

**River Blindness:  
An Insight into Community  
Directed Management of Endemic  
Diseases**

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## **INTRODUCTION**

I give all Glory, Honour, Dominion and Majesty to Almighty God for HIS blessings of life, good health and a wonderful family. Above all I give HIM all the Glory for a day like this! It is indeed a great honour and privilege for me to be the 55th inaugural lecturer of this great institution. I do not consider this inaugural lecture belated, that is, nine years after my promotion to the professorial chair in ophthalmology, for the reason that I have a strong belief that whenever an event occurs the Almighty God enabled it to take place then and for me my heart is full of deep gratitude for HIS innumerable mercies.

I am humbled and appreciative to have, in the audience, my husband, Emeritus Professor John Anenechukwu Umeh (OFR), the first Professor to give an inaugural lecture from Enugu Campus and the 5<sup>th</sup> in the university of Nigeria, in 1977. He actually gave me the head-start in this career journey and has remained ever unflinchingly supportive and inspiring all the way. Our lovely children, our sons-in-law and daughter-in-law and our grand children all of who are our great source of joy have been very supportive. I must specifically mention with gratitude, Professor P.O.Okonkwo, a seasoned researcher who had obtained a World Health Organization (WHO) grant to study onchocerciasis in the Southeast Nigeria in mid-nineteen eighties. He kindly gave me the opportunity to participate, as a Project Ophthalmologist, in his onchocerciasis research team. This research activity provided me the gateway to apply and obtain a WHO fellowship to do a Master's Degree in Community Eye Health at the International Centre for Eye Health (ICEH), University of London in 1992. I seized the

opportunity to audit courses in epidemiology and biostatistics, programme management, health economics, proposal writing and communication skills and experience among others. Undoubtedly, this training equips one with experience in field health research and service delivery.

I remain indebted to Dr Thomas Nchinda, a Professor of Public Health, Emeritus Professor L. A. Salako, Emeritus Professor J. Osa Ayanru and the late Emeritus Professor Barrie Jones (May his soul rest in perfect peace, Amen) who not only were my role models in field health research but also facilitated my work for the Fellowship and in the communities tremendously. I pay the deepest tribute to my parents, Mazi Thomas and Madam Grace (alias Electric) Oti both of fondest and blessed memory who nurtured me and inculcated in me an early culture of honest hard work. I must mention that my dear father vehemently refused to heed the advice of one of his “close friends” not to waste his money educating his girl child, me but to utilise his money on training only his male children. I thank God for him and my mother and pray that the Almighty God may continue to rest their gentle souls in perfect peace, Amen. I also wish to register my gratitude to my siblings who are always there for me in their various ways. May I seize this opportunity to record the deep gratitude I owe to our highly productive and trail blazing immediate past Vice Chancellor, Professor Chinedu Ositadimma Nebo, for giving me the opportunity to serve a member of his team in the capacity of the first female Deputy Vice Chancellor of this great University. I cannot thank our very able and highly dynamic incumbent Vice Chancellor, Professor Bartho Okolo enough for warmly accepting me into his team and for squeezing time out of his very busy schedule to

personally preside over this inaugural lecture today. It is an honour and privilege for me. Last but not the least, I salute, with the deep sense of respect, all my teachers at all levels of my education for their mentorship. Similarly, I wish to thank my colleagues, students/residents and members of the various communities studied for their cooperation and support.

It is with pleasure that I deliver this lecture on River Blindness – an insight into community-directed management of endemic diseases in Nigeria. In the course of this lecture I will be addressing the following questions and issues:

- I. Why this topic?
- II. What is community and why is it important?
- III. What endemic diseases are we talking about?
- IV. Impact of one of these diseases – River Blindness (Onchocerciasis). What is River Blindness (Onchocerciasis) and why the choice of this disease?
- V. What is Community-directed treatment, how did it evolve and what are the advantages
- VI. Challenges of Community-directed treatment
- VII. Proposed solutions.
- VIII. Conclusions

### **Why this topic?**

There is a dire need to draw attention to the magnitude of the problem of low vision, blindness and other endemic diseases ravaging the rural community. According to WHO definition, “health is not just the mere absence of disease, but a state of physical, mental and social well being.” Dr Faal, 2005, <sup>1</sup>went on to say, “well being is development, development is about

economics” and of course we know that both together mean progress.

Our communities constitute the cradle from where we all emerged apart from being the food basket of the nation. The rural dwellers actually sustain us in many ways and for them to be able to perform this vital function they need to be in holistically good health, which of course inevitably, includes the eye. But how far has this fact been recognised, and how much attention have the policy makers and movers paid to the communities? The community has been a grossly misunderstood and largely neglected entity in modern times, in terms of health issues by most of us. Considering the eye, as an example, the importance of eye health has been highlighted and spearheaded by a global partnership of all stakeholders in vision specifically the WHO and the International Agency for the Prevention of Blindness, who initiated a global campaign called “Vision 2020, The Right to Sight”. The aim of this campaign is to eliminate avoidable blindness and low vision by year 2020. This was launched in 1999 by the director general of the WHO. It is made up of 3 main strategic components namely:

- a. Disease control,
- b. Human resource development and
- c. Provision of the infrastructure and technology utilizing strategies of advocacy, resource mobilization, management and community participation.

