INTEGRATED HIV/AIDS, TUBERCULOSIS AND MALARIA (ATM)

RESPONSE RESOURCE KIT

FOR CIVIL SOCIETY ORGANISATIONS IN NIGERIA

MODULE 1

Investing in our future
The Global Fund
To Fight AIDS, Tuberculosis and Malaria

actionaid nigeria

ACOMIN
Civil Society in Malaria control, Immunization and Nutrition

Stop TB

MODULE 1
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Overview on HIV/AIDS/ TB and Malaria

MODULE 1
OVERVIEW OF HIV/AIDS, TB AND MALARIA

Objectives

At the end of the training, participants are expected to:

- Understand the basic information on HIV and AIDS, Tuberculosis and Malaria in order to contribute to effective programming and the delivery of quality integrated services on these three diseases in Nigeria;
- Appreciate the basic information on HIV/AIDS, Tuberculosis and Malaria to contribute to increased ATM interventions and services uptake through the Primary Health Care Centres (PHCs) in Nigeria;
- Comprehend the basic information on HIV/AIDS, Tuberculosis and Malaria to participate actively and effectively in the multi-sectoral response across the three disease areas - AIDS, Tuberculosis and Malaria in Nigeria;
- Have adequate information on HIV/AIDS, Tuberculosis and Malaria for effective prioritisation of the nation's ATM needs and the actual implementation of the prioritised interventions particularly at the community level;
- Know enough on HIV/AIDS, Tuberculosis and Malaria for effective policies and institutional frameworks formulation for integrated ATM response in Nigeria;
- Understand the dynamics of HIV/AIDS, Tuberculosis and Malaria epidemics enough to cause the CSOs to contribute to an enabling health, social and political climate of reduced vulnerability to the three diseases through target groups' appreciation of interventions and ownership of same.

Training Contents

1.1 HIV AND AIDS

AIDS stands for Acquired Immune Deficiency Syndrome. It is a pattern of devastating infections caused by the Human Immunodeficiency Virus (HIV). The virus attacks and destroys certain blood cells that are essential to the body's immune system. When HIV infects a cell, it combines with that cell's genetic material and may lie inactive for years.

Most people infected with HIV are still healthy and can live for years with no symptoms or any major illnesses. They are infected with HIV, but they do not have AIDS. After a variable period of time, the virus becomes activated and then leads progressively to the serious infections and other conditions that characterise AIDS.

Although there are treatments that improve the quality of life of an infected person through a decrease in the rapid progression of the disease , AIDS is a chronic disease and the cure remains unknown. Research continues on possible new prevention technologies and, ultimately, a cure. For the moment, however, prevention of transmission remains the only method of control.

The Route of Infection in Adults

HIV targets two groups of white blood cells called CD4+ lymphocytes and monocytes/ macrophages. Normally, CD4+ cells and macrophages help recognise and destroy bacteria, viruses or other infectious agents that invade a cell and cause diseases. In an HIV-infected person, the virus kill the CD4+ lymphocytes, while the macrophages act as reservoirs, carrying HIV to a number of vital organs.

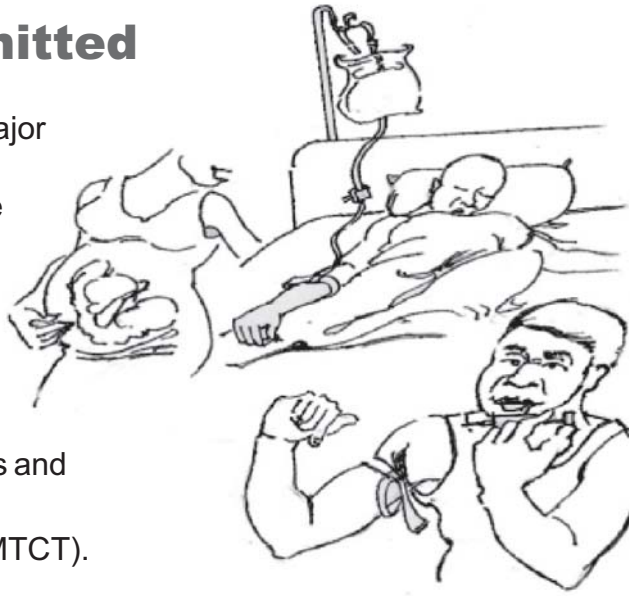
HIV attaches itself to the CD4+ lymphocyte and makes its way inside. This causes the cell to produce more HIV but, in doing so, the cell is destroyed. As the body's CD4+ cells are depleted, the immune system weakens and is less able to fight off viral and bacterial infections. The infected person becomes susceptible to a wide range of diseases called “opportunistic” infections. These “opportunistic” infections include pneumocystis carinii pneumonia, which rarely occurs in a person with normal immune systems.

Tuberculosis (TB) poses a particular threat to HIV-positive people, especially in areas of the world where both TB and HIV infections are increasing at alarming rates. Millions of TB carriers who would otherwise have escaped active tuberculosis are now developing the disease because their immune systems are under attack from HIV. TB also progresses faster in HIV-infected persons and is

more likely to be fatal if undiagnosed or untreated. TB is now a leading killer of HIV-infected Africans.

HIV-infected persons are also more susceptible to otherwise rare cancers such as Kaposi's sarcoma; a tumour of the blood vessels or lymphatic vessels. In general, about 50 percent of HIV-infected adults are likely to develop AIDS within 10 years after first becoming infected. The good news is that early treatment with improved drugs is significantly prolonging life for Persons Living with HIV and AIDS.

How HIV is transmitted



To date, there are only four major modes of transmission:

- Unprotected sexual intercourse (anal and/or vaginal) with an infected person;
- Transfusion of Contaminated blood and blood products; tissues and organs
- Contaminated needles, syringes and other piercing instruments; and
- Mother- to- child transmission (MTCT).

History of HIV and AIDS

In the early 1980s, a pattern of highly unusual infections in otherwise healthy young adults emerged. This pattern, or syndrome, was caused by an unknown entity that apparently attacked the body's immune system. It became known as AIDS.

Between 1983 and 1984, researchers isolated a new virus called HIV, the cause of AIDS. This made possible a blood test for antibodies to the virus. HIV was found to be an infectious agent known as a retrovirus. Different retroviruses were found in some animals but, until that point, they were rare in humans. HIV may have been infecting some human populations relatively mildly for more than 20 years. Since the discovery of HIV, several strains of the virus have been identified.

In 1985, a related virus was found in parts of West Africa and was called HIV-2 to distinguish it from the earlier virus (HIV-1). The pattern of illness is similar for both HIV-1 and HIV-2.

In the early 1980s, only about 100,000 adults worldwide were thought to have been infected with HIV. As at the end of 1998, the number of adults and children living with HIV or AIDS rose to more than 33.4 million. The statistics however keep changing and there have been intensified interventions in many parts of the world, including Nigeria.

In the year 1986, the Federal Ministry of Health in Nigeria reported the first case of AIDS diagnosis in the country. Between 1986 and 2001, the prevalence of the epidemic had risen steadily from 0.1% to 5.8%, with about 3.5 million Nigerians reported to have been infected with the virus. By 2001, the prevalence rose to 7.7% in the South-South; 5.8% in the South-East; 5.5% in the North-Central 5.4% in the North-East; 4% in the South-West; and 3.3% in the North-West geo-political zones of the country, with varying prevalence ranging from about 2% to almost 20% among different groups in different states (NACA Reports). Findings from the 2008 National HIV Sero-Prevalence Sentinel Survey among the Ante Natal Clinic Attendees reveal that the current national prevalence rate is 4.6%, while 2.95 million are living with HIV. Annual AIDS death is estimated at 280,000.

Also by 2001, it became clear that there was an increasing reversal in the conventional dictum, which regarded the HIV and AIDS epidemic as an urban area problem. From a generally perceived lower prevalence rate in the rural areas, HIV and AIDS in the rural areas in the South-South, North-East and South -West were seen to be higher than in the urban areas of the same zones, while significant increase were seen in the other zones too.

Some of the factors identified as responsible for this paradigm shift included:

- Dearth of adequate and correct information on all the aspects of the epidemic in the rural areas;
- Lack of appropriate interventions to prevent and mitigate the impact of the epidemic in the rural areas;
- Persistence of socio-cultural behaviours such as early marriage, forced marriage, gender inequalities, sexual partner inheritance, etc, in the rural areas;
- Increasing economic hardship with its concomitant promotion of risky behaviours including sex work;
- Increasing urban drift of the most productive people in the rural areas;
- Denial of the basic facts about HIV and AIDS epidemic, and, sometimes preference for adherence to superstitions and heresies;
- Poor care and support systems in the urban areas sometimes leading to return of many HIV infected people to the rural areas;
- Persistence of stigmatisation and discrimination in many rural areas;
- Ignorance and illiteracy.

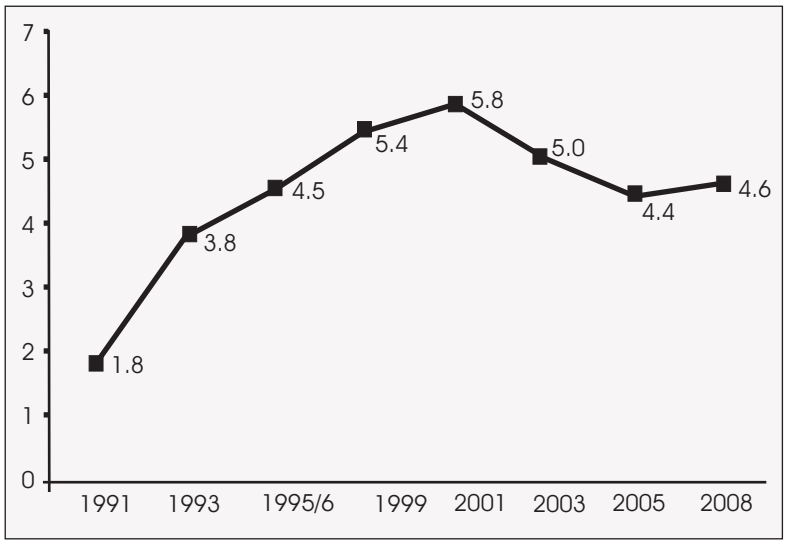
After over 20 years of its advent, HIV and AIDS has killed more people than any other infectious diseases, and is spreading at an alarming rate. Already, some 36.1 million people are infected worldwide. There are 15,000 new infections each day 95 percent of these infections are in developing countries. In sub-Saharan Africa, the situation is especially acute. Some 21.8 million people have already died from the disease, leaving behind about 13.2 million AIDS orphans (UNAIDS Reports).

The crisis of HIV and AIDS is the largest challenge facing the African continent today. The African continent is the worst devastated by the AIDS pandemic. In 2005, two thirds of the estimated 40.3 million people living with HIV globally, 85.3% of the 4.9 million persons newly infected that year and 77.4% of the 3.1 million deaths due to HIV and AIDS were from the region. Combating HIV requires a high level of commitment, vision and leadership.

The Special Summit of the African Union on HIV and AIDS, Tuberculosis and Malaria (ATM) has been convened to review progress made in achieving the targets set by Africa's Heads of State and government in the Abuja Summit on Malaria of 2000 and the Summit on HIV and AIDS, Tuberculosis (TB) and Other Related Infectious Diseases (ORID) of 2001. At the Abuja Summit of 2001, African leaders recognised HIV and AIDS as compounding poverty and impeding development in many countries. HIV and AIDS was considered a state of emergency on the continent and the African leaders committed to place the fight against HIV at the forefront and as the highest priority issue in their respective national development plans.

Since the 2001 Declaration, most countries have put in place multi-sectoral national HIV and AIDS programmes for the coordination of the response and donor

Figure 1
Trends in National HIV Sero-Prevalence Rate, Nigeria, 1991-2008



Source: NACA, 2009

support. In addition, many African leaders are now strong public advocates for action against AIDS in their countries and there has been an unprecedented increase in both local and international funding towards combating the disease, just until recently when a decline in funding resulted from global economic recession.

Although AIDS responses have grown and improved considerably in the last few years, they still do not match the scale or the pace of a steadily worsening epidemic. In 2005, Africa was home to over 25 million people living with HIV. Two thirds of all people living with HIV in the world are in Africa, as are more that 75% of all women with HIV. An estimated 2.4 million people died of HIV-related illnesses in Africa in 2005, while a further 3.2 million became newly infected with HIV. Half of the new infections occur among young people in the 15-24 years age group with young girls being more at risk than boys of the same age group.

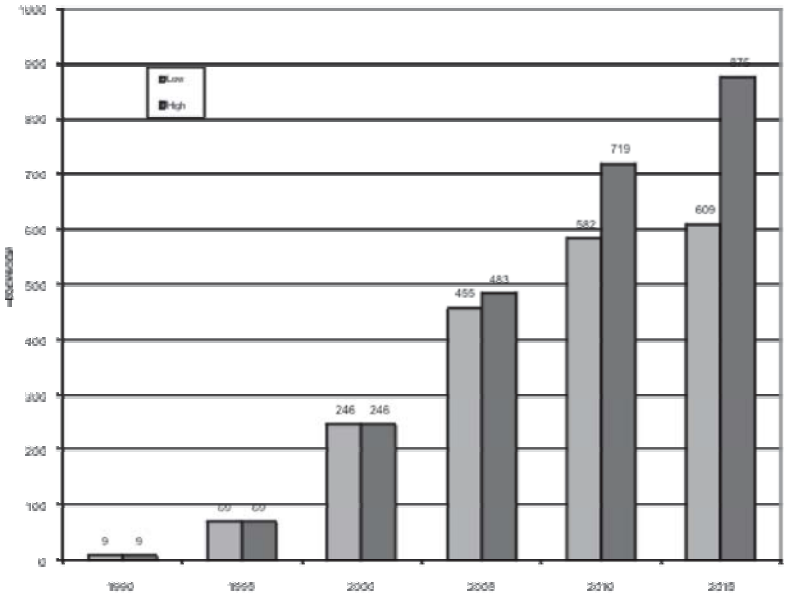
The HIV epidemic continues to put a strain on the existing weak health resources and systems in Africa. In addition, the continent is subject to a high degree of disruption from mass displacements due to conflicts and migration in search of employment and opportunity for better livelihood. Also worrisome is the increasing vulnerability of women to HIV infection and the increasing numbers of orphaned and vulnerable children as a result of AIDS. On the whole, Africa is the continent least placed to respond to the crisis of HIV and AIDS.

AIDS epidemic in Nigeria have significant impact on the county's population. The epidemic will impact on the population directly through deaths of infected individuals and in addition slow the population growth and alter its structure. Nigeria's population, which currently stands at about 140 million, is expected to rise to 167 million by 2015 based on the national growth rate of 2.8% in the absence of the HIV and AIDS epidemic. However, this is unlikely to happen because of deaths from the epidemic, and the lower fertility in women caused by HIV. Current projections put the population of the country in 2015 at about 155 million people because of the emerging AIDS epidemic.

Out of the 3.5 million people living with HIV and AIDS in Nigeria in 2001, 170,000 adults (15 49) and 61,000 children (0 14) died from the disease according to figures published by UNAIDS. The effect of HIV on the population structure will be more dramatic, with relative decline in the number of people aged over 25 years and under five years. Over time, these cohorts will move up the age pyramid and so, with increased mortality and reduced births, the structure of the age pyramid will change with more people in the over 60 brackets and less people in the 30-40 and 40-50 age brackets. Many observers are of the view that this figure is very conservative given rapid expansion of the epidemic in all zones of the country.

The number of new AIDS cases developing each year among those persons living with HIV infection is shown in the chart below:

New AIDS cases by year (1990 to 2015)



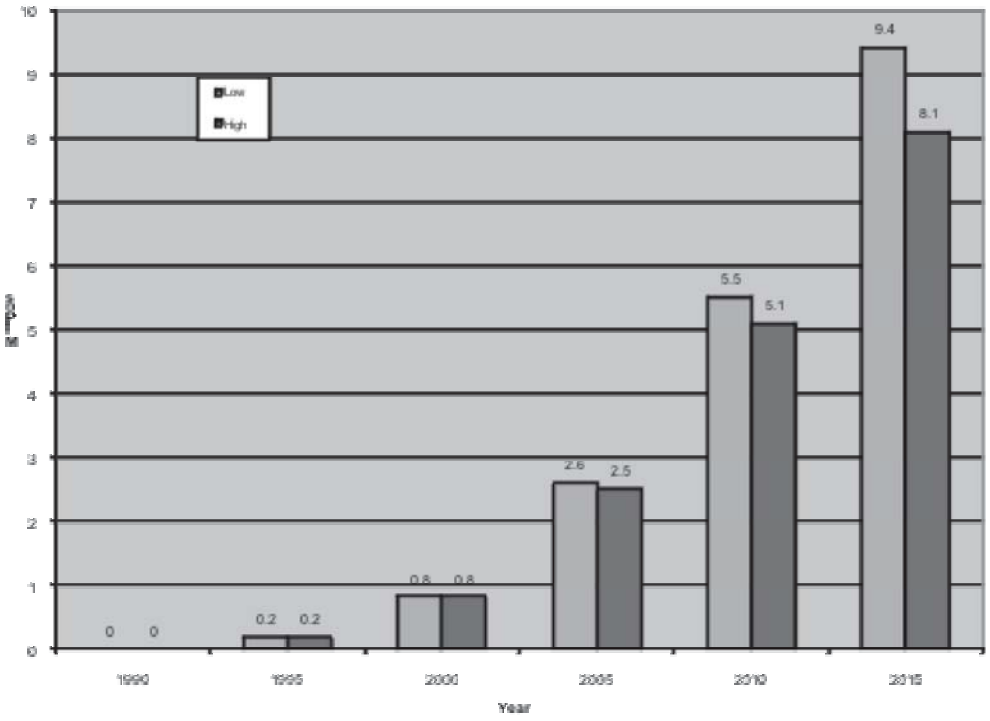
The number of new cases occurring in future years is a reflection of the present number of individuals already infected by HIV, but who have not yet developed the disease and the number of persons who will develop the disease in the future. This is where the momentum of the epidemic exists. Even if no other persons were to get infected, those already infected will eventually develop the disease. The number of new AIDS cases per year in 2005 is expected to rise to between 455 000 and 483 000 cases per year in the two scenarios. Similarly, this number will rise to between 609 000 and 875 000 AIDS cases per year by 2015.

Due to growth size of the epidemic, the number of AIDS cases, as well as the number of AIDS deaths per year, increases yearly. The increase in number is exponential. In 1995, only about 50 000 persons died of AIDS; by 2000, the number had risen to 209 000. It was projected that the number of yearly death could rise to 700 000 by 2010 under the high scenario, and to between 600 000 and 850 000 persons per year by 2015, depending on the scenario. Even if the epidemic is brought under control, we can still expect the number of yearly AIDS deaths to rise as persons already infected with the disease start to manifest the disease and die as a result of it. This will occur barring any new, affordable treatment regimen that becomes available. Even if the epidemic is curtailed today, plans will have to be made for many HIV-infected people who will require health care and support.

The epidemic will increase the death rate at all ages. The impact will be most severe among adults in their prime working ages and among children under the age of 5. Without AIDS, we should expect only a slight increase in the number of deaths per year, mainly due to the increase in the size of the population. The crude death rate in Nigeria is 14 per 1000, which implies approximately 1.65 million deaths annually. However, the number of deaths amongst persons in the 15-49-year-old age group is usually small, because this is usually healthiest fraction of the population.

Based on projections of new AIDS cases, the cumulative deaths toll will be high. The chart below shows the cumulative number of deaths from AIDS since the beginning of the epidemic in 1990s and projected figures for the next 10 years. The number of cumulative deaths is an indicator of the severity of the epidemic in Nigeria.

Chart on the cumulative deaths due to AIDS (1990 to 2015)



The demographic impact of AIDS is unique for two reasons. First, unlike most other causes of death, AIDS will continue to rise in the coming years as a result of infections that have already occurred. Second, HIV infection is highest in young women and men in their productive years, including those in the best-educated and skilled sectors of population, as well as women of childbearing age, together with attendant transmission to children.

One dramatic impact of death due to AIDS is the resulting decline in life

expectancy. Life expectancy in Nigeria was said to be about 53.2 years in 1996. In countries with a low life expectancy at birth of below 60 years, the United Nations anticipates an average increase of about 2 years in life expectancy at birth after every 5-calendar years as the life expectancy increases, the anticipated improvement drops from lower than 2 years. Using these estimates, the effect of HIV and AIDS on a country's life expectancy can be studied.

