides Read Correctly (Slide Cross-Checking)</td>
<td>80% Agreement</td>
</tr>
</tbody>
</table>
TABLE A6  TREND ANALYSIS - HIV TESTING AND COUNSELLING

<table>
<thead>
<tr>
<th></th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Tested (Male + Female)</td>
<td>467,935</td>
<td>865,058</td>
<td>1,063,085</td>
<td>1,151,034</td>
</tr>
<tr>
<td>Total number of Males Tested</td>
<td>84,690</td>
<td>196,342</td>
<td>22,309</td>
<td>221,202</td>
</tr>
<tr>
<td>Number of Males testing positive</td>
<td>8,017</td>
<td>10,564</td>
<td>12,896</td>
<td>14,090</td>
</tr>
<tr>
<td>Total number of Females Tested</td>
<td>383,245</td>
<td>668,716</td>
<td>840,776</td>
<td>929,832</td>
</tr>
<tr>
<td>Number of Females testing positive</td>
<td>21,025</td>
<td>26,008</td>
<td>36,760</td>
<td>42,801</td>
</tr>
</tbody>
</table>

TABLE A7  CONDOM DISTRIBUTION AND STI SERVICES

<table>
<thead>
<tr>
<th></th>
<th>Target as of December 2011</th>
<th>Results as of December 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of male and female condoms distributed to the general population</td>
<td>120,860,000</td>
<td>39,606,400</td>
</tr>
<tr>
<td>Number of patients diagnosed with STI and receiving treatment</td>
<td>142,107</td>
<td>221,903</td>
</tr>
</tbody>
</table>

TABLE A8  TREATMENT AND CARE-ART SERVICES

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Yearly Target as at 2011</th>
<th>Results as at Dec 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of people with advanced HIV infection receiving ART</td>
<td>15,058</td>
<td>14,383</td>
</tr>
<tr>
<td>Cumulative number of people with advanced HIV infection receiving ART</td>
<td></td>
<td>65,342</td>
</tr>
<tr>
<td>Cumulatively number of service delivery points providing ART</td>
<td></td>
<td>160</td>
</tr>
</tbody>
</table>

TABLE A9  HIV TESTING IN PREGNANT WOMEN 2009 - 2011

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Jan-Sept 2009</th>
<th>Jan-Sept 2010</th>
<th>Jan-Sept 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of pregnant women tested</td>
<td>280,317</td>
<td>382,263</td>
<td>451,820</td>
</tr>
<tr>
<td>No. Testing HIV positive</td>
<td>4808</td>
<td>7928</td>
<td>11,952</td>
</tr>
</tbody>
</table>
### TABLE A10  PMTCT SERVICE DATA FOR 2011

<table>
<thead>
<tr>
<th>Region</th>
<th>No. of Pregnant Women</th>
<th>ANC Registrants</th>
<th>Number Tested</th>
<th># Positive</th>
<th>% Positive</th>
<th># (%) Given ARVs</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASH</td>
<td>195,257</td>
<td>122708</td>
<td>107714</td>
<td>3391</td>
<td>3.1</td>
<td>1100 (32)</td>
</tr>
<tr>
<td>GAR</td>
<td>171,245</td>
<td>110871</td>
<td>102156</td>
<td>2268</td>
<td>2.2</td>
<td>1478 (65.2)</td>
</tr>
<tr>
<td>WR</td>
<td>102,214</td>
<td>57542</td>
<td>53964</td>
<td>1492</td>
<td>2.8</td>
<td>862 (57.7)</td>
</tr>
<tr>
<td>ER</td>
<td>95,500</td>
<td>89341</td>
<td>79880</td>
<td>2052</td>
<td>2.6</td>
<td>1715 (83.6)</td>
</tr>
<tr>
<td>NR</td>
<td>93,382</td>
<td>99191</td>
<td>86352</td>
<td>601</td>
<td>0.7</td>
<td>314 (52.2)</td>
</tr>
<tr>
<td>BAR</td>
<td>90,688</td>
<td>66,842</td>
<td>56,832</td>
<td>1414</td>
<td>2.5</td>
<td>1104 (78)</td>
</tr>
<tr>
<td>VR</td>
<td>77,492</td>
<td>44,823</td>
<td>41,663</td>
<td>683</td>
<td>1.6</td>
<td>656 (96.0)</td>
</tr>
<tr>
<td>CR</td>
<td>76,866</td>
<td>58459</td>
<td>56211</td>
<td>619</td>
<td>1.1</td>
<td>430 (69.5)</td>
</tr>
<tr>
<td>UER</td>
<td>40,612</td>
<td>34,574</td>
<td>34,069</td>
<td>311</td>
<td>0.9</td>
<td>258 (83.0)</td>
</tr>
<tr>
<td>UWR</td>
<td>26,842</td>
<td>24407</td>
<td>20465</td>
<td>183</td>
<td>0.9</td>
<td>149 (81)</td>
</tr>
<tr>
<td>National</td>
<td>970,098</td>
<td>708762</td>
<td>639803</td>
<td>13014</td>
<td>2.0</td>
<td>8066 (61.98)</td>
</tr>
</tbody>
</table>