Using modelling, Professors Allen Foster (ICEH, London) and Kevin Frick (Johns Hopkins, <sup>2</sup>Baltimore), studied the prevalence

of blindness, economic productivity loss and the number of years of life gained without and with Vision 2020 from year 2000 to 2020. They showed that “ global population will increase from 6,850 million to 7,317 million. In Sub-Saharan Africa this increase will be from 659 to 978 million in 2020 with an increase of 5 million persons in the age group most affected by vision loss i.e 65 years and above every 10 years. Without Vision 2020, the prevalence of blindness rate would increase from 0.72% in year 2000 to 1.01% in year 2020. Conversely, with Vision 2020, this would drop to 0.33% by year 2020, a reduction of 70% over a 20 year period. Correspondingly, the number of blind persons will increase from 44 million in year 2000 to 76 million in year 2020. Vision 2020 would result in only 24 million blind from unpreventable or incurable blindness”<sup>1</sup>. Another study by Clare Gilbert and Muhit Mohammed, <sup>3</sup> also indicated that if Vision 2020 targets for children can be met, the global prevalence of blindness will fall from 7.5/10,000 children (in 1997) to 4/10,000 children by year 2020. The number of blind children will invariably reduce to approximately 800,000.

The question then is, how does this impact on the community? Presently, studies carried out in Enugu State by Umeh et al, <sup>4</sup>showed a prevalence of blindness of 3.3% from onchocerciasis in rural community in Achi, Enugu State . Already this number is considered quite high for blindness in a community. By implication, without vision 2020 this number is bound to continue to increase but with Vision 2020, there will be a reversal and more people will enjoy good eye health. If this is extrapolated to the whole population considering that onchocerciasis is endemic in Nigeria a large difference will

certainly be made if avoidable causes of blindness are eliminated.

### **What is community and why is it important?**

Definition: According to Oxford dictionary<sup>5</sup>, “Community is a collection of coherent people who live together in a specific locality” be it urban or rural.

### **Why is community important?**

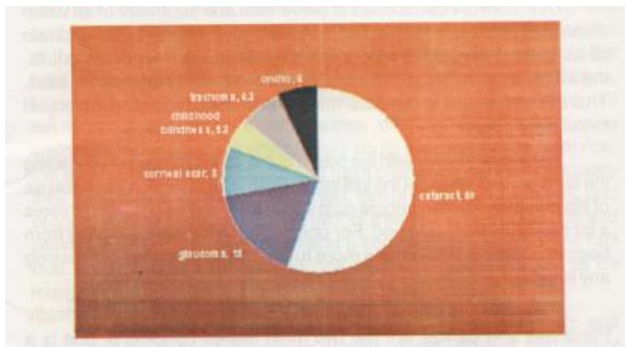
The community, in this context, is the rural area where majority of the population live. As earlier mentioned, we all originated from one rural community or the other but as a result of our jobs, settled in the urban areas. What do most urban dwellers think of these rural dwellers? Largely that they are “ignorant, uneducated, and unskilled”. From our years of working with the folks in the rural communities, we have come to realise that the exact opposite is true. These people are in fact far more skilled in their own way, are full of native intelligence and educated in their native art and culture than is thought of. Besides being in the majority, should they suffer from unwell being, then the urban population is endangered as most of our livelihood depends on them. Most importantly, any health strategy that does not involve the community is bound to have far less impact. As we go on in this lecture the importance of the community as a positive force to reckon with will be further elucidated.

### **What endemic diseases are we talking about?**

Eye diseases: These include Cataract with a prevalence of 39% (17.6m). In children cataract is responsible for as large as 5 – 20% of cases. Studies by Gogate et al <sup>6</sup>, showed that “in 1997, the estimated number of blind children stood at 45% and this is

from avoidable causes like vitamin A deficiency, refractive error and cataract”.

Refractive error with a prevalence of 18% (8m), poses quite a serious problem because it deprives the individual freedom to do the things they would love to do such as successful education in the case of young people, effective home keeping in the case of middle aged women in the rural community and leisure reading for the elderly in the home. Glaucoma 10% (4.5m), another silent cause of blindness which is worse among the black race and commonly affects people from age 40 years; Trachoma 3% (1.3m), Onchocerciasis 0.7% (0.3m) and Childhood blindness 3% (1.4m).



*Figure 1: The Economics of Sight and Vision Loss, Hannah Faal; 2005*

Systemic diseases: Malaria, responsible for the high maternal and infant mortality in Nigeria, ranks the highest among the diseases followed by Vitamin A deficiency, Leprosy, Tuberculosis, and Helminthiasis.

I am going to talk about only one of these diseases, - Onchocerciasis, which is one disease that has today given us an



insight to the management of these other diseases ravaging the population in the rural community and constitutes the title of my lecture.

## What is Onchocerciasis and what is its impact?

Onchocerciasis is a parasitic disease caused by the worm *onchocerca volvulus*, a parasitic worm that lives up to 14 years in the human body. Each adult female produces millions of microfilariae that migrate through the body and give rise to various manifestations. The disease is transmitted by the bites of black fly, *Simulium damnosum* ssp. (kpu kpu in Igbo). \* **Insert the slide of cycle** - The breeding site is the banks of fast flowing rivers because the larva requires a lot of oxygen to mature. Consequently, people who live and work in or near such rivers get bitten often and therefore suffer the worst manifestation of the disease i.e blindness. Thus the disease is commonly known as River Blindness. <sup>7, 8</sup>

### RIVER BLINDNESS

Onchocerciasis, also known as river blindness, is a parasitic disease caused by tiny worms or "microfilariae" and transmitted by flies. The disease affects an estimated 18 million people worldwide.