The impact of HIV and AIDS on life expectancy at birth is felt through the various age groups that are most affected by HIV and AIDS. Infants who are born HIV positive, or who develop HIV through transmission from their mothers, have a highly shortened life-span due to the shortness of the incubation period in this age group (normally around one year). Most infections occur, however, among those in their early to mid 20s in Nigeria, which means, with a 10-year incubation period they will most probably die in their early to mid 30s. Although both men and women are vulnerable to infection and disease, the impact of HIV and AIDS affects the two sexes differently. Women are two to four times more vulnerable to HIV infection than men during unprotected intercourse because of the larger surface areas exposed to contact. Similarly, women are more vulnerable to other STIs the presence of which greatly enhances the risk of HIV infection. STIs that bring on recognisable symptoms in men are often asymptomatic in women, and women attain high HIV infection levels at notably younger ages than young men. The impact of the disease on women is multidimensional. Care of the sick continues to be a responsibility of the women within the family. Women, also, are the immediate nurturers of orphaned children, many of whom are survivors of AIDS-affected households. Girls in the household also share or totally assume care-giving responsibilities for siblings and ailing parents, sometimes leaving school early in order to shoulder these responsibilities.

Gender inequalities, which exist within the society, provide an advantage to grow. On the average, women are more subject to deprivations and are poorer than their male counterparts. Their lower status decreases their rights to make choices including those related to their health, thus their susceptibility to sexually transmitted infections including HIV is higher. This 'inferior' status of women makes it more difficult for HIV infected women to seek care and to fight the ensuing discrimination and stigma associated with being infected.

Some of the factors identified as responsible for the impact of HIV and AIDS on the human and demographic structures in most rural communities of the society are similar to those that are responsible for the spread of the epidemic elsewhere. They are:

- Low social/religious status of women;

- Poor access to information and treatment;
- Poor economic power;
- Cultural bias against women;
- Low economic and political empowerment of women;
- Lack of reproductive right among women;
- Early marriage;
- Inability to negotiate safe sex;
- Poor education;
- High level of illiteracy of women especially in the northern states;
- Violent abuse/rape of women;
- Poor legislation on women's rights;
- No female condom;
- Widowhood and inheritance rights;
- Many children and youth not in school;
- Poor role models of adults in society;
- Inadequate funding of youths related STD/HIV and AIDS programmes;
- Sexual harassment/abuse in school;
- Lack of social welfare packages to the youths;
- Increasing indiscipline in the society;
- Lack of youth friendly health care services counselling facilities;
- Poor recreational facilities;
- Negative peer pressure;
- Increasing IV and non-IV drug use among youths;
- Non implementation of laws and rights of children/youths;
- Decreasing parental supervision of youths;
- Lack of political will.

The demographic impact of HIV and AIDS epidemic is widespread over the entire population in many developing countries, including Nigeria. Women and children however suffer more damaging impact as they are in the first place more vulnerable and are also less likely to harness resources available for coping with the impact of the epidemic. The rural dwellers also have much less options in coping with the impact of the epidemic than the urban dwellers due to uneven distribution of interventions, which are more concentrated in the urban areas, across the country.

The movement towards “Universal Access to HIV prevention, treatment, care and support by 2010”, is the main evolving global partnership framework for action to help countries scale up their national HIV response in the context of Millennium Development Goal 6 which aims at halting and beginning to reverse the spread of HIV and AIDS by 2015. Priority issues in developing a framework for universal access are as follows:

- Financing for scaling up HIV/AIDS responses;
- Human resource capacity;
- Health and social service systems constraints;
- Affordable commodities and low-cost technologies; and
- Human rights, stigma and discrimination, and gender equity.

Some African States have been mobilised against HIV, and there have been significant achievements at the country level. According to the African Union Progress Report on the Implementation of the Plans of Action of the Abuja Declarations for HIV and AIDS, Tuberculosis and Malaria, 85% of countries in Africa have established national coordinating bodies

Fifty percent of the AU countries have declared AIDS as an emergency in their countries. Almost all the Southern African countries have made the relevant declarations compared to a fifth or less in other regions. States have also developed national strategic frameworks and plans, which are now being implemented.

Resources targeted towards prevention, care and support have also been mobilised at country level and are being scaled-up at the regional level. The inflow of bilateral and multilateral funds for HIV prevention and control activities into the region has significantly improved until the recent global economic meltdown. For example, as of November 2005, the Global Fund disbursed 323 grants to combat HIV/AIDS, TB and Malaria in 130 countries. In some countries, World Bank's Multi-Country AIDS Programme (MAP), Treatment Acceleration Programme (TAP) and US PEPFAR have dramatically increased financial resources for expanded HIV services. In addition, there is evidence of the willingness of developed countries to increase development assistance to Africa through Poverty Reduction Strategic Plans (PRSPs), the extended Highly Indebted Poor Countries (HIPC) initiative and the debt cancellation announced by the G8, the World Bank and the International Monetary Fund (IMF).

At the Abuja Summit, African governments committed themselves to allocating at l5% of their national budgets to health. So far, only about 33% of the AU countries have allocated 10% or more of their national resources to health.

Through Global Fund supported programmes, 384,000 people have begun Antiretroviral (ARV) treatment and since the 2001 Abuja and UN declarations of Commitment, the '3 by 5' initiative, launched by WHO and UNAIDS, has helped to mobilise and support governments and their partners to scale up access to treatment. However, despite the considerable progress made in ART scale up, there is still a large unmet need. Of the estimated 4.7 million PLHIV needing

antiretroviral (ARV) drugs in Africa, 20% received treatment by the end of 2005. Three countries (Botswana, Namibia, and Uganda) had reached the target of treating 50% of PLWHIV needing ART by end 2005. Moreover, an estimated 250,000 to 300, 000 deaths were averted globally in 2005 because of expanded access to ARV.

Generally in Africa, prevention and treatment interventions are concentrated in urban areas and not focusing enough on vulnerable groups resulting in limited coverage. Fewer than 20% of young women aged 15 to 24 years have "comprehensive HIV and AIDS knowledge". Only 8% of out-of- school youth and about one third of in-school youth have access to prevention programmes. Fewer than one in twelve sex workers and their clients are targeted by behavioural interventions. Coverage of VCT and Prevention of Mother-to-Child transmission (PMTCT) services remain among the lowest at 7% and 5% respectively. In a reported population survey, less than 50% of women had used a condom in the last casual sexual relation.

Linking treatment and prevention can produce synergy to mitigate the impact of HIV on individuals, communities and systems. Decentralised services, capacity building, effective procurement and monitoring systems, community mobilisation and long-term financing are critical to sustain ART scale-up. Cost-recovery policies for ART at the point of service remain a barrier to access for poor people. As ART becomes more readily available, systems for HIV drug resistance surveillance and monitoring must be strengthened.

In fast-tracking the interventions to curtail the spread and impact of HIV and AIDS epidemic in the developing countries, certain measures are imperative, they are:

- More funds needs to be made available for programmes aimed at preventing the epidemic from spreading further and for treatment and care for those living with the disease;
- Efforts should be made to reduce dependence on external funds which may be unpredictable or unsustainable;
- Health systems must be well developed on the African continent;
- Services and interventions must be structured to reach the people in need at all times wherever they may be. Coverage with services remains inequitably distributed to the disadvantage of rural communities, marginalised and hard to reach communities. Scaling up interventions to ensure countrywide coverage of all segments of the population is a major challenge.

Polices and legislation protecting the human rights of PLWHIV and PABA must be

promulgated and/or adopted at all levels. AIDS-related stigma and discrimination are major obstacles to progress and often exclude people who need help from being able to get it. All too often, at home, in the workplace, among friends, and from some health care providers, people living with, or perceived as living with HIV, face abuse, exclusion and denial of care. This should also address hostility towards the people most vulnerable to HIV infection. Also, the high vulnerability of women and girls, which is not currently being addressed in existing programmatic interventions in many places, needs consideration. This legislative and/or policy interventions should address:

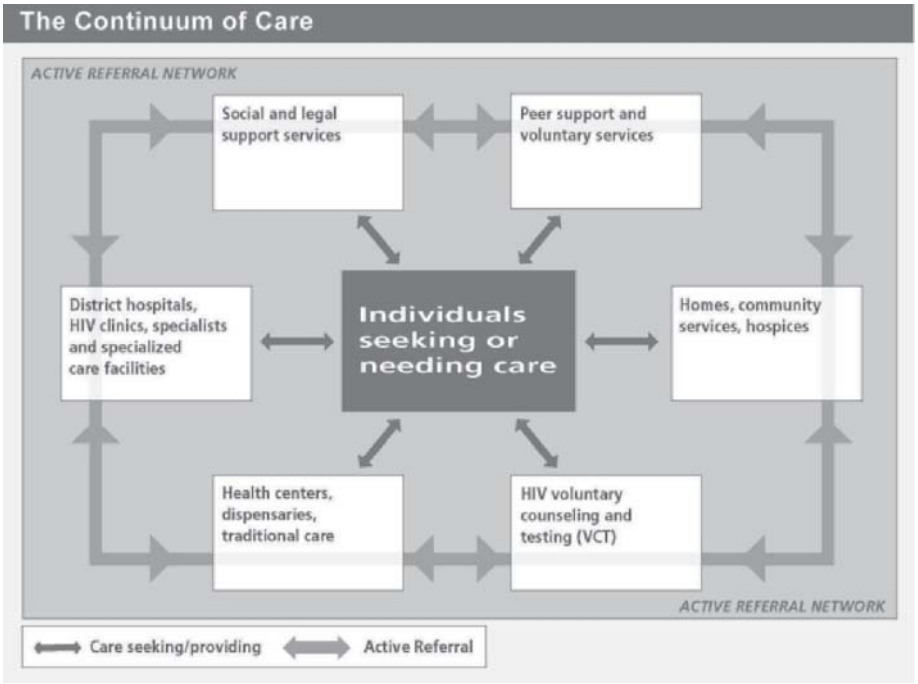
- Empowering inclusive national leadership and ownership;
- Alignment and harmonisation;
- Reform for a more effective multilateral response;
- Accountability and oversight functions;
- Provide a framework for coordinating and harmonising regional and national approaches and facilitating information-sharing to strengthen regional management capacity in HIV and AIDS;
- Advocate for more coordination and harmonisation in terms of a single regional and country level framework and strategic thinking for the activities of stakeholders and a single system for multi-sectoral, multilevel monitoring and evaluation;
- Establish networks and linkages to pool resources in horizontal South-South technical, political and cultural collaboration in HIV and AIDS;
- Re-invigorate pre-service, in-service and post-service training programmes at regional and sub-regional levels and on a multi-sectoral basis;
- Apply information technology to the expansion of educational and other social opportunities through innovative learning methodologies;
- Foster sensitivity to the planning/implementation and governance/accountability issues connected to the AIDS response by targeting top-to bottom-level political and industrial leadership for training and capacity building;
- Transfer lessons from its accomplishments to the management of other related infectious diseases;
- Promote research to facilitate evidence based programming;
- Increase in the level of domestic resources committed to HIV and AIDS and align national budgets to the national AIDS plans, which includes balanced allocation between prevention, treatment, care and support; and simplification of financial procedures;
- Generate new national and regional resources in the HIV-AIDS response, including mutual insurances, solidarity funds, national levies on various services and merchandise;
- Negotiate for debt cancellation and the availability of grants at national and

regional level that would go specifically to finance HIV services in prevention, treatment, care and support;

- Massively scale up service delivery systems by enhancing training, sector-wide solutions to retention, and effective and innovative use of available human resources, including those offered by civil society, and by making such services responsive and accessible to all communities, without sacrificing quality. Such scale-up must be based on costed plans linked to targets and timelines;
- Strengthen multi-sector coordination, oversight, and foster good management across all sectors;
- Support Regional Economic entities to set up regional and national bulk purchasing, technology transfer, south-south collaboration and sub-regional production of AIDS-related medicines and commodities (e.g. male and female condoms), including support in using Trade Related Intellectual Properties (TRIPS) flexibilities;
- Accelerate research on HIV and AIDS;
- Reduce stigma and discrimination through social mobilisation, using government, media, educational, community and religious leaders and increase the visibility, involvement and empowerment of people living with HIV and other vulnerable groups;
- Encourage sharing of best practices;
- Support people to exercise their right to know their HIV status without fear of discrimination and expand opportunities for counselling and testing and access to ARVs while preserving confidentiality;
- Promote a supportive environment, including enacting or repealing laws and policies related to gender and human rights, and strengthening implementation of relevant laws, jurisdictions and policies, in line with the AU framework on human rights and HIV and AIDS;
- Promote legal and programmatic measures to address the high vulnerability of women and girls;
- Use legislations to support essential policy actions for HIV prevention, viz:
- Ensure that human rights are promoted, protected and respected and that measures are taken to eliminate discrimination and combat stigma;
- Build and maintain leadership from all sections of society, including governments, affected communities, non-governmental organisations, faith-based organisations, the education sector, media, the private sector and trade unions;
- Involve people living with HIV, in the design, implementation and evaluation of prevention strategies, addressing the distinct prevention needs;
- Address cultural norms and beliefs, recognising both the key role they may play in supporting prevention efforts and the potential they have to fuel HIV transmission;

- Promote gender equality and address gender norms and relations to reduce the vulnerability of women and girls, involving men and boys in this effort;
- Promote widespread knowledge and awareness of how HIV is transmitted and how infection can be averted;
- Promote the links between HIV prevention and sexual and reproductive health;
- Support the mobilisation of community-based responses throughout the continuum of prevention, care and treatment;
- Promote programmes targeted at HIV prevention needs of key affected groups and populations;
- Mobilising and strengthening financial, human and institutional capacity across all sectors, particularly in health and education;
- Review and reform legal frameworks to remove barriers to effective, evidence-based HIV prevention, combat stigma and discrimination and protect the rights of people living with HIV or vulnerable or at risk to HIV;

Ensure that sufficient investments are made in the research and development of, and advocacy for, new prevention technologies.



Use legislations to support essential programmatic actions for HIV prevention, viz:

– Prevent the sexual transmission of HIV;
– Prevent mother-to child transmission of HIV;
– Prevent the transmission of HIV through injecting drug use, including harm-reduction measures;
– Prevent HIV transmission in healthcare settings by ensuring the

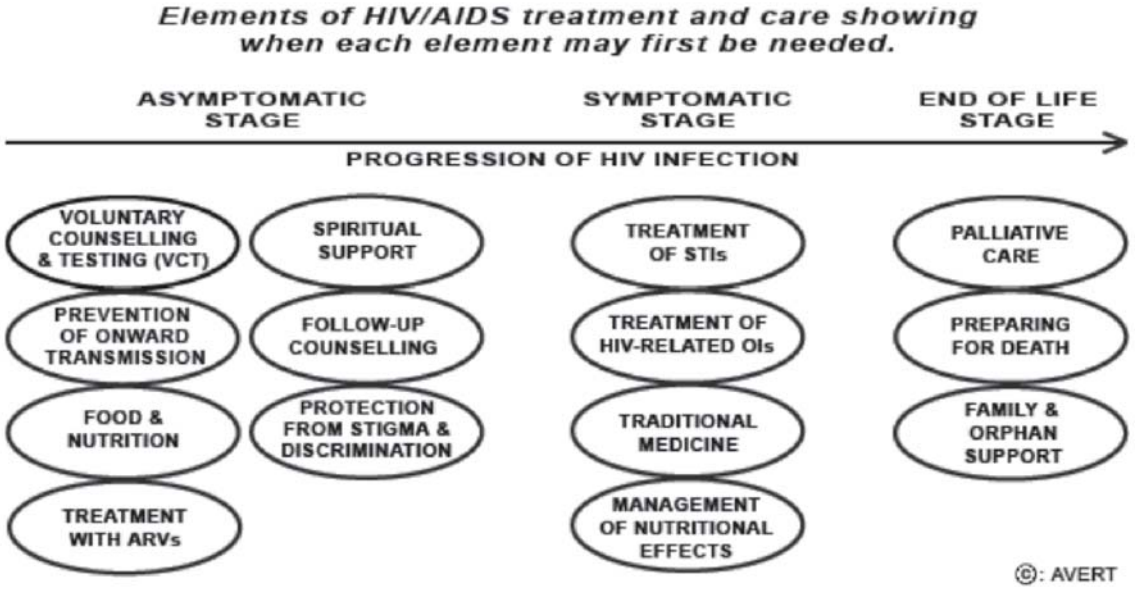
safety of the blood supply;

- Promote greater access to voluntary HIV counselling and testing while promoting principles of confidentiality and consent;
- Integrate HIV prevention into AIDS treatment services;
- Focus on HIV prevention among young people;
- Provide HIV-related information and education to enable individuals to protect themselves from infection;
- Confront and mitigate HIV-related stigma and discrimination;
- Prepare for access and use of vaccines and microbicides;
- Ensure Affordability, accessibility and acceptability of commodities for the prevention and diagnosis, in addition to essential medicines for treatment uptake;
- Prevent or stop recurring conflicts and natural disasters resulting in massive displaced populations and the degradation of infrastructure and social fabric.

More than ever, it has become clearer that HIV and AIDS is of a far larger dimension than a health problem as it was earlier wrongly conceived, as the epidemic other dimensions on national development in terms of its social and economic impacts on the individuals, societies and the entire nation is apparently tremendous. HIV and AIDS have been undermining the developmental prospects of most developing countries for many years. Development is regressing while the past gains made in the pre-AIDS era are being rapidly lost as the human assets, man-made assets, natural assets, knowledge assets and social assets of the country are either being depleted or grossly underutilised consequent upon the epidemic. HIV and AIDS epidemic ranks among one of the worst of human sufferings in terms of having an overwhelming effect on development of individuals (that are infected or affected by the epidemic), communities, nations and the world over. Recent World Bank studies show that HIV and AIDS have a substantial and negative impact on economic growth in Nigeria as well as other African countries. Poverty in turn prevents effective response to HIV and AIDS through lack of resources, both financial and human, to combat the menace. HIV and AIDS, Tuberculosis, and Malaria infections have continued to seriously reverse the gains made in Nigeria in the years past by worsening the socio-economic situation thereby rendering people, businesses and communities even more vulnerable, obviating past development gains and obscuring future economic survival prospects.

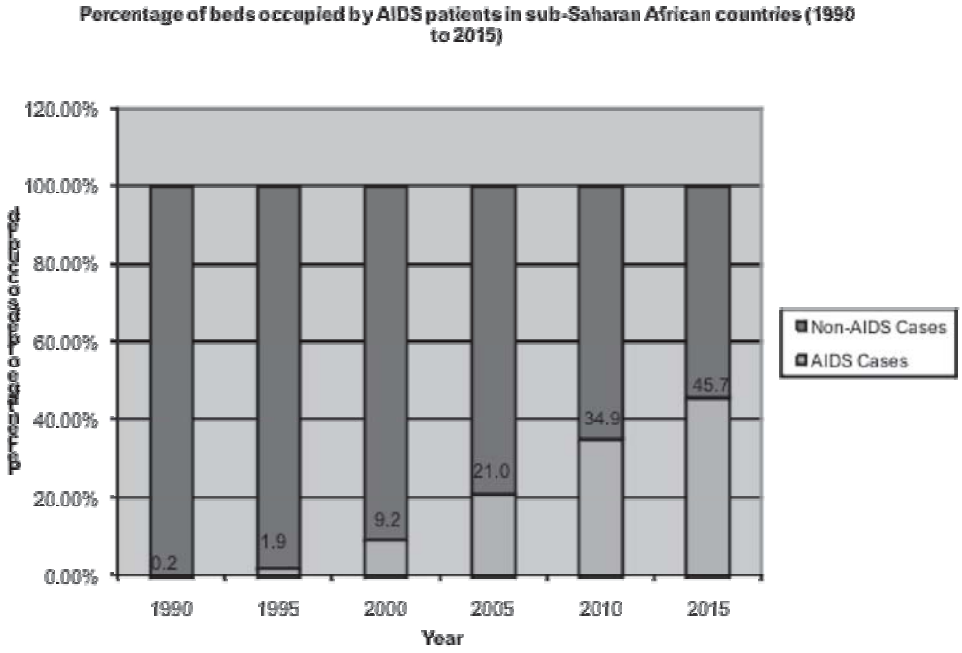
Nigeria epidemic is characterised by one of the most rapidly increasing rates of new HIV and AIDS cases in Africa. Adult HIV prevalence increased steadily from 0.1% in 1986 to 1.8% in 1993 to 3.8% in 1994 to 4.5% in 1996 to 5.4% in 1999 and rose to 5.8% in 2001. With total population of 120 million people, at least, 3.5 million

Nigerian adults and children were living with HIV and AIDS by the end of 2001. Current projections show an increase in the number of new AIDS cases from 250,000 in the year 2000 to 360,000 by the year 2010. As a result of the epidemic, the crude death rate in Nigeria was about 20 percent higher in 2000 than in 1990. In 2001 alone, 170,000 adults and children died of AIDS in Nigeria. It is estimated that, at least, 1 million children have been orphaned in Nigeria as a result of HIV and AIDS epidemic. (Impact of HIV and AIDS: Future Groups/Policy Projects Publications 2002/2003).