### TABLE A11  NTP EARLY CASE DETECTION ACTIVITIES

<table>
<thead>
<tr>
<th>Region</th>
<th>Districts</th>
<th>Major activities</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAR</td>
<td>Asunafo</td>
<td>Early case detection in communities</td>
<td>87 new cases were identified and put on treatment</td>
</tr>
<tr>
<td>BAR</td>
<td>Dormaa</td>
<td>Early case detection in communities</td>
<td>19 New cases found and put on treatment</td>
</tr>
<tr>
<td>GAR</td>
<td>Ga-West</td>
<td>Early case detection in communities</td>
<td>95 New cases diagnosed and put on treatment</td>
</tr>
<tr>
<td>GAR</td>
<td>Ga-South</td>
<td>Early case detection in communities</td>
<td>155 New cases treated</td>
</tr>
<tr>
<td>ER</td>
<td>SKC</td>
<td>Early case detection in communities</td>
<td>34 New cases treated</td>
</tr>
<tr>
<td>ER</td>
<td>Akuapem South</td>
<td>Early case detection in communities</td>
<td>65 New cases treated</td>
</tr>
<tr>
<td>ASH</td>
<td>Ashanti Akim North</td>
<td>Early case detection in communities</td>
<td>112 New cases treated</td>
</tr>
<tr>
<td>ASH</td>
<td>Ahafo Ano North</td>
<td>Early case detection in communities</td>
<td>51 new cases treated</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### TABLE A12 PROPORTION OF NEWLY REPORTED CASES ATTRIBUTED TO SELECTED NCDS 2006 – 2011

<table>
<thead>
<tr>
<th>Disease</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension and other heart diseases</td>
<td>3.1</td>
<td>2.9</td>
<td>4.2</td>
<td>3.3</td>
<td>3.7</td>
<td>3.7</td>
<td>3.5</td>
</tr>
<tr>
<td>Hypertension</td>
<td>2.9</td>
<td>2.8</td>
<td>4.0</td>
<td>3.2</td>
<td>3.5</td>
<td>3.5</td>
<td>3.3</td>
</tr>
<tr>
<td>Diabetes</td>
<td>0.5</td>
<td>0.5</td>
<td>0.9</td>
<td>0.7</td>
<td>0.7</td>
<td>0.8</td>
<td>0.8</td>
</tr>
<tr>
<td>Injuries and poisonings</td>
<td>3.2</td>
<td>2.3</td>
<td>2.2</td>
<td>1.8</td>
<td>1.8</td>
<td>1.7</td>
<td>1.5</td>
</tr>
<tr>
<td>Asthma</td>
<td>0.3</td>
<td>0.2</td>
<td>0.3</td>
<td>0.3</td>
<td>0.4</td>
<td>0.4</td>
<td>0.4</td>
</tr>
<tr>
<td>Sickle cell disease</td>
<td>0.12</td>
<td>0.12</td>
<td>0.15</td>
<td>0.11</td>
<td>0.11</td>
<td>0.13</td>
<td>0.12</td>
</tr>
<tr>
<td>All new diseases</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

### TABLE A13 EXTERNAL QUALITY ASSURANCE RESULTS

<table>
<thead>
<tr>
<th>Disease</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measles</td>
<td>20/20 (100%)</td>
<td>18/20 (90%)</td>
<td>20/20 (100%)</td>
</tr>
<tr>
<td>Rubella</td>
<td>20/20 (100%)</td>
<td>19/20 (95%)</td>
<td>20/20 (100%)</td>
</tr>
</tbody>
</table>