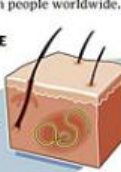
#### THE DISEASE CYCLE

##### 1 Parasitized

The insect takes a blood meal from a human. A pool of blood is pumped up into the fly, saliva passes into the pool, and infective *Onchocerca* larvae pass from the fly into the host's skin.

##### 2 Infection

The larvae enter the host's skin tissue, where they migrate and form nodules, and slowly mature into adult worms



##### 3 Proliferation

New worms form new nodules or find existing nodules and cluster together. Smaller male worms migrate between nodules to mate.



##### 4 Reproduction

After mating, eggs form inside the female worm and develop into microfilariae. A female may produce 1,000 microfilariae per day.



##### 5 Transport

When the infected host is bitten by another fly, microfilariae are transferred from the host to the fly.



Sources: World Health Organization, Centers for Disease Control; Map: The Carter Center

### Carter Center-Assisted Onchocerciasis Control Programs



Highlighted areas in Africa represent areas where The Carter Center is actively working. The highlighted areas in Latin America represent the 13 remaining foci.

#### DISEASE SYMPTOMS

##### Eye lesions

If microfilariae migrate to the eye, they can cause severe lesions and in some cases blindness.



Microfilariae in the eye are actually about the size of the period at the end of this sentence.

##### Skin lesions

Many thousands of microfilariae migrate in the upper layers of the skin. When the microfilariae die, they cause skin rashes, lesions, intense itching and skin depigmentation.



ALBERTO CUADRA | CHRONICLE

[2.bp.blogspot.com/.../s400/blindness\\_cycle.jpg](http://2.bp.blogspot.com/.../s400/blindness_cycle.jpg)  
[pudsandlosers.blogspot.com/2009/06/black-fly-...](http://pudsandlosers.blogspot.com/2009/06/black-fly-...)

*Figure 2: Life Cycle of Oncoerca Volvulus*

Prior to the interventions, about 250,000 square kilometre of fertile river valley were abandoned leading to estimated annual economic losses of 30 million US dollars. Burkina Faso, one of the West African countries worst hit in the 1970s had over 400,000 people who were infected. The disease is endemic in 28 countries in Sub-Saharan Nigeria inclusive. Six countries in South Americas and Yemen are also affected. The disease affects an estimated 18 million people, over 90% of which live in Africa.<sup>9</sup>

**Direct Impact of the disease on skin and eyes.**

Skin: Onchocerciasis gives rise to intense troublesome itching of the body in some cases associated with the typical acute maculo-papular rashes, chronic maculo-papular rashes – because of the nature of the itching the Igbos refer to it as “oko nyia mbo” translated itching that defies the finger nails. (Story had it that one lady who displayed and was selling garri in the native market had the skin disease. Normally garri was sold 5 cups for one shilling then, an equivalent of 100 naira. But this lady was so engrossed in scratching one of her affected legs that when a customer asked whether she would sell 8 cups/1 shilling she replied in her native language, “i nakwa aturu iri turuwa o” translated, please go ahead and take ten cups but just leave me alone to my scratching). This is just to illustrate the severity of this itching that sometimes drives the affected “crazy”. In addition the chronic skin disease so disfigures the skin the



young ladies do not get suitors and their families are often ostracized. Amazigo et al highlighted this in their studies in Eteh village in Enugu-Ezike. In males, in particular, the disease can lead to hanging groins among others.

[www.who.int/.../disease/en/index.html](http://www.who.int/.../disease/en/index.html)  
[www.who.int/entity/apoc/media/skin.gif](http://www.who.int/entity/apoc/media/skin.gif)

**Figure 3: Skin Lesions of Onchocerciasis**

**Eye:** Perhaps the extreme manifestation of this disease is an incurable type of blindness. The sad aspect of this disease is its tendency to affect mostly the people who live in remote villages, the so called end – of – road, inaccessible communities. In Nigeria about 31 million people who live in 36,000 communities in 413 Local Government Areas (LGAs) of 32 States and the Federal Capital Territory (FCT) are at risk of the disease. Nigeria accounts for nearly 40% of the world’s burden of onchocerciasis. As many as 18 million Nigerians are affected

and 3 million are blind, (WHO, 2006)<sup>9</sup> The disease also leads to other forms of debilitating eye disease either directly or indirectly e.g inflammation of the uveal tissue, cataract, glaucoma. ( Umeh RE et al, 1996).<sup>10</sup>



Photo courtesy of WHO/TDR .

Figure 4: An eye blinded by onchocerciasis.

Socio-economic impact: People affected suffered the burden of loss of means of livelihood because of the debility caused by the disease. Owing to the severely itchy skin disease, affected people had sleepless nights and so too tired to attend to their farms, the males who had hanging groins could not function and those who could go to work were far less productive due to lack of strength and concentration. The breadwinners who are blind from the disease are of course unable to fend for their families. In addition, the sighted young ones had the responsibility to become the guides for their blind parent/relative. Thus children

are deprived of education. In some hyperendemic areas people abandoned their fertile farmlands and migrated to safer ground. The results were poor economic growth and poverty in the land.