The most productive age group of 15-49 of the Nigerian population is most adversely affected by the epidemic, with prevalence ranging between 1.8% to 15%, depending on the community and group under consideration. This has a tremendous impact on the development and economic growth of the country. The epidemic weakens economic activities by decreasing productivity, diverting resources and depleting skills. Agricultural activities that accounts for over 80% of rural people income, is being threatened with consequent threat to national food security. In the industrial sector of the national economy, increased absenteeism, increased staff turnover, loss of tacit knowledge of Organisational operation, increased demand for training and recruitment, and general decline in morale have all been reported. As a result of the morbidity attributable to the epidemic among the workforce of the country, most of who cannot access the requisite care/support for various reasons, individual productivity of the people is being seriously undermined which in turn directly undermines the productivity of the Nigerian nation. This has caused a decline in the Per Capita Income of the citizens and the Gross Domestic Product of the country therefore aggravating an already devastated economy.

Nigeria has 11% of HIV and AIDS infected adults globally (UNAIDS Report 2002).



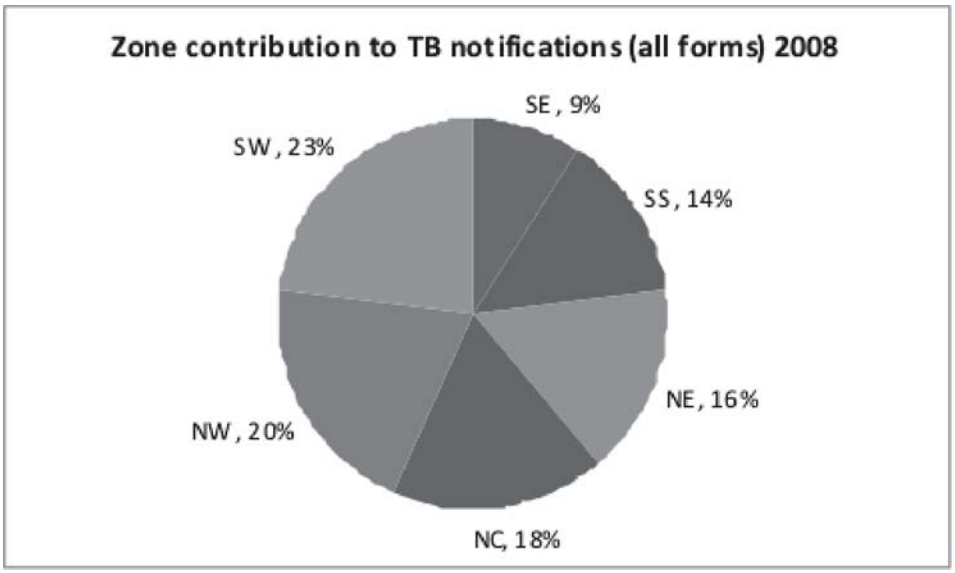
1.2. TUBERCULOSIS

Nigeria has the world's fourth largest tuberculosis (TB) burden, with over 460,000 estimated new cases annually. The country has an estimated incidence of 311 of all forms of TB per 100,000 population per year (out of which 131 per 100,000 population are smear positive) and prevalence of 521 per 100,000 population; making it the highest TB burden country in Africa (WHO Global TB Report 2009).

Although the case detection and treatment success rates of the country fall short of the targets of 70% and 85% respectively, data from NTBLCP revealed that case notification rate of new smear positive has increased from less than 25 per 100,000 populations in 2004 to 30 per 100,000 populations in 2007. Case detection of all forms of TB has also increased from 12% in 2004 to 17% in 2007). The national treatment success rate has remained at about 76 %(2006) with varying figures among the states. However, both the case detection and treatment success rates are among the lowest of high-TB burden countries.

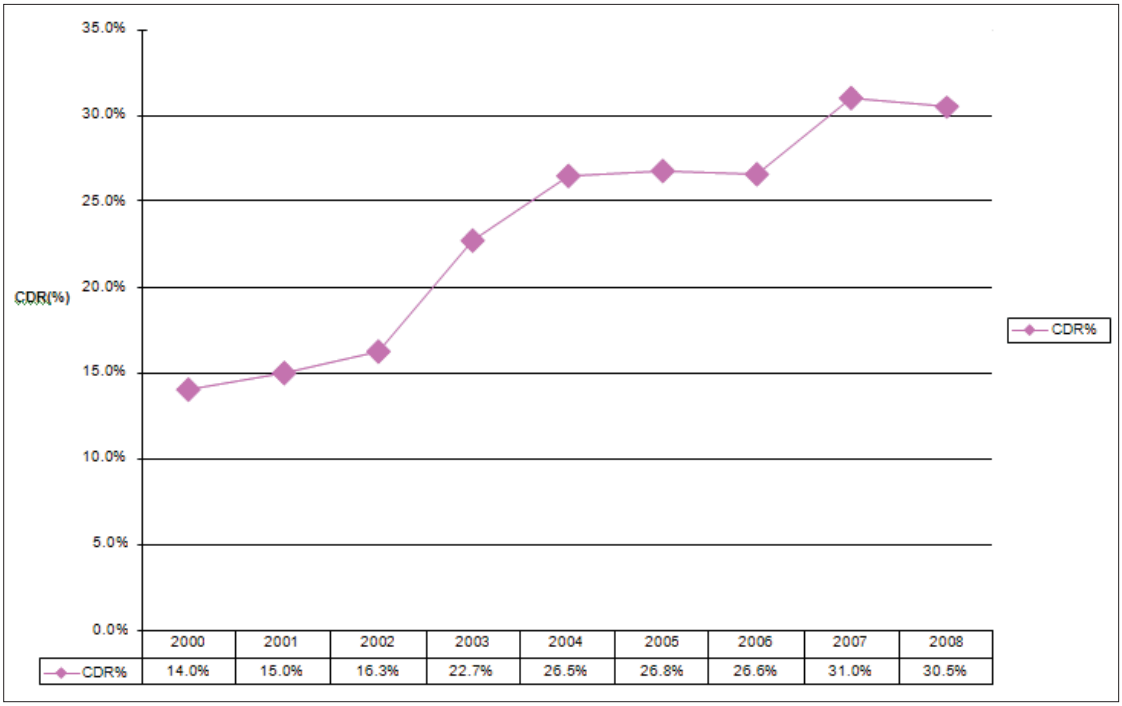
The public health burden posed by TB is becoming increasingly conspicuous as the country's HIV and AIDS epidemic unfolds. The World Health Organisation estimates that the HIV prevalence in adult incident TB cases is 27% (2007). Although no accurate data is available in the country as to the level of multi-drug resistant tuberculosis (MDRTB), cases of treatment failures on category 2 patients are encountered. WHO estimates that 1.8% of all new TB cases may be resistant to first line anti-TB drugs (WHO Global TB Report 2009).

In response to the problems of TB, the FMOH declared TB a national emergency in



Zonal Notification rates for 2008

April 2006 and inaugurated the National TB/HIV Working Group in June 2006. It is expected that with the introduction of Community Tuberculosis Care as one of the fronts for tackling the TB problem, the country would be closer to achieving her target.



	2000	2001	2002	2003	2004	2005	2006	2007	2008
CDR%	14.0%	15.0%	16.3%	22.7%	26.5%	26.8%	26.6%	31.0%	30.5%

Resulting from the increasing TB case burden, there has been a rising trends of TB incidence rate and case notification rate over the seven year period. The smear positive case detection rate also doubled from 16% in 2002 to 30.5% in 2008, using the estimate of 102 new ss+ cases per 100,000 population and population projected from the 2006 census figures. There is, however, a falling trend of the percentage of smear positive among new TB cases detected, which fell from 70% to 55.3% during the 12 year-period (1997 to 2008) as a result of an increasing diagnosis of non-infectious smear negative and extra-pulmonary cases.

Tuberculosis (TB) is a contagious disease. Like the common cold, it spreads through the air. Only people who are sick with TB in their lungs are infectious. When infectious people cough, sneeze, talk or spit, they propel TB germs, known as bacilli, into the air. A person needs only to inhale a small number of these to be infected.

Basic Information on Tuberculosis

Tuberculosis is a chronic infectious disease caused by the bacteria generally referred to as 'Mycobaterium tuberculosis complex'. The disease is airborne and can be passed from one person to another through the inhalation of

sputum droplets released by an infected person when he/she coughs or sneezes. It can affect any organ of the body. Involvement of the lungs is the most common and is known as pulmonary tuberculosis (PTB). Affectation of other organs such as the brain, bones, lymph nodes and intestines is known as extra pulmonary tuberculosis (EPTB).

Symptoms & Signs of PTB

- Cough (dry or productive) that lasts for three or more weeks
- Unexplained weight loss
- Night sweats
- General body weakness or fatigue
- Coughing up blood
- Pain in the chest
- Fever
- Loss of appetite

Other symptoms and signs of TB will depend on the organ(s) affected.

Diagnosis of TB

Sputum (AFB) Microscopy is the mainstays of diagnosis of smear positive PTB.

Treatment of PTB

TB is curable, provided a patient is detected early, commenced on treatment promptly and adheres to treatment. Treatment is FREE and available at DOTS centres and requires 6 - 8 months of daily administration of anti-TB drugs.

Two regimens are used for treatment namely:

- Category 1 for new cases
- Category 2 for re-treatment cases(others except new cases)

The treatment of TB is divided into two phases:

- *The initial intensive phase (IP)* of fully supervised daily administration of drugs is 2 months for new cases (Category 1 regimen) and 3 months for re-treatment cases (Category 2 regimen). Intensive phase for Category 2 also includes injection for 2 months.
- *The continuation phase (CP)* of treatment for new cases (Category 1 regimen) is 4 - 6 months. For re-treatment cases (Category 2 regimen), the continuation phase is 5 months .

The commonly used first line drugs in Nigeria include the following:

- Rifampicin
- Isoniazid
- Pyrazinamide
- Ethambutol
- Streptomycin

Vaccination against Tuberculosis

Bacille Calmette-Guerin (BCG) vaccination offers some degree of protection against severe forms of TB in children. Parents are encouraged to have their newborns vaccinated against TB at birth.

Community TB Care

This is TB Care in a community, by community members who may or may not be health workers, and implemented within the context of the National Programme. It is an operational partnership between the health services and community structures (community leaders, community gatekeepers, religious leaders, CBOs, motivated individuals, existing community volunteers, persons previously affected by TB, etc).

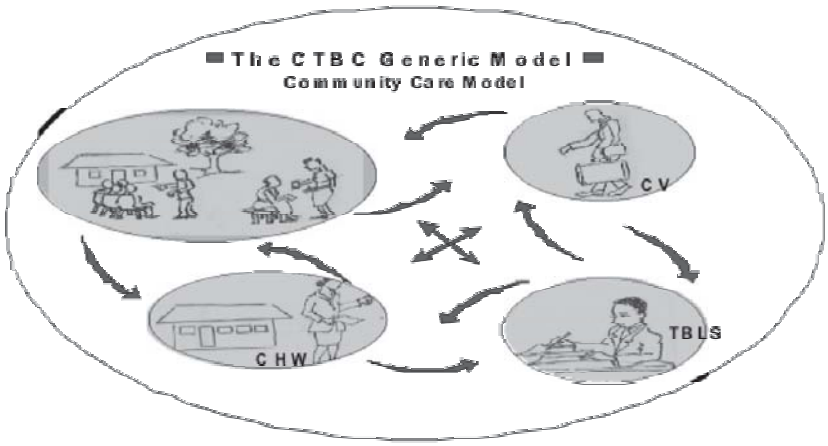
“Community involvement in health delivery is not simply decentralisation of

services into the community or adding new structures onto old functions. It is not suboptimal provision of services for the poor or turning lay persons into medical personnel. On the contrary, it means sharing with communities responsibilities that the community can practice better than health services, while health staff can use their time, resources and facilities more efficiently for other medical functions"4. Thus, the community is a partner and primarily responsible for its own health, rather than a mere beneficiary of health services.

CTBC is based on a framework of:

- Community participation: This entails that the community is involved in the planning, implementation and evaluation of TB control activities in the community;
- Operational partnership: This ensures that all stakeholders work in very close collaboration, building on one another's strength, while strengthening each other's weaknesses to maximise the potentials for TB control in the community;
- Community support/contribution: This allows TB control programme at all levels to enable communities build on their hidden potential to control TB in the community;
- Solidarity: This is the moral responsibility of community members to identify and share in the challenges and problems of the TB patient, while recognising and defending the dignity and right to life of one another. Solidarity reduces stigma and discrimination, which violate human dignity;
- Ownership: CTBC is built on the belief that the community should be seen and see itself as an integral part of the programme and not an alien. In this way, the programme will enjoy the support of community members and ultimately lead to sustainability.
- Sustainability: Together with quality service delivery, this is the hallmark of a good CTBC programme.

THE CTBC GENERIC MODEL



TS = Treatment supporter,
CV = Community volunteer,
CHW =Community Health worker,
TBLS = Tuberculosis and Leprosy Supervisor.

The TB suspect should go to the DOTS centre for diagnosis by the DOTS provider. Following diagnosis, a community health worker at the DOTS centre will work in collaboration with the community volunteer to identify an acceptable treatment supporter for the patient. The treatment supporter should support and encourage the patient to commence and complete his/her treatment. The TBLS is responsible for the programme, especially as it relates to the logistic support to the health facility and will in addition provide training support for the CHW, CV and TS.

Left untreated, each person with active TB disease will infect on average, between 10 and 15 people every year. However, people infected with TB bacilli will not necessarily become sick with the disease. The immune system "walls off" the TB bacilli which, protected by a thick waxy coat, can lie dormant for years. When someone's immune system is weakened, the chances of becoming sick are greater.

- Someone in the world is newly infected with TB bacilli every second.
- Overall, one-third of the world's population is currently infected with the TB bacillus.
- 5-10% of people who are infected with TB bacilli (but who are not infected with HIV) become sick or infectious at some time during their life. People with HIV and TB infection are much more likely to develop active TB.

The WHO African region contains only 11% of the world's population, but

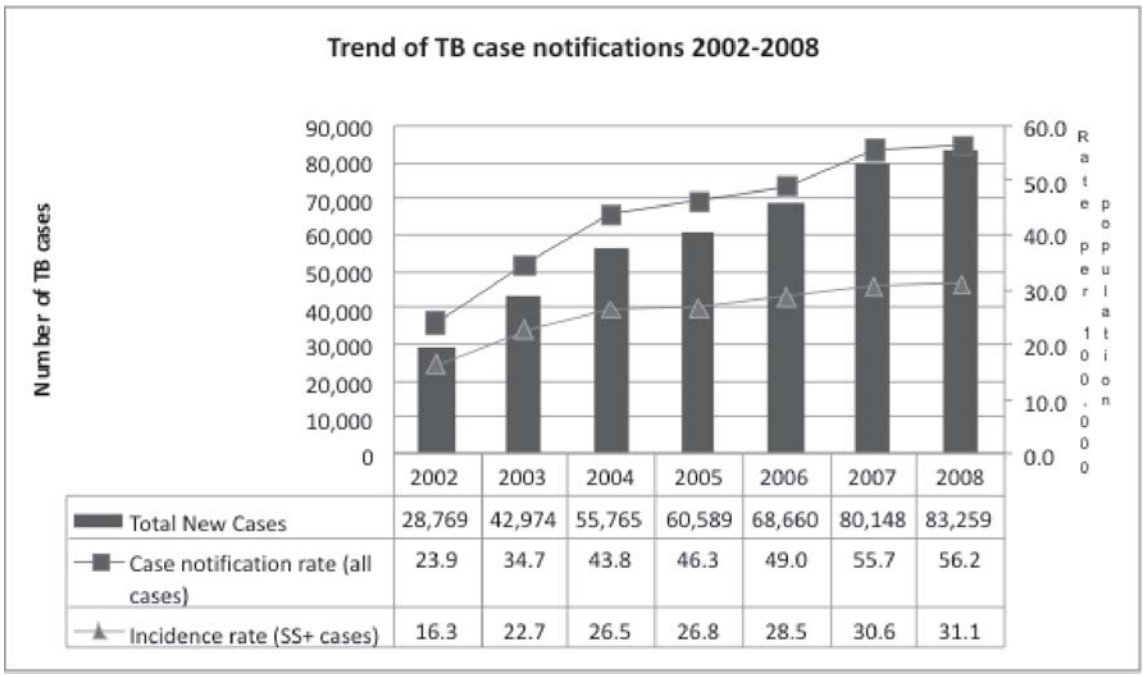


Figure 3 - Trend of case Notification 2002 - 2008

contributed 27% of the global total of notified TB cases in 2003. More than 34 countries have notification rates of at least 300 cases per 100, 000 populations in developed countries. Between 1993 and 2003 the notification rate of new smear positive TB rose from 20 to 75 cases per 100, 000 populations. The incidence of TB in many parts of the world has stabilised with the exception of Africa, South-east Asia and western pacific regions.

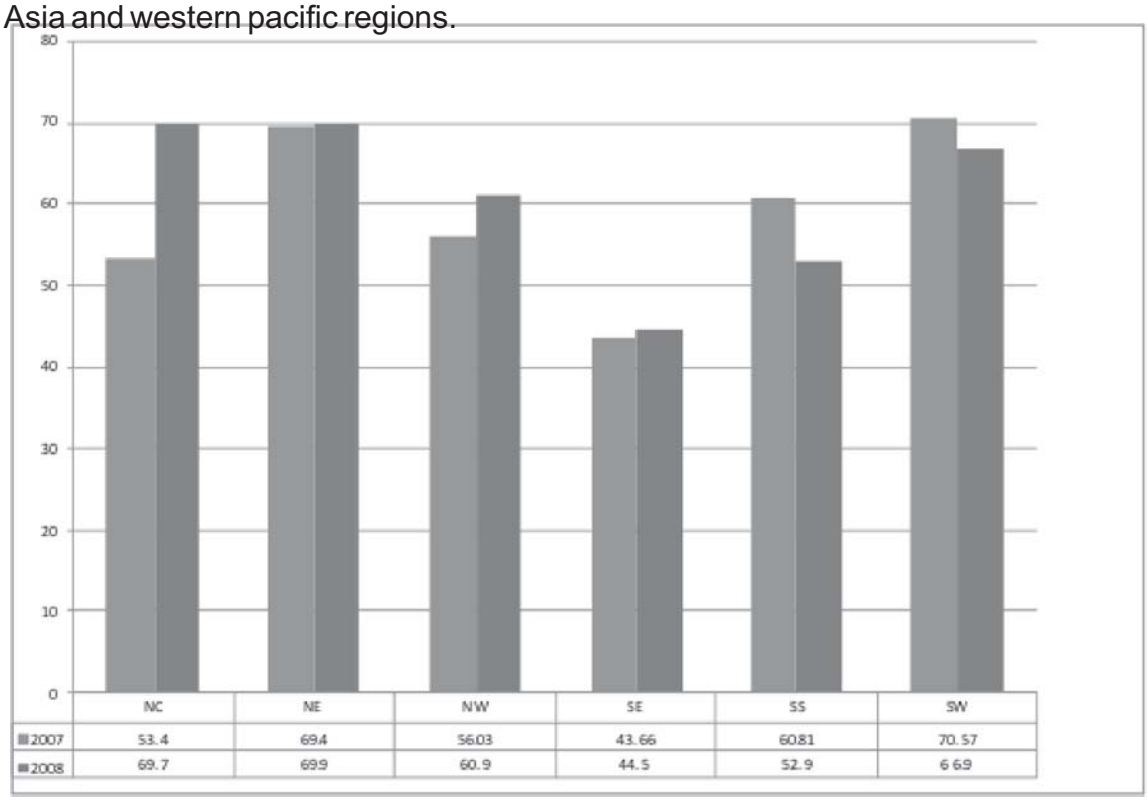
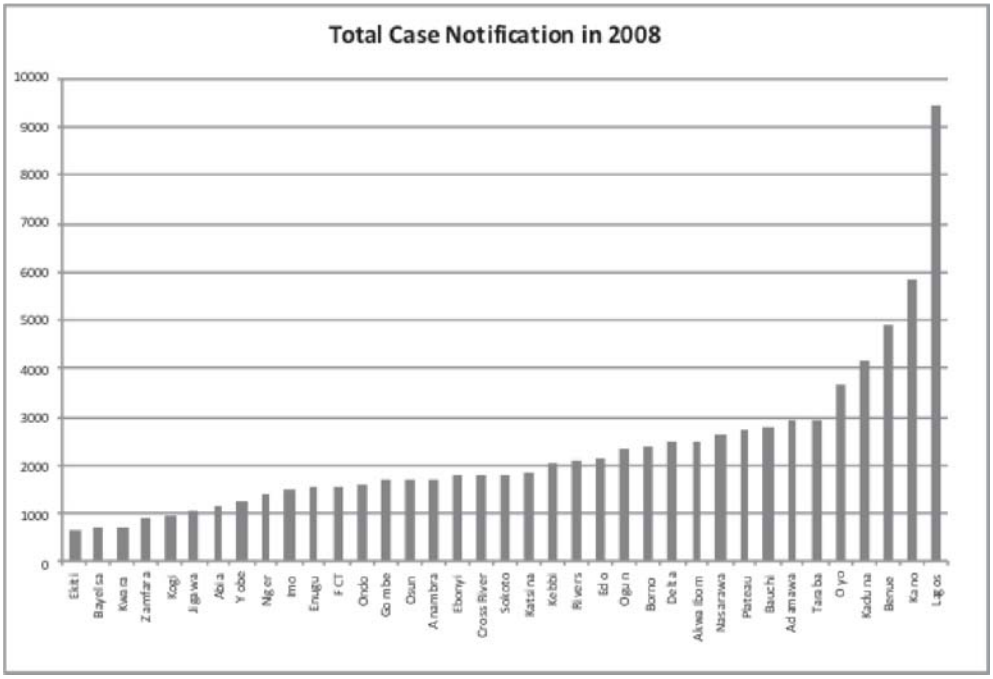
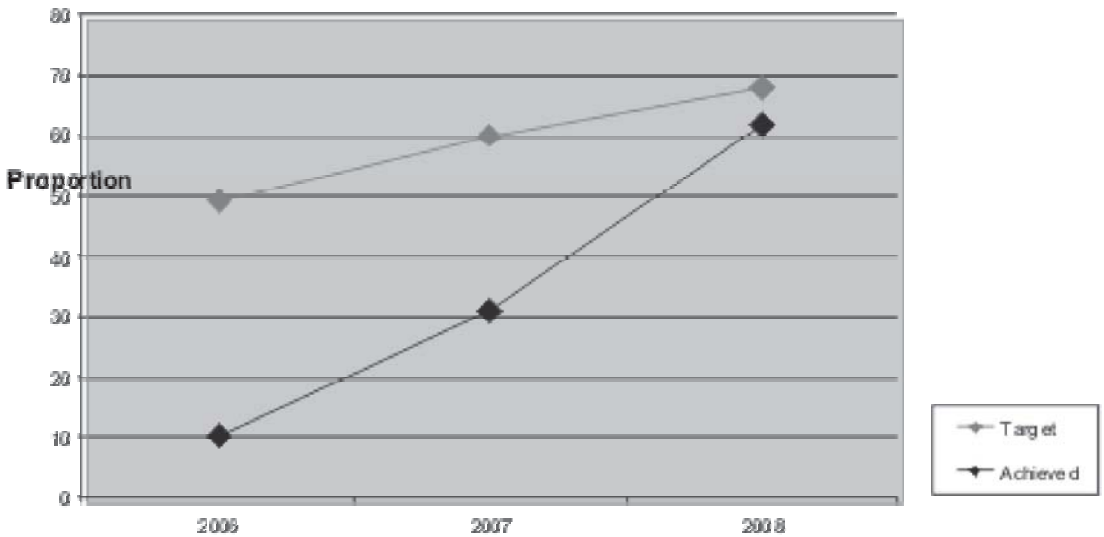