### TABLE A14 QUARTERLY FEEDBACK ON MEASLES TESTS

<table>
<thead>
<tr>
<th>Disease</th>
<th>1st quarter</th>
<th>2nd quarter</th>
<th>3rd quarter</th>
<th>4th quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measles</td>
<td>59/60 (98.3%)</td>
<td>42/42 (100%)</td>
<td>28/28 (100%)</td>
<td>26/26 (100%)</td>
</tr>
<tr>
<td>Rubella</td>
<td>55/60 (91.6%)</td>
<td>38/42 (90.5%)</td>
<td>27/28 (96.4%)</td>
<td>24/26 (92%)</td>
</tr>
</tbody>
</table>

### TABLE A15 HALF YEARLY FEEDBACK ON YELLOW FEVER

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yellow Fever</td>
<td>28/28 (100%)</td>
<td>35/35 (100%)</td>
</tr>
</tbody>
</table>

### TABLE A16 EQA RESULTS FROM NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES (NICD) SA

<table>
<thead>
<tr>
<th>Test</th>
<th>2011 (1st survey)</th>
<th>2011 (2nd survey)</th>
<th>2011 (3rd survey)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TB</td>
<td>100%</td>
<td>100%</td>
<td>Results not ready</td>
</tr>
<tr>
<td>HIV</td>
<td>100%</td>
<td>Results not ready</td>
<td>Results not ready</td>
</tr>
</tbody>
</table>
## TABLE A17  SUMMARY OF MALARIA MORBIDITY AND MORTALITY  2011

<table>
<thead>
<tr>
<th>Patients Categories</th>
<th>Number Reported</th>
<th>Proportion Attributable to Malaria</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OPD</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All OPD Cases</td>
<td>10,313,505</td>
<td></td>
</tr>
<tr>
<td>All Suspected Malaria Cases</td>
<td>4,154,261</td>
<td>40.2%</td>
</tr>
<tr>
<td>Pregnant Women with suspected malaria</td>
<td>94,196</td>
<td>17.2%</td>
</tr>
<tr>
<td>Under 5 years with suspected malaria</td>
<td>1,082,673</td>
<td>52.14%</td>
</tr>
<tr>
<td><strong>ADMISSIONS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All Admissions</td>
<td>777,916</td>
<td></td>
</tr>
<tr>
<td>Admissions attributed to malaria.</td>
<td>273,880</td>
<td>35.2%</td>
</tr>
<tr>
<td>Pregnant Women admitted due to malaria</td>
<td>19,540</td>
<td>14.8%</td>
</tr>
<tr>
<td>Children Under 5 years admitted due to malaria</td>
<td>129,110</td>
<td>37.6%</td>
</tr>
<tr>
<td><strong>DEATHS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total deaths</td>
<td>17,981</td>
<td></td>
</tr>
<tr>
<td>All malaria deaths</td>
<td>3,259</td>
<td>18.1%</td>
</tr>
<tr>
<td>Pregnant Women- malaria deaths</td>
<td>62</td>
<td>6.8%</td>
</tr>
<tr>
<td>Under 5 years malaria deaths</td>
<td>1,539</td>
<td>29.5%</td>
</tr>
<tr>
<td><strong>MALARIA CASE FATALITY RATE</strong></td>
<td>(Under 5 years death due to malaria/Under 5 years admitted due to malaria)</td>
<td>1.2</td>
</tr>
</tbody>
</table>

## TABLE A18  RESULTS FROM MICS SURVEY 2011

<table>
<thead>
<tr>
<th>No.</th>
<th>Indicators</th>
<th>Percentage Coverage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ITNS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>% of households with at least one mosquito net of any type</td>
<td>51.4</td>
</tr>
<tr>
<td>2</td>
<td>% of households with at least one insecticide-treated net (ITN)</td>
<td>48.9</td>
</tr>
<tr>
<td>3</td>
<td>% of children under five years of age sleeping under any type of mosquito net the previous night</td>
<td>41.6</td>
</tr>
<tr>
<td>4</td>
<td>% of children under five years of age sleeping under an insecticide-treated mosquito net (ITN) the previous night</td>
<td>39.0</td>
</tr>
</tbody>
</table>
### Malaria in Pregnancy

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>% of women who received IPTp (treatment with at least 2 doses of SP/Fansidar) during pregnancy</td>
<td>67.1</td>
</tr>
<tr>
<td>11</td>
<td>% of pregnant women sleeping under an ITN the previous night</td>
<td>32.6</td>
</tr>
</tbody>
</table>

### KAP

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>% of mothers of children under 5 years who know the causes of malaria (able to identify mosquito bite as the cause of malaria)</td>
</tr>
</tbody>
</table>