*Photo Credit: Bill VanderDecker*

Figure 5: Child leading his blind father and his relative

Socio-cultural and psychological impact: In the communities families who had anybody affected by the disease were discriminated against in all social activities, even in the markets nobody bought their wares for fear of catching the disease. People kept away from visiting or being visited by such persons. Their young girls who were affected had no suitors; the already married women were abandoned by their husbands. Depression of course was the order of the day for such families and members.

### **Control Methods**

The initial method employed by the Onchocerciasis Control Programme (OCP) in West Africa to control the disease was aerial larviciding, launched in 1974 sponsored by WHO, World

Bank, Agricultural Development Organization (APOC/WHO, 2007)<sup>11</sup>, in parts of West Africa excluding Nigeria. This was aimed at eliminating the vectors (black flies and their larvae). Although successful in controlling the scourge as a Public health problem, it was considered too expensive (CDTI 1996) and of course was not feasible in some areas of West Africa that were inaccessible for such measure due to dense vegetation. Drug treatment was also tried, for example, Suramin given as injection, which was found to be too toxic to the ears and kidneys and requires hospitalization during its use. This is certainly unsuitable for large-scale treatment. Surgical removal of the lymph nodes -nodulectomy was also used. The question is how many people can actually be treated effectively since some of the onchocercal nodules are so deep-seated they are inaccessible. Again in a population of millions affected how long and at what cost can this type of treatment be carried out. Another type of drug commonly used was Diethylcarbamazine (Banocide). This drug killed the worms so rapidly that it gave rise to severe drug reaction on the skin and eyes( Mazotti reaction) and sometimes the inflammation in the eyes can lead to blindness.

### **Ivermectin (Mectizan)**

In 1987, a drug known as Ivermectin, previously used in veterinary medicine, was registered for the treatment of human onchocerciasis. The subsequent availability of the microfilaricide provided a golden opportunity to control the disease as a public health problem in all endemic areas of Africa. Merck & Co. donated the drug in large quantities and thankfully, is still providing the drug free of charge to date. The

good news is that the drug is safe and effective unlike all the previous drugs tried. It acts by sterilizing the adult female worm that produces the myriads of microfilariae (1000mf/day/adult worm) responsible for the manifestations of the disease. To control the disease, the tablets need to be taken once or twice a year consistently by all eligible people in the population for at least 14 years, the lifetime of the adult female worm. Question then is, how do you get this drug to the people who need the treatment?

Previously the drug would be delivered to the Health Centres at the Local Government Areas by the National Onchocerciasis Control staff. The few health staff available at this level, who are already overburdened and with little resources available to them, are given the responsibility to distribute these tablets to all the eligible villagers, keep the necessary records and make the requisite returns. Obviously this was too much task for the health staff. Consequently, their efforts, which translated to a drop in the ocean had very little effect. Treatment coverages were generally poor.

### **Community- Based Ivermectin Treatment**

Since the treatment with Ivermectin has only limited effect on transmission of the parasite annual large-scale treatment will have to be consistent to ensure sustained control of the disease (CDTI, 1996)<sup>11</sup>. The challenge then was to develop and implement a method simple enough for villagers to understand as well as operate, and still effective in reaching all the nooks and crannies of the endemic communities.

In some West African countries like Mali, they already had a method known as community-based ivermectin treatment whereby formally trained health workers imposed interventions on communities with their PERMISSION but not their PARTICIPATION (CDTI, 1996)<sup>11</sup>. The results, however, were much better than we had in Nigeria using the method described earlier – that is, distribution by the health workers only. At least the Mali strategy showed that, given the opportunity, members of communities when trained, are capable of handling their own treatment.

### **The Birth of Community Directed Treatment With Ivermectin (CDTI)**

African Programme for Onchocerciasis Control (APOC) was created in 1995 to cover over 16 endemic African countries including Nigeria outside the West African Control Programme (OCP). Their main objective was to establish a self-sustaining and effective method of community-based Ivermectin treatment in the 16 African countries over a 12 year period.

### **My Research Missions Into The Communities**

Prior to this period, in late 1980s, the author had been kindly invited and participated, as the Project Ophthalmologist, in Prof P.O. Okonkwo's renowned onchocerciasis research study in Achi, Oji River. The available literature had it then that onchocerciasis caused only skin disease in the South Eastern States of the country. My humble research efforts at Achi and Inyi communities brought to light and prominence the fact that there are also eye complications from onchocerciasis in the forest-savannah mosaic region of Nigeria, that is, South Eastern Nigeria (Umeh et al)<sup>10</sup> The team made daily trips to the villages



in Achi. My specific task was examining and treating eyes free of charge with drugs made available by the project. The team also had provisions that enabled us to examine and treat (or refer where necessary), any other health problems that presented. This is a very important ancillary for any community health research work as it not only caters for the sick but also fulfils the medical ethical consideration.



*Courtesy; Author's photograph*

**Figure 6:** The author examining a patient in Achi, Enugu State.

To further get an insight into other onchocerciasis studies in other part of Nigeria, I was sent to work with another international team, led by Professor Abiose and Emeritus Professor Barrie Jones, working on onchocerciasis in Kaduna, Northern Nigeria. The study site was in a very remote community about a day's journey through harsh terrain from Kaduna metropolis. Female members of the team were housed

in an abandoned dilapidated mud classroom and the males in a tent in the open field. Within the four weeks we spent in this community we lost track of time or day as the only activity around us was peasant farming and domestic animal rearing. But most importantly the lessons learnt was the simplicity of the villagers; the implicit confidence they have in you as a health care-giver and the gratitude they show practically each day we worked in their community. Some will prepare meals - fura de nono, kunu, guinea fowl they caught in flight or the eggs they picked. This is in spite of the fact these people were abjectly poor.