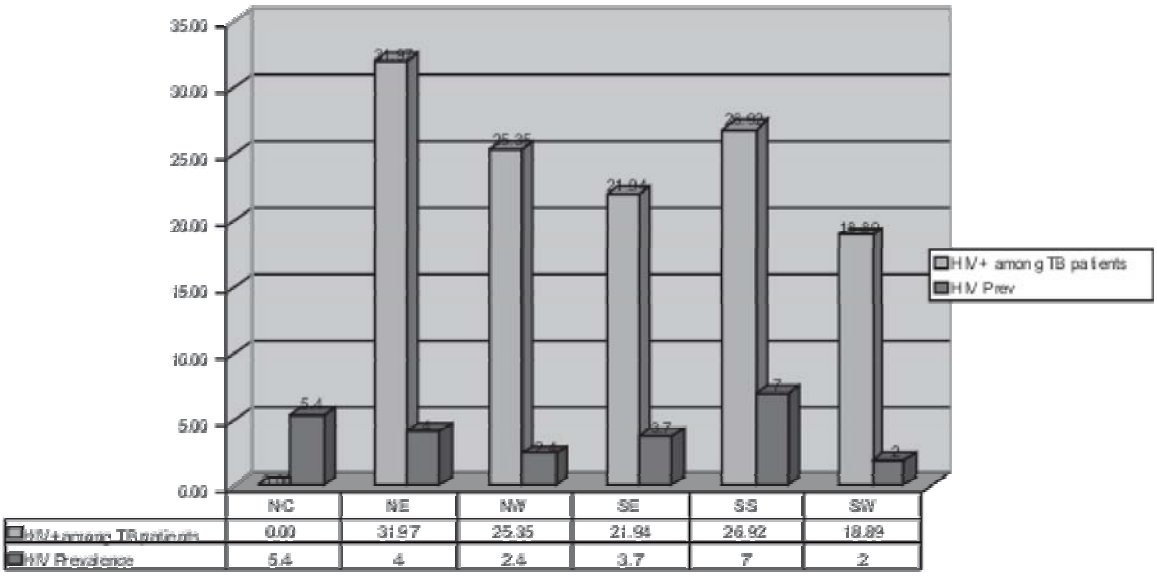
Figure 4 - Comparison of Zonal Notification between 2007 and 2008



State	Rate		State	Rate
Jigawa	23.3		Delta	57.8
Zamfara	26.1		Kano	58.7
Ekiti	26.6		Cross River	58.8
Kogi	28.2		Kebbi	59.4
Kwara	29.5		Ogun	59.7
Katsina	30.5		Akwa Ibom	60.6
Niger	33.3		Edo	62.5
Imo	35.95		Oyo	62.6
Rivers	38.2		Kaduna	65.9
Abia	38.97		Gombe	67.7
Anambra	39.2		Ebonyi	77.2
Bayelsa	40.6		Plateau	81.5
Enugu	44.5		Adamawa	87.6
Ondo	45.1		Lagos	98.9
Sokoto	46.6		FCT	104.6
Osun	47.7		Benue	110.4
Yobe	51.9		Taraba	120.7
Borno	55.2		Nasarawa	132.6
Bauchi	56.1			



Proportion of TB patients tested for HIV



	NC	NE	NW	SE	SS	SW
HIV+ among TB patients	0.00	31.97	25.35	21.94	26.92	18.89
HIV Prevalence	5.4	4	2.4	3.7	7	2

Proportion of HIV Positive among TB patients

There was a remarkable increase in the North Central (NC) and North West (NW) zones, minimal in the North East (NE) and South East (NE) zones and a drop in the South West (South West) and South South (SS) Zones, between 2007 and 2008.

There are sub-regional differences in the burden of TB in Africa. Southern and eastern Africa has the highest per capita burden. Seven southern African countries report between 400-700 cases per 100, 000 population. In the central African countries, six out of seven countries reported between 100 and 200 cases per 100, 000 while north Africa have comparatively the lowest TB burden of less than 65 cases per 100, 000 population. Most eastern African countries report less than 200 cases per 100, 000 populations with the exception of Kenya. More than 60% of western African countries register fewer than 100 cases per 100, 000 populations.

In 2004, per capita TB incidence was stable or falling in five out of six WHO regions, but growing at 0.6% per year globally. In the African region, TB incidence is still rising, following the spread of HIV. However, the annual increase in case notifications from the African Region are declining each year, probably because the HIV epidemics in African countries are also slowing. In Eastern Europe (mostly countries of the former Soviet Union), incidence per capita increased during the 1990s, but peaked around 2001, and has since fallen.

Between 1980 and 2004, 86 million TB patients were registered in national surveillance systems and reported to WHO, including 22 million notified by DOTS programmes since 1995.

HIV and TB form a lethal combination, each speeding the other's progress. HIV weakens the immune system. Someone who is HIV-positive and infected with TB bacilli is many times more likely to become sick with TB than someone infected with TB bacilli that is HIV-negative. TB is a leading cause of death among people who are HIV-positive. It accounts for about 13% of AIDS deaths worldwide. In Africa, HIV is the single most important factor determining the increased incidence of TB in the past 10 years.

The proportion of HIV positives among TB patients is presently 27%, with the highest figures from the North Eastern zone as shown in the figure above. Statistics also revealed a doubling of the proportion of TB patients tested for HIV between 2007 and 2008, current value as at 2008 being 62.1%

WHO and its international partners have formed the TB/HIV Working Group, which develops global policy on the control of HIV-related TB and advises on how those fighting against TB and HIV can work together to tackle this lethal combination. The interim policy on collaborative TB/HIV activities describes steps to create mechanisms of collaboration between TB and HIV and AIDS programmes, to reduce the burden of TB among people with HIV and the burden of HIV among TB patients.

Until about 50 years ago, there were no medicines to cure TB. Now, strains that are resistant to a single drug have been documented in every country surveyed; what is more, strains of TB resistant to all major anti-TB drugs have emerged. Drug-resistant TB is caused by inconsistent or partial treatment, when patients do not take all their medicines regularly for the required period because they start to feel better, because doctors and health workers prescribe the wrong treatment regimens, or because the drug supply is unreliable. A particularly dangerous form of drug-resistant TB is multidrug-resistant TB (MDR-TB), which is defined as the disease caused by TB bacilli resistant to at least isoniazid and rifampicin, the two most powerful anti-TB drugs. Rates of MDR-TB are high in some countries, especially in the former Soviet Union, and threaten TB control efforts.

The incidence of pulmonary tuberculosis in South-eastern Nigeria was studied using cultures and microscopic examination of sputa. The isolation of acid-fast bacilli (AFB) from sputa of some in- and out-patients in hospitals and health centres revealed the presence of Mycobacterium tuberculosis in 420 (31.7%) out of the 1,324 patients examined during a TB outbreak. A mortality rate of 9 (2.14%) of the 420 AFB-positive cases was observed during the study period of 10 months. The most affected age group was between 16 and 35 years, with high incidence rates found in traders (33.8%), health workers (31.0%), and food vendors (13.8%). Male subjects had a higher incidence of 35.6%, compared to 26.9% in females.

Intensification of training programmes for adequate numbers of medical diagnostic personnel in referral hospitals; public health education and integration of socio-political, cultural and economic frameworks are advocated in the sub-region to avert imminent TB epidemic in South-eastern Nigeria.

To establish the prevalence of HIV antibodies in patients with pulmonary tuberculosis, 536 new cases presenting with symptoms of broncho-pulmonary disorders were randomly selected from the six-referral chest clinics in Lagos and screened for tuberculosis and HIV infections. Sputum and serum samples were obtained from all the patients. The sputum samples were examined for acid-fast bacilli (AFB) by both microscopy and culture. The sera were screened for HIV-1 and HIV-2 antibodies by ELISA and confirmed by Western blot (WB). Of the 536 cases studied, 188 (35%) were positive for AFB while 13 (2.4%) were seropositive for HIV. Correlation between the AFB and HIV results revealed that 10 (5.3%) of the 188 AFB positives were also seropositive for HIV as compared to 3 (0.9%) in the 348 AFB negative cases. The difference in the HIV seroprevalence rates in the two groups was statistically significant ($P < 0.001$). The recorded higher frequency of HIV infections in the AFB positives strongly suggested some level of interaction between TB and HIV infections in Lagos. Infections with HIV-2 were more prevalent than HIV-1 in the patients with HIV and TB. No case of dual infection with HIV-1 and HIV-2 was recorded in this group of patients. However, in the 3 HIV-seropositive patients within the control group (non-tuberculosis patients), 2 (67%) were positive for both HIV-1 and HIV-2 while 1 (33%) was positive for HIV-2 only. Mycobacterium tuberculosis (70%), M. avium (20%) and M. kansasii (10%) were the mycobacteria strains isolated from the HIV/TB infected patients (Source: NTBLCP).

While drug-resistant TB is generally treatable, it requires extensive chemotherapy (up to two years of treatment) that is often very expensive (often more than 100 times more expensive than treatment of drug-susceptible TB), and is also more toxic to patients.

Global and regional incidence

Based on surveillance and survey data, WHO estimates that 9.27 million new cases of TB occurred in 2007 (139 per 100 000 population), compared with 9.24 million new cases (140 per 100 000 population) in 2006. Of these 9.27 million new cases, an estimated 44% or 4.1 million (61 per 100 000 population) were new smear positive cases. India, China, Indonesia, Nigeria and South Africa rank first to fifth in terms of the total number of incident cases; the estimated numbers of cases in these and other high-burden country of which there are 22 that account for approximately 80% of all new TB cases arising each year (HBCs) in 2007. Asia (the South-East Asia and Western Pacific regions) accounts for 55% of global cases and the African Region for

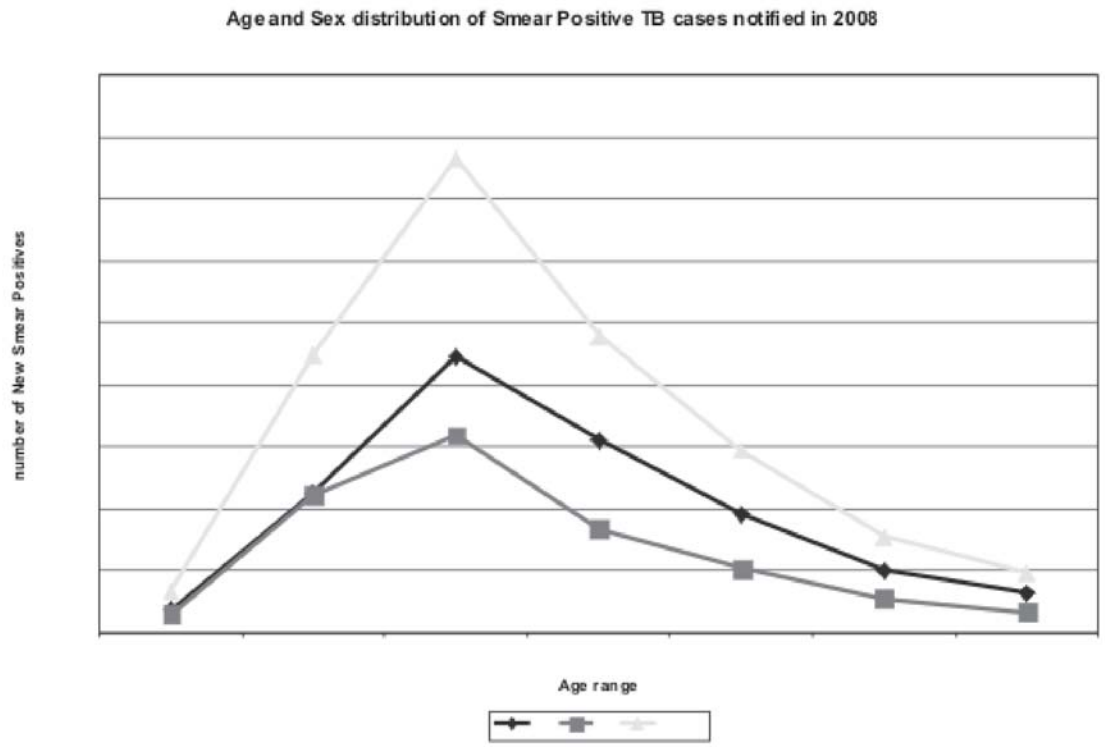
31%; the other three regions (the Americas, European and Eastern Mediterranean regions) account for small fractions of global cases. The magnitude of the TB burden within countries can also be expressed as the number of incident cases per 100 000 population. Among the 15 countries with the highest estimated TB incidence rates, 13 are in Africa, a phenomenon linked to high rates of HIV co-infection (Global TB Control WHO Report, 2009).

It is estimated that 1.7 million deaths resulted from TB in 2004. Both the highest number of deaths and the highest mortality per capita are in the WHO Africa region, where HIV has led to rapid growth of the TB epidemic, and increases the likelihood of dying from TB.

In 2004, estimated per capita TB incidence was stable or falling in five out of six WHO regions, but growing at 0.6% per year globally. The exception is the African region, where TB incidence was still rising, in line with the spread of HIV. However, the number of cases notified from the African region is increasing more slowly each year, probably because the HIV epidemics in African countries are also slowing. In Eastern Europe (mostly countries of the former Soviet Union), incidence per capita increased during the 1990s, but peaked around 2001, and has since fallen.

Tuberculosis has affected mankind since before recorded history. Some speculate that the first cases may have been attributable to Mycobacterium bovis infections acquired by humans from other animals. Others suggest that M. tuberculosis, which affects all primates, may have been independently established in non-human primates and later passed to humans. In either case, disease modelling suggests that tuberculosis did not become endemic until about 10,000 years ago.

There is fairly convincing evidence that tuberculosis, while rare, did occur in Europe, the Americas, and North Africa in pre-historic times. The analysis of mummies and skeletal remains, which show evidence of deformities characteristic of spinal tuberculosis, with accompanying indications of fibrotic lesions in the lung, is the main source of evidence for the existence of the disease in Northern Africa as far back as 3,000 years ago. Similar evidence from remains in Peru and Chile is also supported by the presence of DNA "fingerprints" that are characteristic of M. tuberculosis. There is no evidence of tuberculosis in sub-Saharan Africa, East Asia, or the Pacific until after contact was initiated with the Europeans, during the period of colonisation. Even where tuberculosis existed it remained relatively rare until the 17th century in Europe. Tuberculosis grew to epidemic proportions in Europe beginning in the early 1600's as populations shifted to expanding cities and population densities increased. For the first time, conditions ideal for the spread of this airborne disease were created and, as environmental conditions worsened, tuberculosis came to be the leading cause of death in Western Europe in the 18th



Sex	0-14	15-24	25-34	35-44	45-54	55-64	65+	Total
M	745	4518	8910	6210	3821	1987	1267	27458
F	579	4431	6391	3351	2057	1099	660	18568
Total	1324	8949	15301	9561	5878	3086	1927	46026
%Males	56.3%	50.5%	58.2%	65.0%	65.0%	64.4%	65.7%	59.7%
%Females	43.7%	49.5%	41.8%	35.0%	35.0%	35.6%	34.3%	40.3%

Distribution by age and sex of TB cases (smear positive) notified in

and early 19th centuries.

Tuberculosis then began to decline in both Western Europe and North America beginning in the mid-19th century. This decline has been nearly continuous to the present day, with exceptions for the effects of World War I, the world influenza pandemic in 1919, World War II, and a recent increase in many industrialized countries and in countries where prevalence of individuals infected with both HIV and tuberculosis is high, such as in sub-Saharan Africa. This decline in tuberculosis was accelerated by the development of effective chemotherapy for tuberculosis in the second half of the 20th Century, but it began long before there were any effective treatments for the disease. There are two competing explanations for this decline before chemotherapy. One explanation advanced for the decline is the effect of improving economic conditions and the accompanying improvements in sanitation and the environment. While the sanitation movement, active in that era, likely contributed to the decline, many favour the argument that the segregation of infectious individuals from the general population interrupted

the transmission of the disease. Initially, the segregation of tuberculosis occurred in the workhouse infirmaries for the poor in Europe and in the charity hospitals of the United States. The active segregation of patients in tuberculosis sanatoria in the late 19th and early 20th century may have accelerated the rate of decline.

In the less industrialised parts of the world, the increase in tuberculosis occurred much later and usually followed increasing contact with Europeans and colonisation of the countries of Asia, Africa, South America, and the islands of the Pacific. This phenomenon is documented through a number of examples in the chapter by Daniel, et al. and a very clear example is the experience of Papua New Guinea, which was apparently free of tuberculosis until 1951, following increasing contact with Europeans and North Americans after World War II. Stead has argued that tuberculosis rages in naive populations, producing at first typhoid like illness, because of a lack of genetic resistance, changing to a pattern of tuberculosis more similar to the chronic disease seen in the industrialised countries and then potentially declining. This suggests that the development of genetic resistance at least partially accounts for the decline seen in Europe and North America.

In the United States, tuberculosis cases decreased from 84,304 cases in 1953, when national reporting was first begun, to 22,201 (a rate or 9.3 cases per 100,000 population) in 1985. The decline was a fairly steady decline of about 5.8% per year. However, the decline in tuberculosis cases stopped in 1985 and between then and 1992 the annual number of cases increased by 20% to 26,673 cases. The increases were concentrated geographically in several states, with over 90% of the increase in California, Florida, New Jersey, New York, and Texas and demographically in racial and ethnic minorities, persons aged 25 to 44, males and the foreign born. Especially disturbing, and indicative of increasing transmission of new infections, was a 36% increase in tuberculosis cases among children 4 years old or younger. Fortunately, tuberculosis appears to be on the decline again in the United States with 11 consecutive years of decreasing numbers of cases, with only 14,871 cases and a case rate of 5.1 per 100,000 in 2003.