### Malaria Biomarkers

#### Parasite Prevalence in Children 6-59 months by Region

<table>
<thead>
<tr>
<th>Regions</th>
<th>RDT+ Microscopy+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Western</td>
<td>56.3 36.5</td>
</tr>
<tr>
<td>Central</td>
<td>53.1 31.8</td>
</tr>
<tr>
<td>Greater Accra</td>
<td>10.1 4.1</td>
</tr>
<tr>
<td>Volta</td>
<td>32.5 17.3</td>
</tr>
<tr>
<td>Eastern</td>
<td>40.3 21.5</td>
</tr>
<tr>
<td>Asante</td>
<td>50.6 22.5</td>
</tr>
<tr>
<td>Brong-Ahafo</td>
<td>58.7 37.1</td>
</tr>
<tr>
<td>Northern</td>
<td>69.7 48.2</td>
</tr>
<tr>
<td>Upper East</td>
<td>77.1 43.7</td>
</tr>
<tr>
<td>Upper West</td>
<td>80.1 50.7</td>
</tr>
<tr>
<td>Total</td>
<td>47.7 27.5</td>
</tr>
</tbody>
</table>

#### Prevalence of Severe Anemia in Children 6-59 months by Region

<table>
<thead>
<tr>
<th>Regions</th>
<th>Severe anemia (Hb &lt; 8.0 g/dL)</th>
<th>Severe anemia (Hb &lt; 7.0 g/dL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Western</td>
<td>4.9</td>
<td>0.8</td>
</tr>
<tr>
<td>Central</td>
<td>7.0</td>
<td>3.6</td>
</tr>
<tr>
<td>Greater Accra</td>
<td>2.8</td>
<td>0.5</td>
</tr>
<tr>
<td>Volta</td>
<td>5.7</td>
<td>1.1</td>
</tr>
<tr>
<td>Eastern</td>
<td>1.6</td>
<td>0.2</td>
</tr>
<tr>
<td>Asante</td>
<td>5.0</td>
<td>1.7</td>
</tr>
<tr>
<td>Brong-Ahafo</td>
<td>9.6</td>
<td>2.2</td>
</tr>
<tr>
<td>Northern</td>
<td>19.1</td>
<td>7.7</td>
</tr>
<tr>
<td>Upper East</td>
<td>15.8</td>
<td>6.4</td>
</tr>
<tr>
<td>Upper West</td>
<td>15.9</td>
<td>7.2</td>
</tr>
<tr>
<td>Total</td>
<td>7.4</td>
<td>2.5</td>
</tr>
</tbody>
</table>
APPENDIX B

FIG B1   PROPORTION OF PREGNANT WOMEN WHO RECEIVED AT LEAST 2 DOSES OF IPT-SP IN 2011

Proportion of Pregnant Women on 2 doses of SP, by Regions in 2011

FIG B2   MALARIA CASE FATALITY RATE AMONG UNDER-5 YEAR OLDS
FIG B3  TOTAL MALARIA CASES AND PROPORTION OF MALARIA CASES CONFIRMED AT OPD , 2009 – 2011

Comparing Proportion of OPD cases Attributed to Malaria and % of the cases Tested from 2009 to 2011

<table>
<thead>
<tr>
<th></th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of OPD malaria cases tested</td>
<td>14%</td>
<td>14.70%</td>
<td>18.90%</td>
</tr>
<tr>
<td>% OF MALARIA Cases at OPD</td>
<td>32.70%</td>
<td>38.40%</td>
<td>40.20%</td>
</tr>
</tbody>
</table>

FIG B4  TOTAL DEATHS ATTRIBUTABLE TO MALARIA - 2011

Total Deaths Attributable to Malaria in 2011

NUMBER OF DEATHS

REGION

ASH  BAR  CENTRAL  EAS  GAR  NOR  UER  UWR  VOLTA  WEST

TOTAL DEATHS
FIG B5 NUMBER OF ADMITTED CASES ATTRIBUTABLE TO MALARIA

NUMBER OF ADMITTED CASES ATTRIBUTED TO MALARIA FOR 2011 BY REGIONS

FIG B6 ANNUAL INCIDENCE OF GUINEA WORM DISEASE, 1989 – 2011*

*As of Dec 2011
Performance in Occupational Health and Safety

FIG B8 OVERALL PERFORMANCE RATING SCORES IN OHS BY REGIONS
FIG B9 OVERALL PERFORMANCE RATING SCORES IN HCWM BY REGIONS