In the same way our trips to villages in Achi and Inyi in the Southeast were equally greeted with joy and gratitude exhibited sometimes with delicious meals – abacha ncha garnished with fish or yam porridge and fresh palm wine to wash it down as soon as our work was done for the day, as well as gifts of coconut, vegetables etc.



*Courtesy; Author's photograph Figures 7a & 7b: Author and team working in the Inyi and Umulumgbe communities respectively.*

Raja community is situated in the remote parts of Southern Sudan. Access to this community was either by road only in the dry season and could take more than 14 days or where affordable by a 6-seater turboprop engined aeroplane which land in playgrounds. The entire community, comprising about 3-4 thousand people, was served by only one doctor and 2 trained nurses. Classes were held under trees for the children, there was no question of personal hygiene either for the adults or the children when the least of people's need which is one meal a day is hardly available - a typical end-of-the -road community. All these communities were terribly ravaged by onchocerciasis and other diseases namely tuberculosis, leprosy, epilepsy among others especially in Raja. By the time we left Raja every member of the team had suffered from one ailment or the other ranging from dysentery to respiratory tract infection. The story was the same in all other communities our work on onchocerciasis took us to – Tanzania, Cameroun, Ethiopia outside Nigeria, Gembu in Northern Nigeria, Etteh in South Eastern Nigeria etc.



*Courtesy; Author's photograph.*

Figure 8: Studying the literature for project drug in a community in Gembu, Taraba State

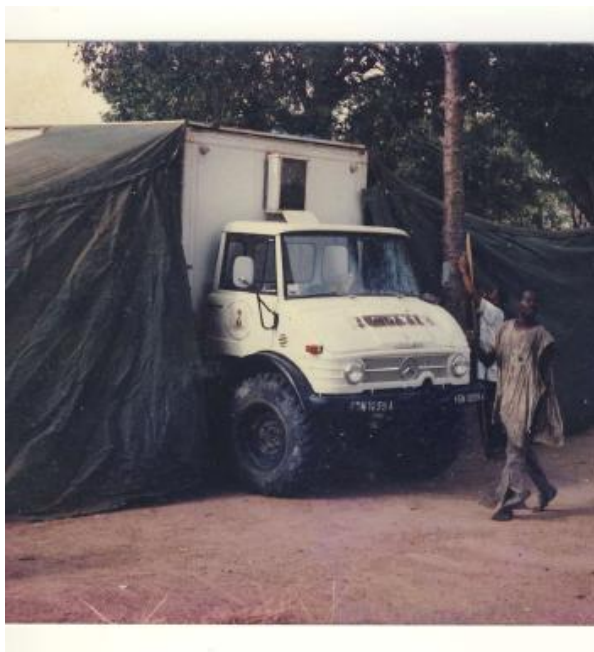


*Courtesy; Author's photograph*

Figure 9: Team visit to the Emir's Palace in Gembu, Taraba State

That notwithstanding, their friendliness in the various communities visited was overwhelming but so were poverty, disease, a high infant and maternal mortality rate. Their health needs were myriads but there were little or no human and material resources to solve these problems. Commonly, almost all the doctors live and work in the urban areas. The few health personnel posted to the sparse health outposts have very little materials to work with. Where materials are available some corrupt health workers divert these to their private practice since they are the “doctors-on-ground” in the villages. The people are left to suffer from not only lack of the basic necessities of life but also inaccessible and unaffordable health care. These experiences with the various communities gave the author an idea of the magnitude of health problems of the village dwellers as well as insight into the enormous task to be tackled in the communities. The proportion of diseases seen in hospitals in the

cities is only a “tip of the iceberg,” and for a nation to have a healthy, productive, population, it needs to pay serious attention to and tackle the health needs of the communities.



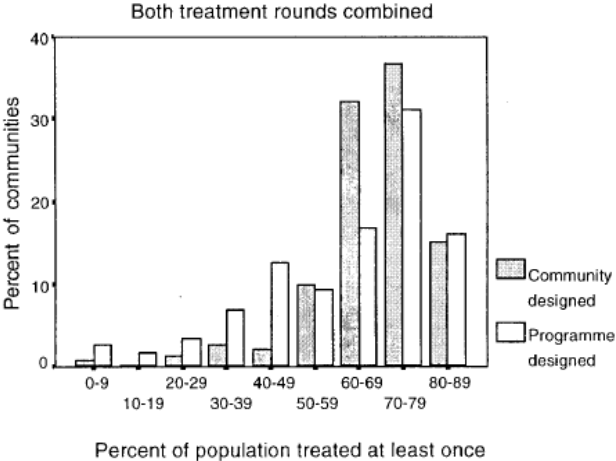
*Courtesy; Author’s photograph*

Figure 10: Our clinic/treatment room aboard a truck in a Kaduna village

### **Evolution of CDTI**

With the creation of APOC and an already assembled team of research scientists who obtained a WHO/TDR Onchocerciasis Operational Research grant, (of which the author was one), a multi –country study was carried out. My team worked in Nike and Etteh communities of Enugu State. The objective was to

compare the existing method of distribution of Ivermectin by only the health workers in the health outposts described as “programme-designed” with “community-designed” method whereby the community members take the responsibility for decision-making, organizing and carrying out, on their own, the treatment of their own people.<sup>12</sup> This latter method was subsequently proved to be feasible and effective. It was shown that almost all the people who were eligible, got the treatment, unlike in the programme-designed method. The community-designed method worked the magic, largely because the community members were empowered and given the responsibility to cater for themselves - a task which they enjoyed to perform. It should be noted that these people take ownership and, live together and know each other and therefore, would revisit where somebody was absent during the distribution round, to ensure he/she receives the tablets.