The reasons for the increases in tuberculosis in the United States and the subsequent decline are clearly multifactoral. However, an Institute of Medicine Report concluded in 2000 that the primary reason for the increase was the failure of the public health infrastructure and tuberculosis control programmes in the United States. The report further concludes that the decrease once again resumed as a result of increased public health funding for tuberculosis control, and that the elimination of tuberculosis in the United States is feasible with adequate funding.

The situation in much of the rest of the world is quite different, with increased rates of tuberculosis in a number of regions. An excellent review of tuberculosis

Countries/ Territories	WHO estimated sputum smear positive pulmonary TB rate per 100 000 (3 year average)	Countries/ Territories	WHO estimated sputum smear positive pulmonary TB rate per 100 000 (3 year average)
Afghanistan	150	Libyan Arab Jamahiriya	150
Albania	11	Lithuania	11
Algeria	24	Luxembourg	24
American Samoa	13	Madagascar	13
Andorra	8	Malawi	8
Angola	124	Malaysia	124
Anguilla	11	Maldives	11
Antigua & Barbuda	3	Mali	3
Argentina	20	Malta	20
Armenia	34	Marshall Islands	34
Australia	3	Mauritania	3
Austria	6	Mauritius	6
Azerbaijan	35	Mexico	35
Bahamas	19	Micronesia	19
Bahrain	20	Monaco	20
Bangladesh	105	Mongolia	105
Barbados	6	Montserrat	6
Belarus	29	Morocco	29
Belgium	6	Mozambique	6
Belize	24	Myanmar	24
Benin	38	Namibia	38
Bermuda	2	Nauru	2
Bhutan	50	Nepal	50
Bolivia	101	Netherlands	101
Bosnia &Herzegovina	25	Netherlands Antilles	25
Botswana	258	New Caledonia	258
Brazil	27	New Zealand	27
British Virgin Islands	7	Nicaragua	7
Brunei Darussalam	25	Niger	25

Countries/ Territories	WHO estimated sputum smear positive pulmonary TB rate per 100 000 (3 year average)	Countries/ Territories	WHO estimated sputum smear positive pulmonary TB rate per 100 000 (3 year average)
Bulgaria	19	Nigeria	128
Burkina Faso	74	Niue	13
Burundi	149	Northern Mariana Is	31
Cambodia	231	Norway	2
Cameroon	77	Oman	5
Canada	2	Pakistan	82
Cape Verde	77	Palau	31
Cayman Islands	2	Panama	21
Central African Republic	137	Papua New Guinea	108
Chad	106	Paraguay	31
Chile	7	Peru	85
China	47	Philippines	136
China, Hong Kong SAR	37	Poland	14
China, Macao SAR	37	Portugal	20
Colombia	22	Puerto Rico	3
Comoros	23	Qatar	27
Congo	165	Rep. Korea	40
Cook Islands	13	Republic of Moldova	64
Costa Rica	7	Romania	66
Côte d'Ivoire	171	Russian Federation	53
Croatia	20	Rwanda	162
Cuba	5	Saint Kitts & Nevis	5
Cyprus	2	Saint Lucia	8
Czech Republic	5	Samoa	13
Denmark	4	San Marino	3
Djibouti	350	Sao Tome & Principe	51
Dominica	7	Saudi Arabia	18
Dominican Republic	41	Senegal	109
DPR Korea	77	Serbia & Montenegro	16

Countries/ Territories	WHO estimated sputum smear positive pulmonary TB rate per 100 000 (3 year average)	Countries/ Territories	WHO estimated sputum smear positive pulmonary TB rate per 100 000 (3 year average)
DR Congo	162	Seychelles	17
Ecuador	61	Sierra Leone	186
Egypt	13	Singapore	18
El Salvador	25	Slovakia	10
Equatorial Guinea	89	Slovenia	8
Eritrea	119	Solomon Islands	31
Estonia	22	Somalia	183
Ethiopia	156	South Africa	246
Fiji	13	Spain	12
Finland	4	Sri Lanka	26
France	5	St Vincent & Grenadines	13
French Polynesia	13	Sudan	97
Gabon	109	Suriname	30
Gambia	103	Swaziland	444
Georgia	37	Sweden	2
Germany	4	Switzerland	3
Ghana	92	Syrian Arab Republic	19
Greece	9	Tajikistan	68
Grenada	2	TFYR Macedonia	15
Guam	31	Thailand	61
Guatemala	34	Timor-Leste	250
Guinea	102	Togo	155
Guinea-Bissau	87	Tokelau	13
Guyana	57	Tonga	13
Haiti	137	Trinidad & Tobago	5
Honduras	36	Tunisia	10
Hungary	13	Turkey	13
Iceland	1	Turkmenistan	34
India	75	Turks & Caicos Islands	9

Countries/ Territories	WHO estimated sputum smear positive pulmonary TB rate per 100 000 (3 year average)	Countries/ Territories	WHO estimated sputum smear positive pulmonary TB rate per 100 000 (3 year average)
Indonesia	118	Tuvalu	13
Iran	13	Uganda	173
Iraq	69	Ukraine	43
Ireland	5	United Arab Emirates	8
Israel	4	United Kingdom	5
Italy	3	UR Tanzania	153
Jamaica	3	Uruguay	13
Japan	14	US Virgin Islands	5
Jordan	2	USA	2
Kazakhstan	66	Uzbekistan	50
Kenya	250	Vanuatu	31
Kiribati	31	Venezuela	19
Kuwait	12	Viet Nam	82
Kyrgyzstan	58	Wallis & Futuna Is	13
Lao PDR	72	West Bank & Gaza Strip	11
Latvia	33	Yemen	41
Lebanon	6	Zambia	273
Lesotho	285	Zimbabwe	269
Liberia	116		

epidemiology by Chris Dye was published in 2003. He notes that there were 8-9 million new cases of tuberculosis in 2000 and that 3-4 million of these cases were pulmonary, smear positive, the most infectious and thus the most epidemiologically significant form of tuberculosis. The rates of tuberculosis in sub-Saharan Africa average 290/100,000, yet over half of the cases are accounted for in India, China, Indonesia, Bangladesh and Pakistan. Dye notes that his models show that tuberculosis is on the increase and that the number of cases grew 1.7% per year from 1997 to 2000 and that with the present trends there will be 9-10 million new cases in 2010.

Dye attributes the increase in tuberculosis at least in part to the impact of HIV and AIDS in those countries were the epidemics co-exist. HIV infection rates among TB

cases exceed 60% in South Africa, Zimbabwe and Zambia. However, he also notes the impact of declining public health infrastructure (as was noted in the US) particularly in the case of Russia and the states of the former Soviet Union, where cases have increased significantly since 1990. He also cites the mixing of prison with civilian populations and recent improved surveillance and case reporting as other possible causes.

The DOTS strategy (Directly Observed Therapy Short-course) as advocated by the WHO and the Stop-TB Partnership is a package of programmes and policies designed to lessen the burden of tuberculosis through passive case-finding and treatment of the cases. A cure-rate of over 90% is possible with this approach and Dye notes that the average treatment success rate was 82% in 155 national programmes. However, coverage is far from complete and at the current rates of DOTS expansion the target of 70% case detection will not be reached until after 2010. Dye notes that without active case finding and programmes to prevent the disease it will be difficult to impact significantly on tuberculosis.

Globally, there are 2 billion people infected with TB one third of the world's population. Africa, with Nigeria contributing a substantial amount accounts for more than a quarter of all the TB cases reported in the world, is the only continent where TB rates are on the increase. Many countries have reported up to 4 times increase in the number of TB rates despite implementing effective TB strategies. The main reason for this in many countries is the HIV and AIDS epidemic.

The African region contains only 11% of the world's population, but contributed 27% of the global total of notified TB cases in 2003. More than 34 countries have notification rates of at least 300 cases per 100, 000 populations in developed countries. Between 1993 and 2003 the notification rate of new smear positive TB rose from 20 to 75 cases per 100, 000 populations. The incidence of TB in many parts of the world has stabilised with the exception of Africa, South-east Asia and western pacific regions.

In 2008, the distribution of smear positive TB cases show that 18568(40.3%) were females and 59.7% were male. Children (both boys and girls) aged less than 15yrs were 1324 or 3% of the new smear positive TB cases notified, which is not much different from 2007. As in 2007, the majority of smear positive cases 24862 (54%) notified in 2008 were between 25-45 yrs of age as shown in the table and figure above, which represents major affectation of the reproductive group/ labour force by the TB burden.

There are sub-regional differences in the burden of TB in Africa. Southern and eastern Africa has the highest per capital burden. Seven southern African countries

report between 400-700 cases per 100, 000 population .In the central African countries, six out of seven countries reported between 100 and 200 cases per 100, 000 while north Africa have comparatively the lowest TB burden of less than 65 cases per 100, 000 population. Most eastern African countries report less than 200 cases per 100,000 populations with the exception of Kenya. More than 60% of western African countries register fewer than 100 cases per 100,000 populations. In 2004, per capita TB incidence was stable or falling in five out of six WHO regions, but growing at 0.6% per year globally. The exception is the African Region, where TB incidence was still rising, following the spread of HIV.

Poverty, lack of basic health services, poor nutrition and inadequate living conditions all contribute to the spread of TB. In turn illness and death from TB reinforces and deepens poverty in many communities. Across the globe, the poor are at greater risk of TB. Studies in India have shown that the prevalence of TB is between two and four times higher amongst groups with low income and no schooling.

Overcrowded conditions, poor nutrition and inadequate sanitation increase the probability of being infected and developing active TB. Once they are ill, those who have limited access to health services are less likely to be diagnosed and treated for TB. The greater the number of people with active TB in community, the more likely others are to become infected. This becomes vicious circles in poor communities where TB flourishes. Over 90% of TB cases and 90% of deaths from TB occur in developing countries.

A key challenge for TB control today is finding those people who have limited access to effective TB treatment and curing them. Expanding innovative approaches such as linking the public and private sectors in the treatment of referral of such cases will be critical in reducing TB deaths among the poor.

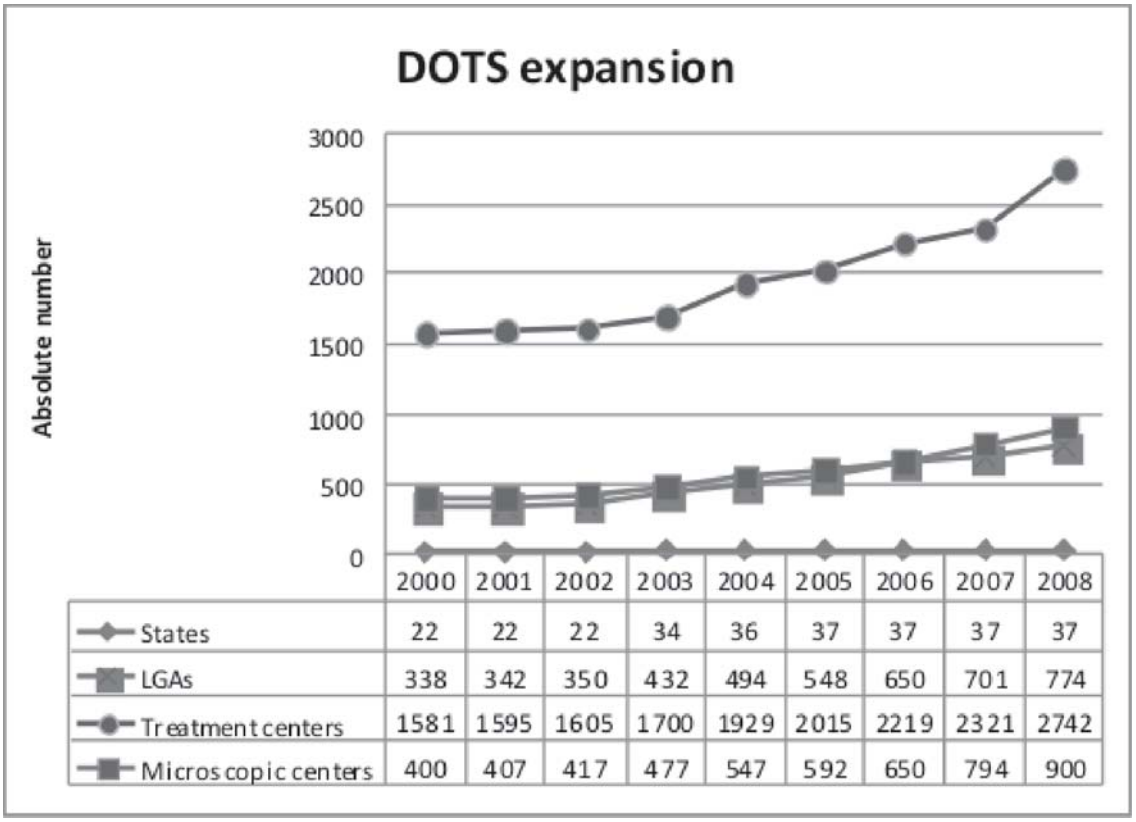
TB is a leading cause of death among women of reproductive age. One of the reasons for this is that women are less likely than men to be tested and treated for TB. In addition, as greater numbers of women become infected with HIV, more are also becoming sick with TB.

The socioeconomic impact of TB is enormous. Direct costs include paying for visits to clinics, tests and drugs. In addition, TB imposes high non-medical costs such as the cost of additional nourishing foods and transport to and from clinics. The indirect costs include lost household income and production (such as food) adverse impact on the health and education of family members (withdrawal of children from school) and the cost of sub-optimal land use.

More than 75% of TB-related disease and death occurs among people between the ages of 15 to 54 the most economically active segment of the population. TB is estimated to deplete the incomes of the world's poorest communities by a total of US$ 12 billion per year. The potential cost of lost productivity due to TB is in the order of 4 to 7% of GDP. The average TB patient loses 3 to 4 months of work time as a result of being sick; loss of household earnings ranges from 30-100%. Mean household spending on TB amounts to 8-20% of the annual household income, varying by region.

International Tuberculosis Incidence Rates

The following rates are based upon the World Health Organisation's (WHO) three years (2002, 2003 and 2004) of estimated sputum smear positive pulmonary tuberculosis (TB) rates. The three year moving average is used to adjust for unstable rates in some jurisdictions. The estimated sputum smear positive pulmonary TB rates are used, rather than the country/territory reported incidence rates, as they adjust for under-reporting of cases in some jurisdictions and are more indicative of the current risk of being infected by residence or prolonged travel in the country/territory. These rates are effective March 24, 2006 and will be revised annually.



	2000	2001	2002	2003	2004	2005	2006	2007	2008
States	22	22	22	34	36	37	37	37	37
LGAs	338	342	350	432	494	548	650	701	774
Treatment centers	1581	1595	1605	1700	1929	2015	2219	2321	2742
Microscopic centers	400	407	417	477	547	592	650	794	900

Progress towards DOTS Expansion

Some of the Factors Responsible for the TB Epidemic

There are many factors responsible for the spiralling TB epidemic, such as poor health infrastructure, organisation, management, poverty, weak health systems and poor management of human resources. The HIV and AIDS epidemic is one of the most important risk factors for TB incidence and death in Africa. In 2003, the average prevalence of HIV among adults (15 49 years) in sub-Saharan Africa was 9%. HIV has complicated the clinical management of TB, overloaded public health services and increased the stigma associated with this ancient disease. TB is now more difficult to diagnose, and dually infected patients have a higher mortality because they often have a much more severe illness than HIV-negative TB patients due to immune-suppression. Though TB itself remains curable even in the presence of HIV, the risk of recurrence of disease is higher than in HIV-negative TB patients. TB/HIV patients are also more likely to develop adverse reactions to treatment, increasing their chances of interrupting treatment and consequently, that of developing multidrug-resistant disease.

Approximately 35% of all TB patients in sub-Saharan Africa are dually infected with HIV, compared to the global average of 8%. TB is the commonest cause of morbidity and mortality among People Living with HIV. HIV causes TB to occur more frequently, particularly in younger economically productive members of society, and especially among girls and young women (15-24 years). The additional load placed upon health systems by HIV is overstretching health care workers and facilities alike. One of the results is the increased likelihood of missing potential TB patients among the multitudes of very sick patients seen at public health facilities.

Not only does Africa have the world's worst burden of TB, but also the worst death rate among TB patients, a fact partly due to the impact of HIV. Of the 41 countries with the highest prevalence of HIV-infected TB patients, 29 of these countries are in Africa. It is estimated that almost a quarter of a million people die every year with dual TB/HIV disease, and that more than 80% of these people die in Africa.

Controlling TB in isolation from HIV therefore will not achieve any meaningful success. With one third of the world's population infected with TB (though the vast majority will not develop disease), the intersection of the HIV and TB epidemics has complicated the control of both diseases.

In Nigeria a hospital based study in Kano State showed an increasing number of TB cases with more than 50% increase between 1999 and 2003 and more than 60% of the patients were HIV positive. Approximately 35% of all TB patients are HIV-positive compared to 8% globally. Of the approximately 230, 000 people co-

infected with TB and HIV who died in 2003, over 80% were in Africa.

Because TB typically affects the most productive and economically active segments of the population, the impact of illness on communities and households is very high.

Effectively intervening in TB epidemic situation consists in:

- Provision of TB drug centres in form of DOTS not necessarily in the urban areas alone, but services should be extended even to the rural areas and this will go a long way in detecting new cases of TB infection. And since a number of TB patients may be co-infected with HIV, such centres will provide information on the co-infectious nature of TB and HIV infection in the community;
- Provision of laboratory services in some designated rural areas to at least confirm TB cases using Ziehl-Neelsen (Z-N) staining technique;
- Upgrading the laboratory services at the urban areas, such that TB cases can be confirmed not only by Z-N technique but also by using cultural technique;
- With the establishment of standard laboratory services, drug sensitivity patterns of the mycobacterial isolates could be carried out and appropriate medication could be administered to the patients;
- With the establishment of standard laboratories there is the need to build the capacity of service providers through training so that they will be acquainted with the procedures of the myco-bacteriology laboratory;
- Since a successful TB drug centre if implemented especially at rural and remote areas is likely to attract TB patients who may be co-infected with HIV there is the need to provide antiretroviral treatment (ART) to such areas;
- HIV counselling and testing should be integrated into TB care services, as such all DOTS centres should be encourage to train counsellors to support the current thinking of decentralising counselling and testing for HIV;
- Advocacy for government and donor agencies should ensure adequate and uninterrupted supply of consumables and necessary tools;
- All researches that will reveal the co-infectious nature of TB and HIV infection should be encouraged by the appropriate bodies;
- All health care providers, non-governmental organisations and the community should work towards enhancing TB care and TB/HIV co-infection management.

However, it is pertinent to know that:

- The advent of HIV and AIDS epidemic has brought resurgence in TB epidemic in the country;

- The growing poverty situation is providing an enabling environment for increase in the spread and impact of passive and active cases of TB;
- Treatment adherence is generally still difficult for TB management in many parts of the country;
- The rural poor, who are generally underserved in terms of available health facilities, are more vulnerable to the worst forms of TB epidemic.

Strategic Plan for TB Control in Africa, 2006 2015

Since the early 1990s, WHO/AFRO, in collaboration with bilateral and multilateral partners, has been supporting member states to develop DOTS-based TB control programmes as part of overall health care delivery systems. The first WHO/AFRO strategic plan for TB control in Africa spanned the years 2001 to 2005. Countries were supported to develop strategies for case detection and treatment, frameworks for national plan development and implementation, mechanisms for increasing access to high quality drugs and commodities, strategies for human resource development, systems for assessing progress and development of partnerships to mobilise internal and external resources necessary for scaling up interventions.

The second strategic plan for TB control in Africa, covering the years 2006 2015, envisages a region where TB ceases to be a major public health problem through the application of high quality, accessible and affordable TB control services. The mission is to promote and facilitate the identification, adoption and implementation of highly efficient and effective TB prevention, care and support strategies and services in all member states. The overall goal of this TB Control Strategy is to accelerate the reduction of TB related morbidity and mortality towards the achievement of the TB related Millennium Development Goal targets by 2015.

The primary objective of the Strategic Plan for TB Control in Africa is to reach and sustain the WHA control targets for 2005 extended to 2010: 70% case detection rate for new smear positive TB cases and 85% treatment success rate for those started on treatment in all member countries by the end of 2010. The indicators are the DOTS coverage, the prevalence and death rates associated with TB, and the proportion of TB cases detected and cured under DOTS. The strategic approaches to achieve these targets are:

1) Acceleration and achievement of universal access to enhanced and expanded quality DOTS services for all TB patients;
2) Health system strengthening to support expansion and extension of quality DOTS services;

3) Combating the TB/HIV dual epidemic;
4) Partnership strengthening for TB control, especially public-private partnerships and increased involvement of communities and civil society.

The implementation of the strategy will depend on country-specific frameworks for TB control, with support from relevant national and international partners. Each country should embark on phased implementation of evidence-based best practices to ensure cost-effective utilisation of available resources. Strong partnerships are essential at all levels in all sectors of the health system. A pro-poor and equity based approach to the delivery of TB control services should be adopted, and barriers to early diagnosis and effective treatment addressed in a sustainable manner. This will require innovative approaches to reach vulnerable groups and hard-to-reach populations such as slum-dwellers, nomadic populations, refugees and displaced persons.