Source: Author’s field work – Remme H, Umeh et al.

Fig 11. Comparison of Community–Designed and Programme–Designed programme

The treatment coverage in programme-design villages is lower than those in community-design, and the difference is statistically significant in both treatment rounds combined (Mann-Whitney test:  $p < 0.001$  and in 2<sup>nd</sup> round  $P < 0.05$ ) (CDTI,1996). This proved that if given the minimal training required, the communities are capable of handling the simple health care issues. The beauty is that although these people may be poor and deprived but they are intelligent, simple and honest people able and willing to take their destiny in their own hands, given the opportunity. Not only did this finding give the researchers more understanding of the community members' ability to organise themselves to render health care to their own but it also highlighted the fact that these people had largely suffered in silence due to inadequate attention, human and material resources in the few health centres available in the community. Besides, nobody had ever considered the fact that, given the chance and provisions, they can actually take care of themselves effectively. The Lesson Learnt Is "IF YOU TREAT THE PEOPLE WITH RESPECT, HUMILITY AND HONESTY THEY WILL GIVE YOU THEIR BEST". Subsequent development in this paper will further elucidate the importance of this in-road into the communities and its prospects.

### **Results of CDTI (WHO /APOC, 2007)<sup>13</sup>**

1. In the year 2006, 46.2 million people (up from 1.4 million in 1997 when APOC started) in endemic countries, were treated by trained drug distributors – selected by communities from among their own ranks – using this strategy<sup>13</sup>.
2. In the year 2007 close to one million disability-adjusted life years (DALYs) have been averted by APOC through this method representing more than 55% of all DALYs

that would have otherwise been lost in the 16 African countries had they not been treated.<sup>13</sup>

3. It is estimated that by 2015, APOC would have prevented over 15 million DALYs.

### **What are the Advantages of CDTI?**

The programme has afforded the opportunity of creating an in-road into otherwise end-of –the –road communities.

It not only empowers the people but also gives them a sense of participation

It improves acceptance and treatment compliance since the treatment is coming from their own who they themselves had selected for the task.

SUSTAINABILITY, the most important tool to break disease transmission and proliferation, is maintained because the community is stable.

CDTI has also helped to reveal that previously held knowledge about the magnitude and diversity of diseases in the community was just a tip of the iceberg, e.g tinea capitis among children in Gembu; loa loa in Cross River State; leprosy in South Eastern Nigeria; epilepsy and tuberculosis in Raja; CDTI also advances knowledge, attitude and disease management practices with respect to these diseases.

This kind of novel detection puts the disease on the international radar attracting more funding for research and treatment of the disease entity as well as offer better opportunities for the community to get good health care.



The system relies on community decision-making, decision-execution and resources, especially the Community Directed Distributors (CDDs) who are selected by their communities from among their own people and are not paid any fee for their services rather they are compensated in kind – helping out in their farms and according them recognition in their communities.

### **CDT as Tool For Other Interventions**

Following Success of CDTI, the community-directed projects have served as a vehicle to carry other health interventions into communities that need them. These include:

Malaria - the number one killer of young children and pregnant women in Nigeria today. CDT system was adopted, experimented and fine-tuned in the home management of uncomplicated childhood fevers. The author participated in the multi-country research studies (author served as Principal Investigator at Igbo-Etiti) that proved its efficacy for other health interventions. Home management of uncomplicated childhood fevers now widely used in the communities is one of the outcomes of this study.<sup>14</sup> In this case the mothers are trained to recognise and treat uncomplicated malaria and febrile respiratory infection with already packaged antimalarials and antibiotics; similarly the chemists in the medicine stores in the villages as well as Traditional Birth Attendants (TBAs) are trained to recognise uncomplicated malaria and febrile respiratory disease, dispense the pre-packaged drugs as well as supervise the mothers in their homes; most importantly they are taught to refer promptly, all complicated cases. The picture below illustrates one of the discussion sessions we held with a local chemist in Kilifi, Kenya, East Africa.



Courtesy : *Author's photograph*

Fig.12: Discussing Home Management of Childhood fevers with the local chemist in Kilifi-Kenya.

Distribution of ILLN - distribution of Insecticide-treated long-lasting bed nets (ILLN) to villagers particularly to homes with high risk groups- children and pregnant women as well as prophylactic antimalarial drugs for pregnant women.