Second Global Plan to Stop TB (2GPSTB)

The strategy for TB control in Africa is in consonance with and guided by regional and global strategic orientations, including the recently launched Second Global Plan to Stop TB (2GPSTB). The development of 2GPSTB arose from recognition of the need for a new strategy building on and extending beyond the DOTS strategy in order to achieve targets for TB control. The vision of 2GPSTB is a world free of TB, with the goal of dramatically reducing the burden of TB by 2015 in line with the MDGs and the Stop TB Partnership targets.

The Plan has four objectives:

- To achieve universal access to high-quality diagnosis and patient-centred treatment;
- To reduce the human suffering and socioeconomic burden associated with TB;
- To protect poor and vulnerable populations from TB, TB/HIV and multidrug-resistant TB;
- To support the development of new tools and enable their timely and effective use.

The components of the strategy include high-quality DOTS expansion and enhancement, radically scaled-up TB/HIV activities in line with the UNAIDS/G8 goal of universal access by 2010, addressing multidrug-resistant TB, research and development of new drugs, diagnostics and vaccines, with health system strengthening, development of partnerships with care providers, patients and communities.

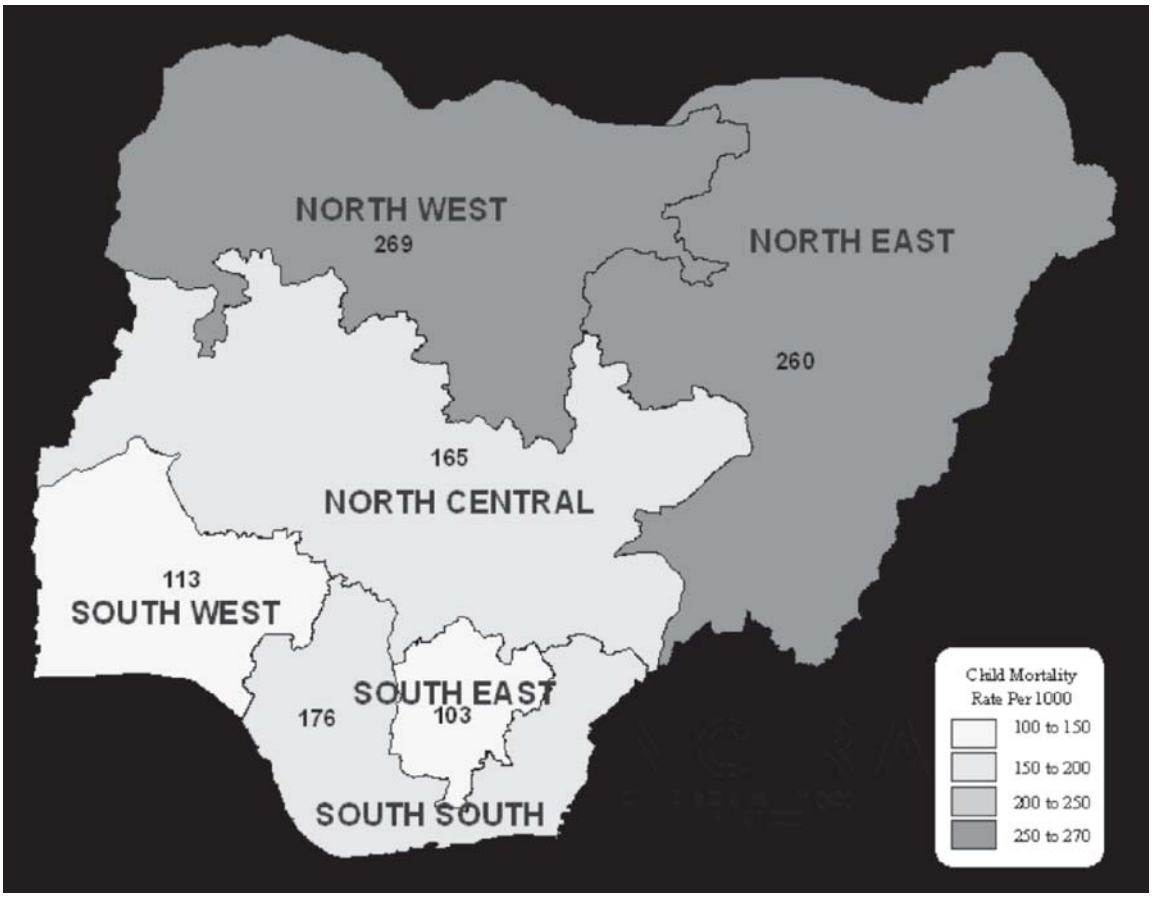
1.3. MALARIA

Genealogy

The association with stagnant waters (breeding grounds for Anopheles) led the Romans to begin drainage programmes, the first intervention against malaria. The word 'mal/aria' meaning bad air has its origins there. The first recorded treatment dates back to 1600, when the bitter bark of the cinchona tree in Peru used by the native Peruvian Indians to treat fevers came to the attention of Europe.

Similarly 2000 years ago the Chinese developed a fever medicine from the wormwood *Artemisia annua* from which artemisinins which when combined with other medicines are the leading malaria treatment today. They constitute part of Artemisinin Combined Therapies (ACTs). This plant is becoming a new cash crop in some parts of East Africa.

Not until 1889 was the protozoal cause of malaria elicited by Laveran working in Algeria, and only in 1897 was the Anopheles mosquito demonstrated to be the

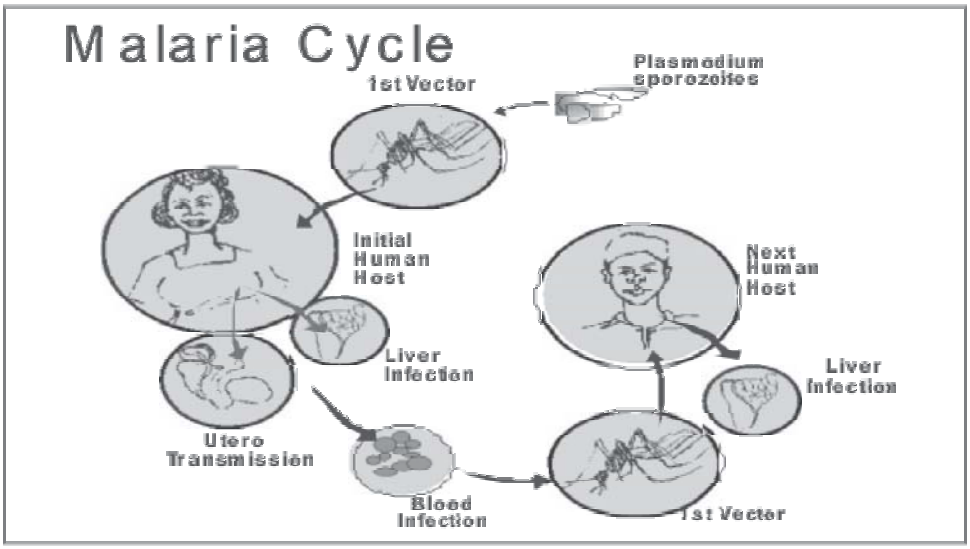


North-South disparity in child mortality (DHS 2003, Freeman)

vector for the disease. At this point the major features of the epidemiology of malaria seemed clear, and control measures started to be implemented. In east Africa for example, during the early 1900s European colonisers took quinine regularly as preventive treatment. At the same time they started controlling mosquito breeding in towns where they mainly lived and in mines and farms, where they were involved in trade activities.

Malaria is a vector borne disease, caused by the Plasmodium parasite. There are two broad methods of malaria control--controlling the parasite while it is in the human host or controlling the vector, the Anopheles mosquito, which transmits the parasite. Ideally malaria control programmes should have an element of both strategies. The development of the insecticide DDT in the 1940s gave malaria control officers a remarkably successful, cheap and long lasting tool against mosquitoes. DDT, which is sprayed on the inside walls of houses where mosquitoes rest, eradicated malaria from large parts of the globe during the 1950s and 1960s and was largely responsible for dramatic reductions in the disease burden in Latin America, East Asia and Africa. Global eradication was not achieved however and malaria is still a major cause of mortality and morbidity, particularly in Africa, despite the fact that it is entirely preventable and curable.

Malaria is a disease of warm, humid climates where pools of water constitute perfect breeding grounds for the Anopheles mosquito. With the bite of the mosquito, malaria parasites are transmitted from infected to healthy people. Once in the bloodstream, the mature parasites reach the liver where they multiply. The rapid multiplication of the parasite causes the destruction of red blood cells and the infection of new cells throughout the body. Depending upon the species of infected Anopheles mosquito, the infected person will become ill with malaria after about a week to several months, but mostly within 7-21 days.



Brief on Aetiology and Pathogenesis

Malaria in humans develops via two phases: an exoerythrocytic (hepatic) and an erythrocytic phase. When an infected mosquito pierces a person's skin to take a blood meal, sporozoites in the mosquito's saliva enter the bloodstream and migrate to the liver. Within 30 minutes of being introduced into the human host, they infect hepatocytes, multiplying asexually for a period of 615 days. They then differentiate to yield hundreds or thousands of merozoites which, following rupture of their host cells, escape into the blood and infect red blood cells.

How it escapes undetected has been a mystery until recently. The parasite acts like a Trojan horse in the dead liver cell and releases cloaking chemicals to prevent detection.

Within the red blood cells they multiply further, again asexually, periodically breaking out of their hosts to invade fresh red blood cells. Several such amplification cycles occur. Thus, classical descriptions of waves of fever coming every two (*P. vivax* and *P. ovale*, *Malaria tertiana*) or three days (*P. malariae*, Malaria quartana) arises from simultaneous waves of merozoites escaping and infecting red blood cells. P. falciparum is said to have no such cyclic fever waves.

Some P. vivax and P. ovale sporozoites do not immediately develop into exoerythrocytic-phase merozoites, but instead produce hypnozoites that remain dormant for periods ranging from several months (612 months is typical) to as long as three years. After a period of dormancy, they reactivate and produce merozoites. Hypnozoites are responsible for long incubation and late relapses in these two species of malaria. Approximately 50% of P. vivax malaria cases in temperate areas involve overwintering by hypnozoites (i.e., relapses begin the year after the mosquito bite).

The parasite is relatively protected from attack by the body's immune system because for most of its human life cycle it resides within the liver and blood cells and is relatively invisible to immune surveillance. However, circulating infected blood cells are destroyed in the spleen. To avoid this fate, the P. falciparum parasite displays adhesive proteins on the surface of the infected blood cells, causing the blood cells to stick to the walls of small blood vessels, thereby sequestering the parasite from passage through the general circulation and the spleen.

Although the red blood cell surface adhesive proteins (called PfEMP1) are exposed to the immune system they do not serve as good immune targets because of their extreme diversity; there are at least 60 variations of PfEMP1 within a single

parasite and perhaps limitless versions within parasite populations. Like a thief changing disguises or a spy with multiple passports, the parasite switches between a broad repertoire of PfEMP1 surface proteins, thus staying one step ahead of the pursuing immune system.

By the time the human immune system recognises the protein and develops antibodies against it, the parasite has switched to another form of the protein, making it difficult for the immune system to keep up.

The stickiness of the red blood cells is particularly pronounced in P. falciparum malaria and this is the main factor giving rise to hemorrhagic complications of malaria. High endothelial venules (the smallest branches of the circulatory system) can be occluded by the infected red blood cells, such as in placental and cerebral malaria. In cerebral malaria the sequestrated red blood cells affect the integrity of the blood brain barrier possibly leading to reversible coma. Even when treated, serious neurological consequences may result from cerebral malaria, especially in children.

Some merozoites turn into male and female gametocytes. If a mosquito pierces the skin of an infected person, it potentially picks up gametocytes with the blood, fertilization occurs in the mosquito's gut which means the mosquito is the definitive host of the disease. New sporozoites develop and travel to the mosquito's salivary gland, completing the cycle. Pregnant women are especially more vulnerable to mosquitoes, and malaria in pregnant women is an important cause of stillbirths, infant mortality and low birth weight.

Other mammals (bats, rodents, non-human primates) as well as birds and reptiles also suffer from malaria. However, the species of malaria found in animals is rarely infectious in humans. Three human forms (which account for most malaria cases) are completely exclusive to humans. Only one form, P. malariae, can cause malaria in both humans and other higher primates. Other animal forms of malaria do not infect humans at all.

Malaria is a serious problem in some 90 countries or territories. Over 400 million people, or 40% of the world's population, currently live in regions where there is a malaria risk. Each year, there are an estimated 300 to 500 million clinical cases of malaria and an estimated 1.5 to 2.7 million deaths. Studies in Africa indicate that as much as 20% to 30% of infant and childhood mortality may be attributable to malaria. The safe and cheap drugs that used to provide effective protection against malaria are no longer dependable in many parts of the world since in many areas the parasite responsible for the severest form of the disease, known as Plasmodium falciparum, has developed resistance. The mosquitoes that transmit

the parasite to humans have also developed resistance to insecticides in many areas. (WHO)

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Very recent advances in public health technology offer, for the first time in decades, real opportunities to make significant reductions in this important burden of disease. This is achieved by the use of insecticide-treated bednets. Mortality reductions between 17 and 63 % have been recorded in a variety of endemic settings in Africa, making this intervention extraordinarily cost-effective. However, the range of measured impact might be related to the level of endemicity and may necessitate the implementation of supplementary techniques. Many factors affect the choice of control methods for a region (vector species and behaviour, seasonality, regional infrastructure, etc.) and many of these have a spatial component. These factors necessitate that researchers revise their definition of endemicity, and how they should map malaria risk in order to better support planning and programming of malaria control.

Detailed mapping of malaria risk and endemicity has never been done in Africa. Accurate estimates of the burden of malaria mortality at the regional or district level remain largely unknown. The lack of diagnostic tools for the reliable definition of malaria-specific mortality and the previous lack of any attempt to define populations truly exposed to risk of death have led to the paucity of basic data. In the absence of such data, it is impossible to rationalize allocation of limited resources for malaria control.

All the typical clinical symptomology and severe disease pathology associated with malaria are caused by the asexual erythrocytic or blood stage parasites.

When the parasite develops in the erythrocyte numerous known and unknown waste substances such as hemozoin pigment and other toxic factors accumulate in the infected red blood cell. These are dumped into the bloodstream when the infected cells lyse and release invasive merozoites. The hemozoin and other toxic factors such as glucose phosphate isomerase (GPI) stimulate macrophages and other cells to produce cytokines and other soluble factors which act to produce

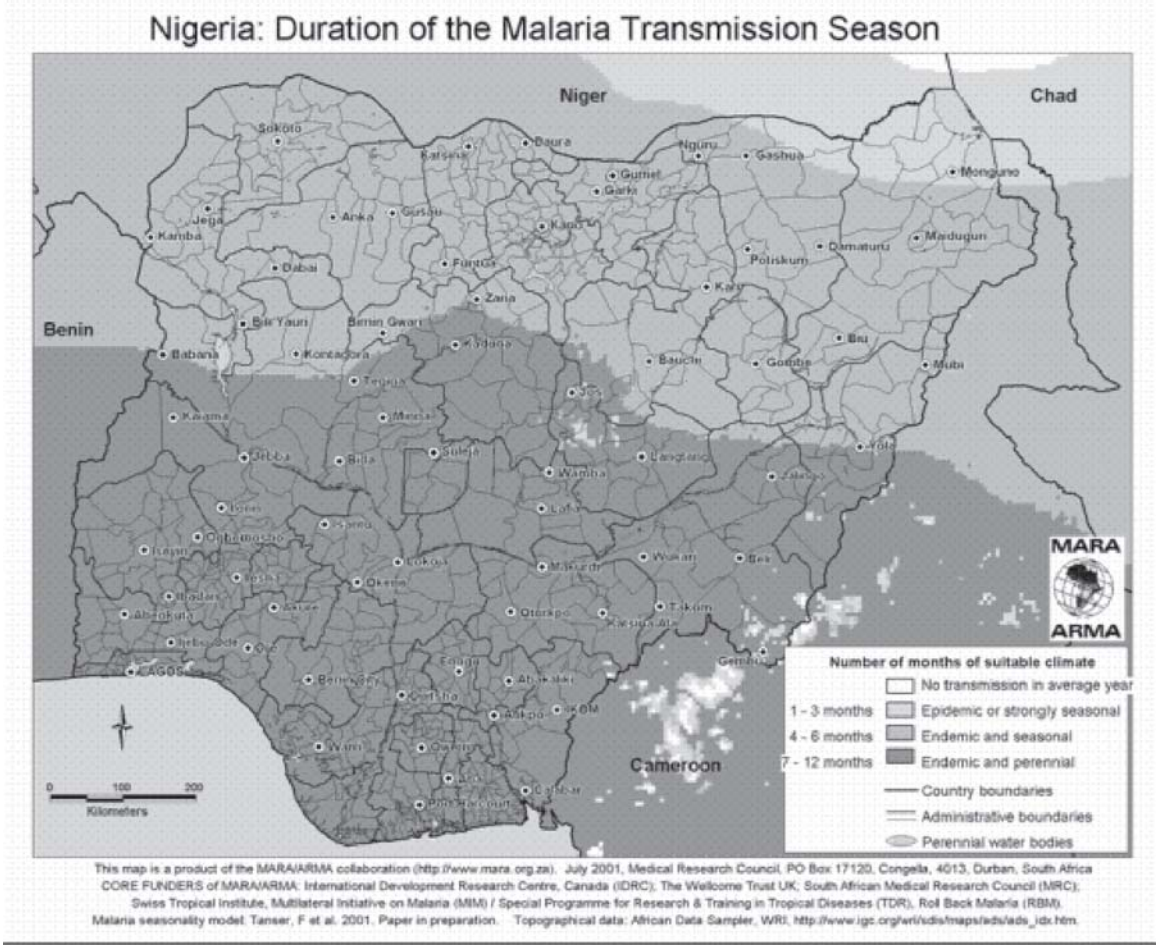
fever, rigors and probably influence other severe pathophysiology associated with malaria.

Plasmodium falciparum-infected erythrocytes, particularly those with mature trophozoites, adhere to the vascular endothelium of venular blood vessel walls and do not freely circulate in the blood. When this sequestration of infected erythrocytes occurs in the vessels of the brain it is believed to be a factor in causing the severe disease syndrome known as cerebral malaria, which is associated with high mortality.

Anemia is also associated with malaria infections and is frequently severe in children and pregnant women infected with P. falciparum. Severe anemia can also be seen with P. vivax infections. Macrophages not only clear infected erythrocytes but also phagocytize and destroy uninfected red blood cells during malaria infections. Active malaria infections also through unknown mechanisms induce bone marrow dyscrasias and suppress normal development. Intravascular hemolysis does not appear to be a major contributor to malarial anaemia except in the pathological state known as blackwater fever.

Epidemics occur in areas or situations where most of the conditions for intense malaria transmission exist, but normally one or more essential factor is lacking or is insufficient. Thus in normal years, malaria incidence is low and the transmission season short, and consequently the population is mostly non-immune. In years when the usually weak factors are exceptionally prominent and/or prolonged, the resulting intense transmission produces an epidemic. The epidemics often occur in identifiable epidemic-prone areas, where they exhibit a certain periodicity (often a 2-7-year cycle), or are linked to ecological and social disturbances. The areas along the edges of malaria endemicity often show this periodicity and can also be considered as epidemic prone, whether they are the fringes of deserts or the upper limits of highlands.

About 100 countries in the world have malaria, almost half of which are in sub-Saharan Africa. More than 2.4 billion people are at risk. There are an estimated 200 to 500 million malaria cases each year, with about 90 per cent of these occurring in sub-Saharan Africa. Malaria was the fifth most common cause of death due to communicable diseases in 1999 after respiratory infections, HIV and AIDS, diarrhoea and tuberculosis. It kills between 1.1 and 2.7 million people each year, of whom about 1 million are children under 5 years in sub-Saharan Africa. Every 30 seconds a child dies of malaria. In Africa, it is the leading cause of death for children under five years, causing at least 20 per cent of all deaths. Children recovering from malaria infections may be left with significant mental and physical disability. In Africa, at least 24 million pregnancies are threatened by malaria each year.



Pregnant women are more susceptible to malaria infection than non-pregnant women. Malaria causes low birth weight - mortality in these infants is four times higher than in normal birth weight infants. Malaria causes an immense burden on health systems, being responsible for about 30 per cent of all outpatient visits and 20 to 50 per cent of all hospital admissions in countries with malaria in Africa. The Strategic Plan 2009-2013 for malaria control in Nigeria puts the clinically diagnosed malaria cases per year at 110 million. There are an estimated 300,000 children dying from the disease every year and 11% of maternal mortality is also due to malaria. Malaria also accounts for 60% of outpatient visits and 30% hospitalisations in the country.