Vitamin A Deficiency – Vitamin A Supplements are also distributed alongside ivermectin tablets

Tuberculosis – HIV/AIDs infection has given rise to resurgence of tuberculosis which is currently ravaging the people in the communities. Current treatment regimen involves a sustained

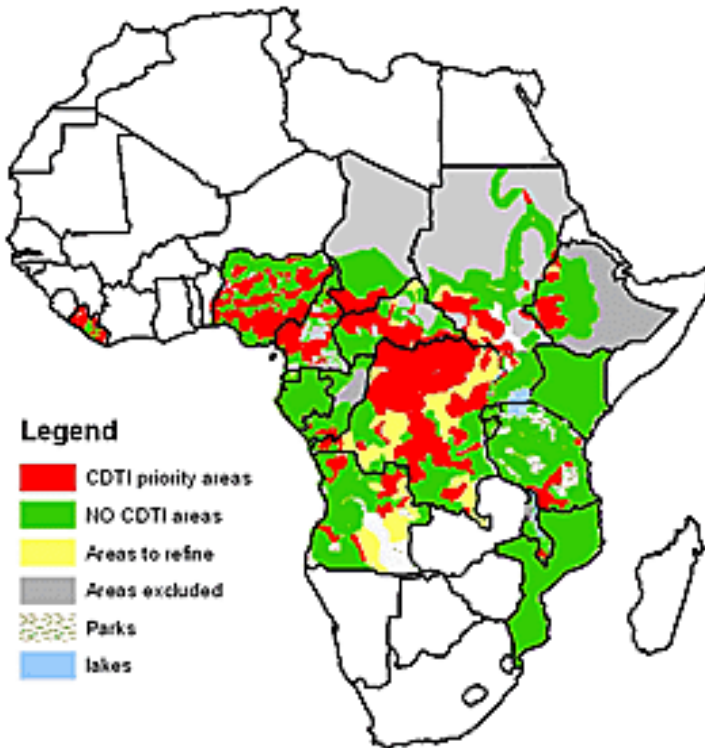
multi-drug therapy (MDT) as well as directly observed treatment (DOT). Good coverage is being achieved by utilizing the CDT method.

Leprosy – Similarly MDT as well as DOT are being used for the treatment of leprosy. This has now enhanced the therapy of those affected individuals within their own community thereby keeping the families together. The stigma of leprosy has invariably been greatly mitigated. Today as a result, Leprosy has ceased to be a big problem like before.

Helminthiasis – Distribution of Praziquantel, Albendazole are some of the interventions used for the treatment of worm infestation. This is also carried piggy-back with ivermectin distribution.

Other diseases that have been treated include cataracts, the commonest but curable cause of blindness. In Inyi, our team used a strategy called “Bad Eye Finders” a strategy that was coined and conceptualised by our team leader, Emeritus Professor Barrie Jones. The package was proposed to be “their eye health programme, with technical help in planning, promotional, preventive and curative measures as well as rehabilitation. The general objective is “ for the village to grow up its children seeing well “ and “ to allow their old folks to die gracefully”- seeing well – with few exceptions. Umeh RE, 1995.<sup>15</sup> The principal actors are the community’s Women Organization. They nominate the trusted villagers who were trained by us to identify people with eye problems. These were then presented to our eye care team for evaluation and therapy as deemed necessary – either medical or surgical eye treatment including follow-up in their villages all free of charge. Today communities have been opened up for surgical eye outreach programmes in the villages by different organisations. Alongside this, other eye conditions are treated or referred, as

the case may be, for example, trachoma - another preventable and curable cause of blindness; loa loa, which also causes elephantiasis; glaucoma ; and guinea worm, presently a problem in some parts of Southeastern Nigeria.



Graph courtesy of WHO maps Onchocerciasis in Africa  
[www.who.int/.../media/onchocerciasis\\_map.GIF](http://www.who.int/.../media/onchocerciasis_map.GIF)  
[www.who.int/.../status/en/index.html](http://www.who.int/.../status/en/index.html)

Even in far away Aravind in India, they recognized the importance of community participation in health issues – typified by this quote “Aravind has been organizing community outreach, always with the involvement of the local community.

This partnership led to widespread awareness of cataract services across the state of Tamil Nadu”. (G.Natchiar, RD Thulasira and R Meenakshi Sundaram, 2008).<sup>16</sup>

### **Advantages of CDT Linkage Between Government & Community**

1. As a result of the regular interaction between the Front Line Health Facility staff (FLHF) and the community volunteers (training, monitoring and supervision), a strong linkage is built between the communities and the government owned health services.
2. In addition, the added responsibility to the CDDs of monitoring serious side effects of the drugs used for various ailments and reporting this to the health staff, forges a stronger communication links between community and primary health care system for the much desired emergency care at the grassroots.<sup>11</sup>
3. CDT forms one of the key basic building blocks necessary for achieving the Millennium Development Goals (MDGs)<sup>16</sup> three of which are directly linked with health namely- to reduce child mortality, improve maternal health and combat HIV/AIDs, malaria and other diseases. The remaining five although not as direct but are invariably linked to health- for example, eradication of extreme poverty and hunger, ensuring environmental stability, developing a global partnership for development etc.

*As the saying goes,” Opportunity has hair in front, behind she is bald. If you catch her by the forelock, you can hold her. But if you suffer her to escape not Jupiter himself can catch her”.* CDT is our opportunity to tackle

our health problems. We all have no choice but to embrace it. It is fulfilling and very rewarding especially in terms of being part of community development and *ipso factum*, National development.

### **III. Challenges of CDT**

#### **Internal challenges**

- a) CDDs: Perhaps the most challenging problem for CDT is the demand for financial incentive by the CDDs. Some NGOs pay money to their distributors and the villagers cannot understand why APOC/WHO cannot do the same. To circumvent this problem there is need to constantly remind the people that this is their programme and is meant for their benefit. The problems are that of their people and not that of the NGOs who will one day wind down and leave having done their best to initiate and fund the programme. In the present day global economic recession and the factor of donor fatigue, Local and State governments need to acknowledge the contributions of the donor agencies by taking over from where they stopped, and carrying out their responsibility to their people.
  
- b). Socio/Cultural problems: To be accepted by the community, the researcher or health worker must be humble and show respect to the people and their cultural or religious beliefs. Igwes and Ezes who are in charge of their communities must be fully informed of the intended mission as well as accorded due respect before entry into the area. Constant feedbacks must also be relayed to them. There is no need to go to work in the community on their native market day or when they are observing any of the festivals. You will be greatly appreciated if you show interest in their relevant activities, mourn with

them when they are bereaved and rejoice with them when they do so. In our communities, the traditional healers have a very prominent role to play in the lives of the villagers. In fact, for many villagers, they are the first port of call for any ailment and it is only when it fails that the sick one is referred to the health worker. Even when they will go to hospital, the traditional healer will first of all exorcise the “evil spirits” that is “causing” the problem. Therefore rather than health workers look down on these people or ignore this aspect of their life, the best approach is to train and integrate them into the health programme. For instance, for the eyes, you may train them to recognise troublesome eye conditions – administer first aid treatment, if need be, and then refer them appropriately; that way you accord them recognition, due respect and of course get their cooperation in return. Most importantly, the ETHICS of the profession must be uppermost in the minds of the health personnel. Do Not take advantage of the villagers by carrying out unethical and unauthorised EXPERIMENTS in the name of offering free medical care to the poor villagers. You would not only endanger lives by so doing (and that is immoral!) but also jeopardise future health programmes in such community because the trust had been betrayed in the first instance.

- c.) Selfish interests: Sometimes this poses a barrier to the functioning of CDT as some people may misunderstand the whole programme and tag it something else. For example, during one of our village trips to Achi, people refused to come out to the village square for treatment. On enquiry, we were told that two villagers went around asking people to keep away because the drugs cause infertility in both men and women. Unknown to them was the fact that those two men were selfish community

attendants capitalizing on the ignorance and fear of the people. One of them had asked us for some financial gratification which we did not grant and so to retaliate he started the false rumour. It took a meeting between us and the Igwe/his council, who were very supportive, to dispel that ugly rumour and put us back on track.

- d) Community Politics: Sometimes the problem could be political divisions among the various communities or villages. The best attitude to this is **DO NOT TAKE ANY SIDES**. Keep in focusl your mission and treat all fairly and equally.

#### External challenges

- Healthcare personnel –Owing to ignorance, skepticism, selfish interests - private practice by the health workers utilising materials made available by the programme to serve their own interests, the programme would be jeopardised. Steps should be taken to guard against or counteract these.
  
- Funding for campaigns and outreaches. The external bodies are not expected to continue funding these programmes *ad infintum*. They are not going to be around for ever especially now the world is experiencing economic recession. The funds are seriously dwindling and may soon dry up. The host governments, States and Local Governments and communities should wake up and take over the health care of the people, if there is hope to impact on the lives of the community members on sustainable bases.



#### **IV. Proposed further solutions – Way Forward**

**People-** Education! education!! education!!! To dispel myths about the diseases- such as diseases imposed by the perceived enemy in the family or neighbourhood, the people need a lot of information in simple vernacular language. Utilize all available communication media to inform the people as well as educate them. Nothing beats information and feedback.

##### **Program – health workers and other stakeholders:**

- Education! Education!! Education!!!. Constant training and retraining of health workers and other stakeholders – CDDs, TBAs, Traditional healers etc. by relevant teams.
  
- Commitment: Engage students, a vibrant and ever ready group, to participate as appropriate. Academic board should officially make their participation a form of extra credits usable in exams for this cadre of people. Prizes and other incentives to medical personnel (doctors, nurses, paramedics) should be instituted for those of them who participate and excel. Authorities should encourage the CDDs with mobility and if possible, financial incentives. Community leaders who perform creditably should also be rewarded. In addition, empower the communities by providing the necessary material resources for them to assist in treating their own people. Strengthen the Primary Health Care Centres by providing the necessary facilities to give emergency first aid treatment and operate an effective referral system.

- Program Evaluation: Continuous evaluation and reassessment of program no matter the scale or size of the effort is essential.

## **Conclusion**

The next frontier for the focus of medical care by all of us presently in the health care profession and indeed our up-coming young medical and paramedical personnel is community health initiatives in form of similar programmes targeted to use of limited resources for maximal impact with respect to disease management. We should not abdicate this responsibility to volunteer national and international medical missions who are not expected to have limitless stake in the matter and whose impact is therefore time limited. We must all think health, think community –our origin, and think meaningful development so that we are not left behind in the achievement of the MDGs like the rest of the world. It is our place and we are the only people that can put it sustainably right!

Everybody can assist in not only preaching this gospel but also in acting it – that is, assist in one way or the other in taking health care to the grassroots utilizing the Community Directed Treatment model. A saying goes thus: “ if you sweep your ‘door-mouth’ and I sweep my ‘door-mouth’, the environment will be clean”.

To Quote President Obama : YES WE CAN!  
Thank you all for listening!

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