The historic Abuja Declaration commits governments to an intensive effort to halve the burden of malaria in Africa by 2010. Malaria is a disease of poverty. Poor people are at increased risk of becoming infected with malaria, and malaria is a major contributing cause of poverty in endemic areas it makes poor people poorer. The MDGs link achievement of health outcomes - with malaria control as an indicator for progress - to the elimination of poverty.

Economic losses due to malaria in Africa are estimated to be about US$12 billion

per year. It's estimated that malaria is responsible for reductions in gross domestic product from 0.6 per cent to 6 per cent in African countries. The needs for malaria control have been estimated to be about US$3 billion. Deaths following acute fever (mostly malaria) were 39 per cent higher among the poorest socio-economic group than the richest in an area of Tanzania. The cost of malaria care is 1 per cent of the income of the rich in northern Ghana but 34 per cent of the poor households' income.

Despite initial success, especially in Europe and North America where malaria was completely eradicated, success elsewhere was mixed. In Africa the picture was mixed. In a few areas, for example the southern fringes of malaria transmission, the high altitude areas, Islands far from the African continent, there were good signs of mastering malaria. In many parts of Africa, particularly in the Savannas, success was very limited. As a result, and taking into account the historical tumultuous changes of the early 1960s, malaria eradication in Africa was totally abandoned. Countries in Asia and Latin America persisted in their efforts, and the difference in the malaria picture in these continents versus Africa is very obvious.

Malaria kills between one and three million people each year, most of them children in sub-Saharan Africa. The disease's lasting effects on survivors reduce GDP by 1 percent every year, and economic development lags as a result. Malaria is endemic throughout Nigeria, and the WHO estimates the malaria mortality rate for children under five in Nigeria at 729 per 100,000. In April 2004 Nigeria's Minister of Health reported that Nigeria spent over $1 billion annually in treating malaria, and that malaria was the cause behind one out of three deaths in children, and one out of ten deaths of pregnant women. He cited chloroquine resistance as a growing problem, owing in part to counterfeit drugs.

Chloroquine (CQ) was an effective therapy to prevent and treat malaria for forty years until resistance to it developed in Southeast Asia and the Amazon basin in the 1950s. Today its efficacy is no longer reassuring in tropical Africa, the region worst affected by the disease.

Despite heightened efforts to combat malaria such as the Roll Back Malaria campaign launched in 1998, malaria prevalence is in fact increasing. As growing resistance to Chloroquine (CQ) renders the therapy useless, malaria programmes must turn to artemisinin-based combination therapy (ACT) such as Coartem. ACT has treated the disease successfully throughout Africa. A fundamental hurdle to eliminating malaria across the globe is that we are not dealing with a single brand of the disease. The vector mosquitoes are different, and the intensity of transmission can vary widely, so our control strategies should as well.

Some Symptoms, Signs and Effects

The most important sign of malaria is fever. The symptoms in children and adults infected with malaria might also include shivering, severe pain in the joints, headaches, vomiting, generalized convulsions and coma, but also coughing and diarrhoea.

Early diagnosis and treatment saves lives and prevents the development of complications: A very high body temperature, drowsiness, convulsions and coma are indicative of cerebral malaria. Jaundice and reduced urine output are signs of liver and/or kidney failure. If children, in particular, are not treated early, the disease can lead to death. In most cases, severe anaemia is the cause of death in children not treated early after manifesting symptoms and signs of malaria.

Pregnant women, and children under five, are especially vulnerable to malaria. The severe anaemia caused by malaria in pregnant women can result in miscarriage, premature or stillbirth. Babies born to women infected with malaria during pregnancy are likely to be small and weak, making them especially vulnerable to infections. These babies have an increased risk of mortality.

Despite initial success, especially in Europe and North America where the disease was completely eradicated, success elsewhere was mixed. In Latin America and many parts of Asia, there were successes, mainly at control. In Africa the picture was mixed. In a few areas, for example the southern fringes of malaria transmission, the high altitude areas, and islands far from the African continent, there were good signs of mastering malaria. In many parts of Africa though particularly in the Savannah, success was very limited. As a result, and taking into account the historical tumultuous changes of the early 1960s, malaria eradication in Africa was totally abandoned. Countries in Asia and Latin America persisted in their efforts, and the difference in the malaria picture in these continents versus Africa is very significant.

Recently African countries that have reverted to DDT use have seen spectacular successes in their malaria control efforts. These include South Africa, Mozambique, Zambia, Madagascar and Swaziland who within two years of starting DDT programmes, slashed their malaria rates by 75 percent or more. With fewer people getting sick, they could access ACT drugs to nearly all victims, and cut rates even further. Surely other African countries should learn from these shining examples, instead of sitting on the fence appeasing environmentalists, who care less of human life.

Malaria is a classic neglected disease, characterised by a high disease burden in

the developing world, a low disease burden in high-income nations, and a low level of funding in relation to the disease burden. As with other neglected diseases, the perceived lack of a lucrative consumer market for antimalarial products is used to explain the relatively low rate of research and development (R&D) investment by the private sector and why government support has historically formed the cornerstone of malaria R&D funding.

The insecticides used on bed nets today, which are called pyrethroids, illustrate the point well. They were introduced in agriculture during the 1970s. In the following decade (1980s) trials on bed nets started. By the mid 1980s scientists working in Gambia and Tanzania published papers demonstrating their efficacy in mosquito control; by the early 1990s there were already publications confirming their protection of human beings. Unfortunately it is only now, close to three decades after their introduction in agriculture, that we are witnessing attempts at their mass scale up for real public health impact.

Furthermore the impact of these insecticides cannot be expected to last forever; indeed there is already good scientific evidence predicting their future failure. When they fail, if the global insecticidal arsenal has not changed, there will be no fallback position. As the chemical industry is least interested in developing protective products for the poor, and governments, particularly of malaria endemic countries which need the alternative are more or less incapacitated, there might be real grave danger when pyrethroid resistance increases to the point of affecting control programmes.

Continental sub-Saharan Africa was never a part of the global malaria eradication programme. The severity of the disease, the density and efficiency of An. Gambiae mosquito vectors, the problem of eradicating the disease over such a large land mass with recurrent reinvasions, high costs, and subsequent maintenance must have all contributed to the lack of will to undertake an eradication programme. Also, the eradication programme period coincided with the colonial and immediate postcolonial period, during which little or no indigenous capacity was available to initiate and sustain malaria eradication. After a period of laissez faire regarding malaria control, these countries have had to face the re-emergence of the disease.

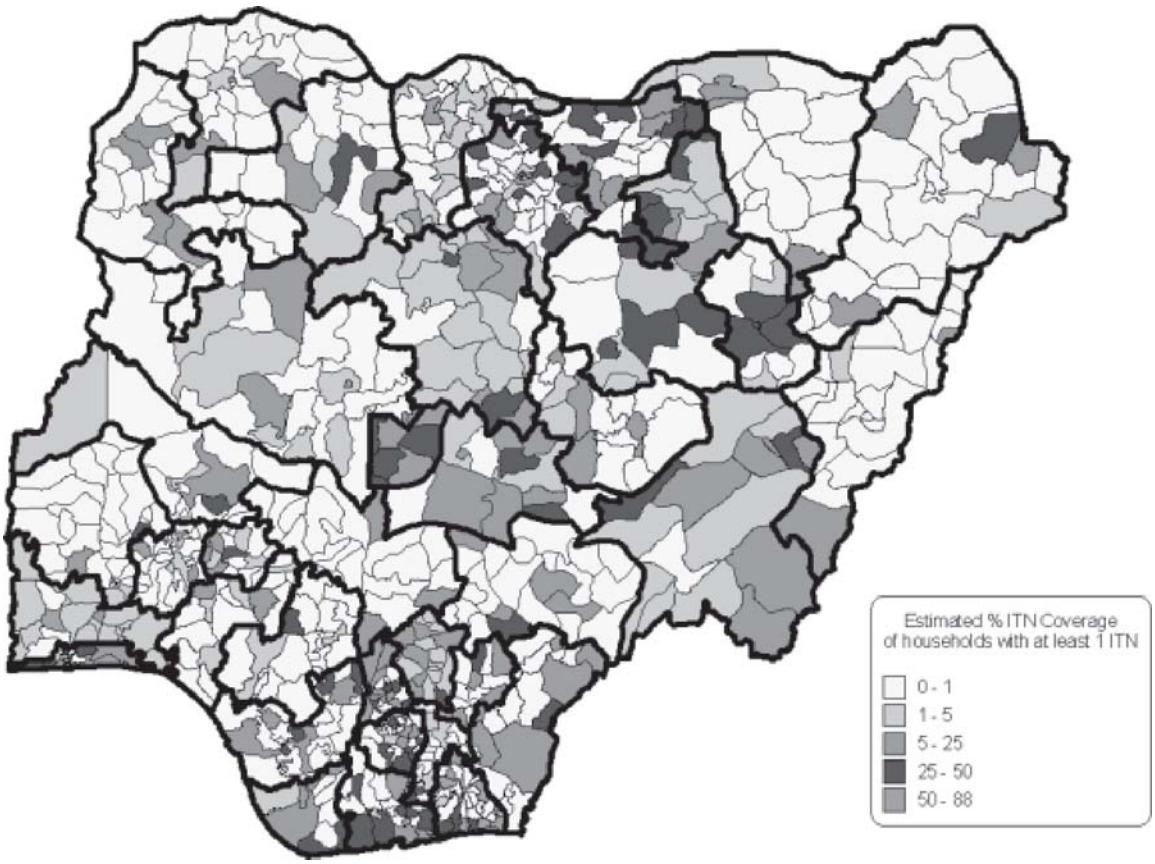
In recent years, reported malaria cases have been rising especially in Sub-Saharan Africa. In part, this rise may be due to the improved coverage of Health Information Systems (HIS) and misdiagnosis due to a general rise in fevers associated with other diseases like HIV and AIDS. Some of the mentioned reasons for this resurgence include among others; deteriorating health sectors within the region, a breakdown in malaria control efforts, rising drug and insecticide resistance, population movements and environmental changes favouring

increased malaria transmission.

The increase in incidence of drug and insecticide resistance deserves special mention. In Africa drug resistance, as we know it today, started in East Africa during the late 1970s. Eventually chloroquine resistant malaria became prominent in the late 1990s. This led to many unnecessary deaths. Today we face a mounting wave of Sulphadoxine Pyrimethamine (SP) resistance, and adequate attention is not yet given to this phenomenon.

Efforts in Malaria Treatment and Management

Notwithstanding the malaria mortality and morbidity, progress is being made. African countries in 2000 committed themselves to providing by the end of 2005 prompt and effective treatment and insecticide-treated nets (ITNs) for 60% of the people at highest risk of malaria and intermittent preventive treatment (IPT) for 60% of pregnant women. Initially, implementation of these measures was severely limited by a shortage of resources for procurement of commodities. But the



Projected ITN Household Coverage Based on Public Sector Distribution by 2008

situation in some countries is improving. Some countries have reached or exceeded at least some of these targets with recent increases in funding from new sources. Most remaining countries are now poised to begin scaling up, although substantial challenges remain.

With respect to prompt and effective treatment, surveys have shown that on average half of African children with fever are treated with an antimalarial drug, but most of these treatments involved chloroquine, against which resistance of the P. falciparum parasite is very high. Increasing availability of artemisinin-based combination therapy (ACT), a new and highly effective treatment against falciparum malaria, is expected to improve treatment outcomes within the next few years. By the end of 2004, 23 African countries had changed their national drug policy and adopted ACTs.

With respect to progress on prevention, the number of ITNs distributed has increased 10-fold during the past 3 years in more than 14 African countries. Subsidised or free-of-charge ITN distribution has proved successful in increasing coverage of the most vulnerable populations.

In most African countries, many more households have mosquito nets not treated with insecticide than ITNs. Scaling up of insecticide re-treatment services will therefore also be an important factor in increasing ITN coverage. The recent introduction and manufacture of permanently treated nets, is expected to greatly improve overall efficacy and effectiveness.

Efforts to prevent the silent but significant burden of asymptomatic infections in pregnant women residing in areas of stable malaria transmission have been revitalised through partnerships between malaria and reproductive health programmes. A total of 11 African countries, in addition to scaling up delivery of ITNs to pregnant women, are now in the process of implementing intermittent preventive treatment (IPT) for pregnant women.

Over the last three decades there has been considerable interest in research and development of malaria vaccines. The research results obtained revealed that malaria vaccine candidates would differ not only in their biological properties, but also in their eventual applications: pre-erythrocytic stage vaccines, also called sporozoite vaccines would generally prevent malaria infections, asexual stage malaria vaccine candidates also called blood stage vaccines would prevent disease, and the sexual stage (gametocytes) malaria vaccine candidates which are also referred to as transmission blocking vaccines would block malaria transmission.

There is clearly a need to take advantage of ongoing advances in scientific research especially in biotechnology and related endeavours to develop the badly needed malaria vaccines. In order to sustain such efforts and ensure their eventual deployment in malarious communities it is absolutely essential that African researchers participate fully in the creation of the new products so as to ensure their progress in the entire product development pipeline. An examination of the malaria vaccine development process however reveals that all malaria vaccine discoveries, patenting, pre-clinical testing, are undertaken in well endowed northern institutions.

A major achievement since 2000 has been the number of countries changing their treatment policies to adopt artemisinin-based combination therapy (ACT) as first-line treatment in response to progressive failing of chloroquine and evidence from some countries that change to another monotherapy such as sulfadoxine-pyrimethamine (SP), was unlikely to provide satisfactory cure for long. Following adoption of the Abuja malaria coverage targets in 2000, most countries have worked on their strategies to attempt to achieve the insecticide-treated net (ITN) utilisation rate target.

Malaria is a major cause of morbidity and mortality in Nigeria. It accounts for 25% of infant mortality, 30% of childhood mortality and 11% of maternal deaths. At least 50% of the population suffers from at least one episode of malaria each year. Given its total population of 140 million, this translates to about 70 million people suffering from attacks of malaria yearly. It is estimated that children under the age of 5 years have 2 to 4 attacks of malaria annually. This, not only affects the psychological well being of individuals, families and the nation, but also impedes social and economic development, making the poor poorer. It is the commonest cause of mortality in children under the age of five years. Malaria ranks among the top three causes of death in the country despite the fact that malaria is preventable, easily treated and curable. It is the commonest cause of outpatient visits to health facilities and increases the vulnerability to other diseases.

The economic burden of malaria is also substantial. Every year the nation loses over N132 billion due to absenteeism from work, school, farm, and cost of treatment as a result of malaria. The cost of malaria to households and communities, in terms of direct and indirect costs are significant. Direct costs include public and personal expenditures in relation to both prevention and treatment of malaria. Indirect costs include such factors as reduced productivity and working days, poor performance and long- term disability from neurological damage.

A study indicated that a single case of malaria cost about $9.84. Of this $1.83 was

spent on direct medical cost and $8.01 was the indirect cost relating to loss of income associated with malaria illness and death. This economic burden falls heavily on low-income households. One survey conducted showed the cost of prevention and treatment represented about 20% of income in poorer household.

The presence of malaria has also been shown to have a negative impact on macro economic growth, inhibiting long-term growth and development to a degree that was previously unimagined. A comparative study of countries with and without malaria suggest that the presence of a high malaria burden like in Nigeria results in a 1.3% lowering of the annual growth of the Gross Domestic Product per capita. Malaria influences socioeconomic decisions, such as citing of industrial projects, and it impacts negatively on the ability to attract capital developments and skilled labour. The presence of malaria is also an obstacle to the development of tourism in many regions. Economists have also analysed the costs and benefits of malaria interventions. One of such study, based on data from sub-Saharan Africa, estimated that the net benefit of implementing a comprehensive package of malaria would be 18 times greater than the cost.

Previous efforts have been made in the past to control malaria in Nigeria. Before and during the World Health Organisation global malaria eradication period (1955 1968), Nigeria was selected as one of the countries for the conduct of malaria pre eradication pilot epidemiological studies. Results of the pilot studies were not encouraging and malaria control rather than eradication was recommended for Nigeria.

Other previous malaria strategies, plans and interventions include:

a. 1955 - 1968 pre-eradication pilot studies, Kankayi District Project findings
i ndicated that malaria eradication was not feasible. 1955 1968 Division of Malaria and vector control was established within the then Medical Department now FMOH. The division is the leading malaria control implementing organ in Nigeria.

b. 1975- National Malaria Control Committee set up, with membership drawn from the Federal, State Ministries of Health, Universities and other relevant sectors. The Committee produced 5-year plan of action, (1975 1980) whose objective was to reduce malaria burden by 25% all over Nigeria within the period. It became latent for years but has been reconstituted for effective implementation of RBM.

c. 1981 -85 Malaria control became a joint venture between Federal, States and Local Governments, while the committee was reconstituted to ensure multisectoral approach to malaria control. A 5-year plan was drawn to reduce malaria morbidity and mortality by 50% within the 5-year period.

Activities to achieve these included; distribution of drugs both as chemoprophylaxis for vulnerable age groups and treatment of fever in primary school children.

d. 1987- National Malaria Technical committee was set up to assist FMOH plan and carry out priority. National Malaria Therapy surveillance Network was established in the four PHC zones to monitor sensitivity of P. falciparum to selected antimalarial drugs (1987 1990).

e. 1988 - Health system reforms and adoption of National Health Policy for the country and malaria fell within the concept and technology of Primary Health Care.

f. 1989 - National Guidelines on malaria Control were prepared by FMOH.

g. 1992 - Pilot Project for ITN, investigating efficacy of permethrin.

h. 1996 - National Malaria Control Plan of Action (1996 2001) by Malaria and vector control Division.

i. 1998 - Birth of RBM, which provided a new approach, which emphasized evidence based planning, decision-making and partnership (public and private) involving stakeholders in overall integration of disease control evolved. The present strategic plan is drawn up with this framework. This strategic plan was based on the data generated from situation analysis.

Other issues considered include the country profile, overall malaria situation, health system, socio-economic situation and selected evidence-based technical interventions, costing frame and mapping of partners and resources management.

Effective intervention in malaria epidemic consists of:

- Advocating for the production and wide distribution of guidelines for malaria control in target area;
- Presumptive malaria diagnosis, treatment and community mobilisation as a basis of malaria control in rural and sub urban areas;
- Advocate for cheaper and more effective antimalarial drugs;
- Education of mothers on simple home treatment of malaria and when to come to a health care facility using training and information packages;
- Training and re-training of health care providers on the current management of malaria and its complications;
- Improving regulation in collaboration with NAFDAC and intensify inspection of drug providers and suppliers premises;
- Promoting local manufacture of anti malarial drugs including research into combination drugs and use of local herbal remedies;
- Involving village health workers and traditional birth attendants;
- Advocating the review of school curricula to include modules on prevention,

and management of malaria;
- Recognising the role of other NGOs and integrate them into the planning and implementation of malaria control programmes.

However, it is pertinent to know that:

- Majority of the health facilities are usually faced with stock out of antimalarial drugs;
- Funding of health sector is poor and the amount allocated to malaria in Nigeria is very negligible;
- Majority of patients with severe malaria died due to poor quality care and poor referral system;
- Laboratory support for diagnosis is still poor in many places; and treatment is still based on symptoms and not on laboratory investigation results;
- Personnel in health facilities are poorly motivated and inadequately trained to manage malaria and treatment guidelines were not available at sampled health facilities;
- Referral networks are poorly developed and monitoring and evaluation poorly developed;
- Problem of substandard drugs (a study in eastern Nigeria show that 50.5% of mothers obtained drugs from PMVs and 89% of these drugs were substandard);
- Reporting of malaria mortality in the communities is poor due to wrong perception on the cause of the disease;
- Perception of the cause of malaria is still poor, and very few people in the community link mosquito to malaria resulting in visitation of traditional healers or use of homemade concoctions, which are detrimental to health. There is also poor knowledge of management of convulsions and delay and sometimes no referral to better health facilities;
- Law enforcement agents hinder the activities of Patent Medicine Vendors (PMVs) who are usually the first port of call for community members.

Methods

Plenary presentation, Interactive Discussion, Experience Sharing, Group session/Planning/exercise, Assignment, Group presentation, Demonstration, Role play, plenary discussion, Evaluation

Group work/exercises

Group 1: (HIV/AIDS)

A. State five factors that militate against CSOs' roles in effectively understanding the HIV/AIDS epidemic and therefore negatively affecting interventions in your area.
B. How can these be effectively addressed by the CSOs?

Group 2: (Malaria)

A. State five factors that militate against CSOs' roles in effectively understanding the Malaria epidemic and therefore militating against interventions in your area.
B. How can these be effectively addressed by the CSOs?

Group 3: (TB)

A. State five factors that militate against CSOs' roles in effectively understanding the TB epidemic and therefore militating against interventions in your area.
B. How can these be effectively addressed by the CSOs?

1.4 Sexual and Reproductive Health

Reproductive health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity, in all matters relating to the reproductive system and its functions and processes" (WHO, 1994).

Definition of reproductive health care as defined by United Nations in 1994:

> "...the constellation of methods, techniques and services that contributes to RH and well-being by preventing and solving RH problems. It also includes sexual health, the purpose of which is the enhancement of life and personal relation, and not merely counselling and care related to reproductive and sexually transmitted diseases."

Sexual and Reproductive health (SRH) care is aimed at achieving the following:

- That people are able to have a satisfying and safe sex life;
- That they have the capability to reproduce and the freedom to decide if, when and how often to do so;
- The right of men and women to be informed (about) and to have access to safe, effective, affordable and acceptable methods of family planning of their choice, as well as other methods for regulation of fertility which are not against the law;
- The right of access to appropriate health care services that will enable women to go safely through pregnancy and childbirth and provide couples with the best chance of having a healthy infant.

Rationale for SRH/HIV Integration

The majority of HIV infections worldwide are sexually transmitted or associated with pregnancy, childbirth and breast feeding. Linkages and integration of SRH /HIV can occur at several levels and varying degrees within a health system. Linkages involves addressing structural issues that leave people vulnerable while integration involves the reorganisation and reorientation of policies, programmes and services to ensure the delivery of a set of essential interventions as part of the continuum of care for HIV prevention, care and treatment. Integration also consists of delivering multiple services or interventions to the same patient by an individual healthcare worker or by a team of healthcare workers and, possibly, workers from other fields. The purpose of integrated and linked programming and services is to

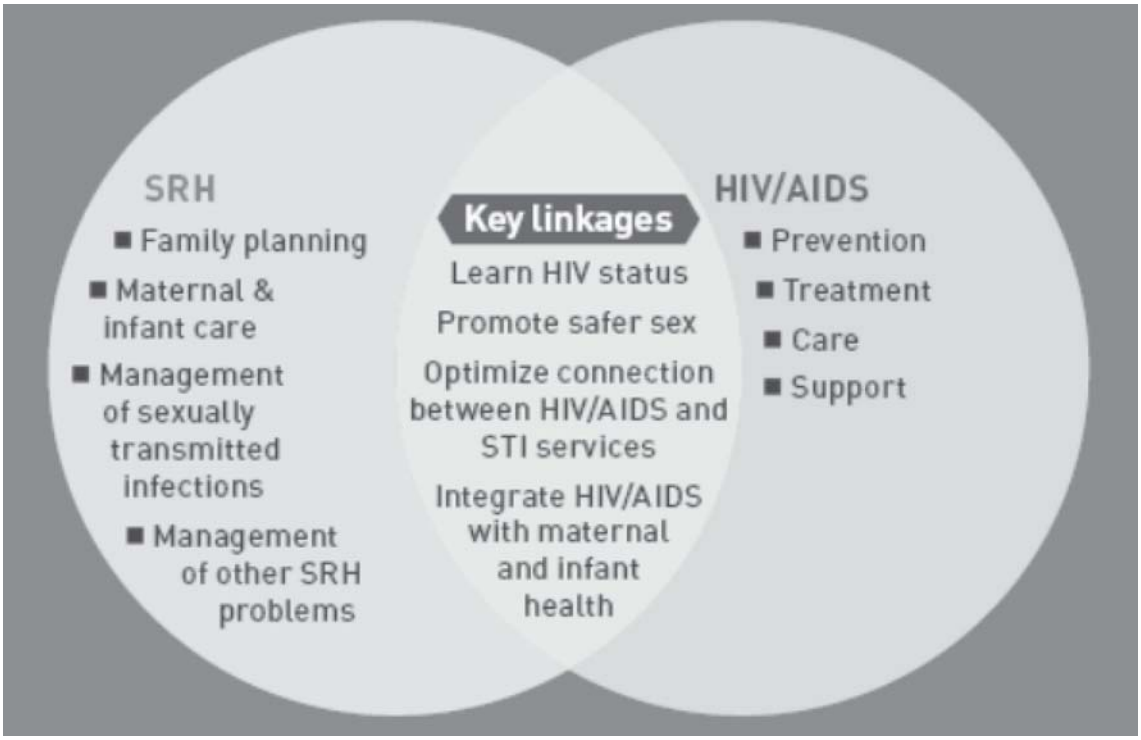
ensure that individuals and households benefit from mutually reinforcing interventions. An integrated approach uses appropriate opportunities to engage the client in addressing her/his broader health and/or social needs besides those that prompted the encounter, ensuring that no opportunities are missed.

The incorporation of HIV programmes with all components of SRH in Nigeria will assist the government at all levels to provide needed services to the generality of Nigerians. Integrating SRH and HIV services holistically addresses clients dual risks of HIV infection s and unintended pregnancies while also providing opportunity for clients who do not want t seek stand alone services due to fear of stigma. It also reduces the cost of services for both government and families.

Definitions:

Linkages: Understanding the synergies, at the conceptual and strategic levels that can be created when seeing common approaches to addressing specific health issues.

Integration is the operational, concrete processes of implementing linkages i.e. how linkages can occur in various forms and at different levels, ranging from referrals to full integration of services or programmes.



Framework of linkages (WHO, UNFPA, UNAIDS, IPPF)

Benefits of Integrated services:

- Increases people's access to a range of information and services that can reduce unsafe sexual behaviours with health and social services that respond to the realities in which they live;
- Reduce sexually transmitted infections including HIV;
- Help people stay uninfected or healthy if they are HIV-positive;
- Strengthen health systems and increase access to health care among women and vulnerable or marginalised groups;
- Reducing all unintended pregnancies with a direct impact on reduction of maternal mortality;
- Improved provider counselling skills and greater client satisfaction;
- Increased access to VCT services;
- Reduced stigma and discrimination associated with HIV;
- Increased awareness of healthy sexual behaviour;
- Reduced risk of HIV infection through STI prevention, detection and treatment;
- Expanded access to FP for VCT clients including men and youth;
- Educating young people about sexuality and reproductive and disease outcomes and addressing gender norms that affect power and sexual relations;
- Reduction of mother to child transmission of HIV through prevention of unintended pregnancies;
- Providing access to services at various entry points that include HIV into SRH /FP and SRH /FP into HIV;
- Ensures that reproductive health and rights of people living with HIV are addressed and respected;
- Ensures that there are no missed opportunities for intervention.

The importance of linking sexual and reproductive health (SRH) and HIV/AIDS policies, programmes, and services has been acknowledged by major international agencies. These linkages are considered essential for meeting international development goals and targets, including the United Nations Millennium Development Goals. Clients seeking HIV services and those seeking SRH services share many common needs and concerns, and integrating services enables providers to efficiently and comprehensively address them. In addition, strong linkages help to ensure that the SRH needs and aspirations of all people, including people living with HIV, are met. Family planning (FP) is one aspect of SRH where linkages with HIV programmes are especially important. Integrating

FP services into HIV prevention, treatment, and care services provides an opportunity to increase access to contraception among clients of HIV services who do not want to become pregnant, or to ensure a safe and healthy pregnancy and birth for those who wish to have a child. In countries where FP services are well used, integrating HIV services into the existing FP infrastructure is an opportunity to expand HIV prevention efforts and increase the use of care and treatment services. In both approaches, integration has the potential to draw on the strengths and resources of both programmes in order to increase access to services, improve health outcomes for the mother and infant, and contribute to HIV and FP interventions.

Client Benefits of Integrating Family Planning and HIV/AIDS Services

Family planning can improve the health of women by delaying first births, lengthening intervals between births, reducing high-risk pregnancies, and reducing unintended pregnancies that could lead to unsafe abortions. In addition, use of male and female condoms can prevent sexually transmitted infections (STIs), including HIV.

Among women and men with HIV who are sexually active and do not wish a pregnancy, contraception has the added benefit of reducing HIV-positive births and, by extension, the number of children needing HIV treatment, care, and support. Indeed, prevention of unintended pregnancies in HIV-positive women is one of the four cornerstones of a comprehensive approach to the prevention of mother-to-child transmission (PMTCT) of HIV. Nevertheless, unintended pregnancies among women with HIV remain unacceptably high.

For clients who are already accessing FP services, the addition of HIV counselling and testing provides an opportunity for this sexually active population to learn their HIV status, how to protect themselves from infection if they are HIV- negative, and how to prevent transmission to their sex partners and infants if they are HIV-positive. Strategies to help more people learn their status can also facilitate access to HIV treatment, care, and support. In many countries, family planning service settings can serve as a platform for provider-initiated testing and counselling (PITC).

For women and men with HIV who want to have children, linkages between SRH and HIV programmes are important to ensure access to services that will allow for a safe pregnancy and delivery. These services include, but are not limited to, preconception counselling and antiretroviral therapy (ART) to reduce vertical

transmission risks. Closely spaced births and HIV/AIDS both increase risks of adverse pregnancy outcomes, such as low birth weight, preterm birth, and infant mortality. Counselling on healthy timing and spacing of pregnancies is therefore especially important for women with HIV who want to have a child. Individuals in sero-discordant relationships might need information on minimising the risk of infecting their partners along with assisted conception services.

Strategic Considerations for the Integration of Family Planning and HIV Services

Four key questions and corresponding activities are central to systematically and strategically pursuing stronger linkages between FP and HIV policies, programmes, and services:

- What type of service integration, if any, is needed?
- To what extent should services be integrated?
- What steps are needed to establish and sustain high-quality integrated services?
- What information is needed to measure programme success and inform programme or service delivery improvement, replication, or scale-up?

Stakeholders

Key stakeholders involved in the process of integration of SRH and HIV/AIDS include the following:

- Federal Ministry of Health (FMOH)
- State Ministry of Health (SMOH)
- Local government areas (LGA)
- Community based organisations (CBOS)
- Faith based organisations (FBOS)
- Private health sector
- Developmental partners
- Nongovernmental organisations (NGOs)
- Professional health Associations
- Training institutions
- Community leaders

Specific Opportunities for Integration

Specific areas for integrations in SRH and HIV interventions are as listed below:
SRH settings:

- Safe motherhood (prenatal, intra-natal and post-natal)
- Family planning services

- Sexually transmitted infection and HIV/AIDS
- Post abortion care services
- Adolescent reproductive health
- Reproductive system cancers
- Infertility and sexual dysfunction
- Harmful practices, reproductive rights and gender issues
- Menopause and andropause
- School health services
- Infant and under-five health services (immunisation, well baby clinics)

HIV and AIDS Programmes

*HCT/VCT
*PMTCT
*ART
*Palliative care, including home based care
*HIV prevention
*TB/HIV
*STIs/HIV
*Orphans and vulnerable children (OVCs)

Levels of Integration

- Primary healthcare level: At the primary healthcare level, advocacy, mobilisation and awareness creation of services within the locality and at the community level. Provision of health information and services. Strong referral linkages should be established at this level.
- Secondary healthcare level: Beyond advocacy, mobilisation and awareness creation, the secondary healthcare level provides services at a more specialised level than the primary healthcare level with a wider spectrum of services for integration. Referrals of complicated cases should be established to the tertiary level.
- Tertiary healthcare level: Service provision, client management, provision of specialised testing and manpower development in forms of trainings of healthcare providers on HCT, PMTCT and other necessary skills.

Benefits of Different Types of Family Planning/HIV Service Integration

HIV Counselling and Testing:

This approach reaches men, youth, couples, and unmarried women who might not use traditional family planning (FP) programmes but who have unmet needs for contraception and FP information and services.

Family planning counselling provides an opportunity for both HIV-positive and HIV-negative clients to avoid initial or subsequent unintended pregnancy. FP counselling provides an opportunity to promote correct and consistent condom use for dual protection against STI/HIV acquisition or transmission and unintended pregnancy.

Model of integration of FP into HIV/AIDs intervention

All facilities will

- Decide at which level to start in implementation of the integration
- Assess/evaluate for pregnancy and STI/HIV risks
- Provide information on FP/STIs/HIV&AIDs
- Refer clients for services not available at the centre

The Four Levels of FP Integration into HIV/AIDS programmes

Level 1: Offers condoms and pills (consistent and correct condom use)
Level 2: Offers condoms, pills and injectibles
Level 3: Offer condoms, pills, injectibles, IUCDs and implants
Level 4: Offers condoms, pills, injectibles, IUCDs, injectibles, implants and sterilisation.

Prevention of Mother-To-Child Transmission of HIV (PMTCT) programmes:
Family planning information targets women of reproductive age who were recently and might still be sexually active, but have a high probability of future pregnancies, and are known to be HIV positive. Most PMTCT clients are reached during antenatal care (ANC) when they are pregnant and the uptake of an FP method is not possible. All intentions to initiate an FP method require follow-up at delivery and/or postpartum.

Postnatal care services: Postpartum women have high levels of unmet need for FP. Multiple provider contacts (during antenatal, intra-partum, and postpartum care, and with transition into paediatrics care and care for the woman) are opportunities to repeat FP messages.

HIV Care, Treatment, and Support Settings: This approach reaches only HIV-positive clients, thereby maximising opportunities to prevent unintended pregnancies among clients who do not wish to become pregnant and reduce mother-to-child transmission. It provides opportunities to reach men with FP information and services. Regular repeat visits allow for reiterating FP messages, resupplying FP methods, following up for complications and side effects, and meeting changing fertility desires. Providers are familiar with clients' HIV status, health status, and treatment regimen, all of which they can take into account when

providing FP counselling.

FP/HIV care, treatment, and support settings might be a less stigmatising or discriminating environment for PLHIV to discuss fertility intentions, contraception, and sexuality. Established linkages between HIV treatment programmes and community volunteer services for adherence support offer a natural fit for FP follow-up. The uptake of HIV services (particularly CT services) among FP clients might increase. Integrated services reduce the stigma associated with freestanding HIV clinics and might thereby increase the use of HIV services. The availability of HIV services could attract clients who do not typically access FP services and thereby foster new contraceptive users. Providers are able to tailor contraceptive counselling based on the client's HIV status. Also, integrated services offer opportunities for HIV prevention counselling among women of reproductive age, including married women who might underestimate their risk of HIV.

Community-Based FP Programmes: Integration offers opportunities for linking with community outreach programmes. The integration allows for holistic sexual health counselling. It serves hard-to-reach populations through various models of service delivery, such as mobile, outreach, and home-based counselling and testing. This is achieved through leverages between existing community FP services (for example, community-based promoters and distributors) to add HIV counselling and referrals. Many community-based FP workers already provide some information on HIV, AIDS, and STIs.

Some Key Actions for the Health Systems Strengthening Interventions to Improve Sexual and Reproductive Health Programmes in Nigeria

SRH/HIV integration presents new challenges which calls for a reorientation and redirection of management efforts enabling utilisation of available resources and reduce missed opportunities.

1. Advocate for the integration of reproductive health and reproductive rights into all related development priorities and programmes at National level;
2. Promote multi-sectoral actions and approach to implementation of SRH/HIV programmes;
3. Stimulate adherence to essential principles for the implementation of reproductive health policies and programmes include participatory processes, involvement of multiple perspectives and multi-sectoral action;
4. Foster ownership and sustainability particularly at the community level;
5. Ensure consistency and complementarity in application of approaches;

6. Coordinate integrated SRH and ATM activities;
7. Assist in the identification of reproductive health needs and priorities for integrated response;
8. Support capacity for planning and implementation of integrated ATM & SRH policies and programmes within national constraints, objectives and approaches;
9. Promote integration of all aspects of reproductive health, especially those delivered in the past through vertical programmes;
10. Support capacity building for monitoring and evaluation in a way which is helpful to programme management and useful at the point of delivery of integrated intervention.

Taking Community Sensitive Actions: What Can ATM Networks Do?

Almost all countries struggle to expand access to health services because of insufficient resources, many countries initially offer a core package of somehow parallel basic services that are expanded as more resources become available. For the convenience of efficient and effective health care delivery, reproductive and sexual health services should be integrated into primary health care initiatives as well as services that cater to more specialised health needs. In order to ensure that governments and other non-government actors comply with acceptable policies and mandates ATM Networks and others could:

1. Advocate and lobby for adequate funds to support family planning and birth spacing services as an integrated health care service;
2. Develop alliances across sectors to promote information, education and communication on reproductive health services for men, women and adolescents:
    - *Consider developing alliances with youth to lobby and advocate for the effective provision of services to adolescents and youth.
    - *Initiate networks of men to support advocacy public awareness-raising and education about reproductive health care issues among men;
3. Reach out to traditional leaders, faith-based organisations and religious leaders, to gain support for public campaigns against gender-based violence or for promoting safe sex and family planning, etc;
4. Educate women on their reproductive health rights and policies that address services so that they may be able to demand their rights;
5. Educate women, girls, men and male youth about safe contraception methods and family planning services;

6. Launch a campaign together with other organisations on the impact of gender-based violence (GBV) on women. Include young girls, men and boys;
7. Document women's experiences with sexual and other gender-based violence. For example, develop a story of change in the form of photo exhibition, human interest stories, case studies etc. that you can show around the community on the dangers of reproductive tract infections and STIs, including HIV/AIDS;
8. Support breast-feeding initiatives and advocate to women of its benefits. Emphasise the importance of good nutrition before, during and after the birth of the child;
9. Organise round-table discussions with relevant officials of the governments at all levels, community or state policy-makers on gender-responsive delivery of sexual and reproductive services. Raise awareness of cultural issues such as female genital mutilation (FGM) that can negatively affect women's reproductive health;
10. Work with traditional birth attendants, midwives and community-based women who perform FGM to raise awareness about the dangers and encourage prevention;
11. Ensure capacity building of service providers on SRH/HIV integrated service provision at National, state and LGA levels.

INTEGRATED HIV/AIDS, TUBERCULOSIS AND MALARIA (ATM)

RESPONSE RESOURCE KIT

FOR CIVIL SOCIETY ORGANISATIONS IN NIGERIA

Community Systems Strengthening (CSS) Component of the Global Fund Round 8 Health System Strengthening (HSS) Project Brief

The mounting scale of the three epidemics of HIV/AIDS, Tuberculosis and Malaria (ATM), and the more recent availability of significant financial resources to respond to the diseases, has increased pressure on national systems to scale-up and improve the quality of implementation efforts. Scaling up the response to the three diseases will not be successful without strengthened community systems. In the context of health, community systems strengthening (CSS) is therefore an approach that promotes the development and sustainability of communities and community organisations and actors, and enables them to contribute to the long-term sustainability of health and other interventions at community level. The focus is to develop the role of key populations and communities, and community organisations, networks and other actors, in the design, delivery, monitoring and evaluation of services and activities aimed at improving health outcomes.

CSS is a way to improve access to and utilisation of formal health services but it is also, crucially, aimed at increased community engagement (meaningful and effective involvement as actors as well as recipients) in health and social care, advocacy, health promotion and health literacy, health monitoring, home-based and community based care and wider responses to ensure an enabling and supportive environment for such interventions. Besides, in order to have real impact on health outcomes, however, CSOs, CBOs, FBOs and their networks must have effective and sustainable systems in place to support their activities and services. This includes a strong focus on capacity building, human and financial resources to enable community actors to play a full and effective role alongside health and social welfare systems. CSS is a means to prioritise adequate and sustainable funds for specific operational activities and services and, crucially, core funding to ensure organisational stability as a platform for operations and for networking, partnership and coordination with others.

The Global Fund recognises that the presence of strong, sustainable community-based organisations is an important element of ensuring program impact, sustainability, and results for ATM prevention, treatment, and care and support efforts. CSS initiatives are encouraged by the Global Fund with the aim of achieving improved outcomes for ATM and related health challenges with emphasis on strengthening community based and community led systems for ATM response.

Nigeria, in recognition of the above, is being supported by the Global Fund under the Round 8 application for the Health Systems Strengthening (HSS) intervention which is aiming at developing the systems for health care delivery in the country. The Community Systems Strengthening project is one of the Service Delivery Areas of the HSS intervention. The CSS component of the Global Fund Round 8 is geared towards strengthening the capacity of core process of the civil society/community based networks and community level committees to ensure the provision of an increased range and quality of services in scaled up ATM interventions.

The CSS is focused on developing the Civil Society for HIV and AIDS in Nigeria (CiSHAN); Civil Society in Malaria Control, Immunisation and Nutrition (ACOMIN); and the Civil Society for the Eradication of Tuberculosis in Nigeria (The TB Network); integrating services for treatment and prevention of ATM at the Primary Health Care and strengthening Ward Health Development Committee level. This will be achieved through integrated training and development of civil society organisations, selected from the three networks, and activating the Ward Health Development Committees in the selected Local Government Areas. The Principal Recipient for the Health Systems Strengthening Project is National Agency for Control of HIV/AIDS (NACA), whilst the Sub-Recipient is ActionAid Nigeria. The three Networks on HIV/AIDS; Malaria and TB are the Sub-Sub Recipients to ActionAid Nigeria.