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NIGERIAN ESSENTIAL DRUGS PROGRAMME

WHO-COORDINATED ACTIVITIES
DURING 1987 IN NIGERIA



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The following is a summary of activities organized and manuals/proceedings produced by the World Health Organization's Action Programme on Essential Drugs, to assist the Federal Ministry of Health in Lagos with the Nigeria Essential Drugs Programme in 1987. A short summary of each activity shows the various areas into which the Essential Drugs Programme reaches. Copies of the full reports are available upon request from WHO's Action Programme on Essential Drugs, 1211 Geneva 27, Switzerland.

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I. NATIONAL WORKSHOPS ON ESSENTIAL DRUGS
(Lagos, 1-5 and 8-12 December 1986)

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Introduction

The National Workshops on Essential Drugs took place in Lagos, December 1-5 and 8-12, 1986. Representatives from 19 states, the Federal Capital Territory of Abuja, and the Federal Ministry of Health participated.

The principal objective of the Workshops was to examine the problems of drug supply in Nigeria, particularly in the public sector, and to discuss ways and means to overcome such problems.

The problems are many and well-known: selection (type) of drugs, estimation of needs, procurement, financing, distribution, usage, and management.

The Workshops analyzed each problem area in turn, and drew up recommendations for solutions. These recommendations form the basis of the Proceedings. It was recognized by the Workshops that these are not perfect solutions, that any recommended solution could only serve to improve the situation rather than completely solve the problem. Further, improvements can only take place with the full cooperation of all concerned - State and Federal Government, health and administrative officials from the highest to the lowest level.

The Proceedings represent not only a record of the deliberations of Nigerian senior health professionals to help resolve the nation's pressing drug problems but also serve as a record of the commitment expressed by the participants to implement - as a matter of national urgency - all that can possibly be done to improve the availability of essential drugs in the nation's public health facilities. It was recognized by all that unless essential drugs were readily available, good primary health care could never be totally achieved, and that the objective of "Health for All by the Year 2000" would remain desirable but distant.

The Proceedings represent a statement by the State and Federal Governments that Nigeria is determined to have sufficient essential drugs for its population and to ensure they are rationally used as part of an effective and comprehensive primary health care policy.

Executive Summary

1. There is a chronic and serious shortage of drugs in Nigeria, particularly in public health institutions.
2. Some drugs that are in use are inappropriate, wasteful, and potentially harmful.
3. This situation seriously affects the effectiveness of health care delivery, reduces the functioning of the national health institutions and decreases prescriber morale and public confidence.
4. Immediate action should be taken to improve the supply of drugs to public health institutions throughout the nation by adoption of a National Essential Drugs Programme comprising:
 - Rational selection of essential drugs (drugs to treat the most common medical conditions in the population in the most cost-effective and safe manner, as per the Federal Essential Drugs List and WHO recommendations).
 - More accurate estimation of drug needs (Federal and State) through analysis of morbidity data and patient attendances, calculated according to rational drug selection and standard treatment schedules.
 - Rational procurement of high-quality essential drugs by their generic names.
 - Elimination from routine public sector supply of all drugs not on the Federal and State Essential Drugs Lists.
 - Implementation of a national policy to direct sufficient financial and material resources to the adequate supply and distribution of such drugs and to encourage prescribers in their rational use (standard treatment schedules).
 - Implementation of cost-recovery systems (charging for drugs) to ensure sufficient funds for essential drugs needs.
5. Public information and education campaigns need to be undertaken to promote rational drug usage and good patient compliance.
6. More local production of essential drugs according to Good Manufacturing Practices should be encouraged.
7. Better mechanisms for assuring the good quality of all drugs used in Nigeria should be established.

II. LOGISTICS IMPROVEMENT STUDY
(5-17 April 1987)

WHO MISSION TEAM

Mr A. Battersby - Health Planner
Mr A. Garnett - Architect
Mr B. Ayenbeku - Health Planner
Dr V. Oluyemi - Physician
Mr A. Umaru - Quantity Surveyor

EXECUTIVE SUMMARY

1. Purpose of Assignment

- 1) To assess the storage facilities at main stores in Kano and Bendel States,
- 2) To identify basic minimum standards for storage conditions in the Central Medical Stores of these two States,
- 3) To assess the capacity of the drugs distribution system,
- 4) To assess the management structure for the basic curative services and the monitoring of drugs utilisation,
- 5) To assess the stock control system in use,
- 6) To assess the knowledge and skill of the storekeepers at various levels,
- 7) To develop guidelines for resolving the problems identified, for conducting similar reviews in another six States, and for strengthening the National Essential Drugs Unit (NEDU).

2. Scope of Activity

The Team visited two States; Kano in the North and Bendel in the South. The recommendations that follow pertain to these two States. The main body of the report and its appendices also sets out guidelines for repeating the exercise in other States.

In the short time available, the Team was able to visit the following range of facilities in the two States:

State Central Medical Stores	2
LGA Stores	2
State Hospitals	1
Government Hospitals	4
District Hospitals	2
Comprehansive Health Centres	1
Health Clinics	3
LGA Dispensaries	2
Maternity Centres	3

3. Major Findings and Recommendations

3.1 Management structures

Responsibility for delivery of health services in Nigerian States is split between two Ministries: Health and Local Government. In Kano State both Ministries have facilities at the periphery. In Bendel States, Ministry of Health curative services end at the hospital level. Local Governments are responsible for all the curative care provided at the periphery by the public service.

There is a significant lack of coordination between the two tiers of government. This is especially marked at the lowest managerial level; namely, the Health Zone.

The total segregation of EPI activities into a separate vertical programme means that supply and storage facilities are duplicated and it is very difficult for activities to be monitored.

If effective management is to be developed for handling essential drugs, then the following needs to be done:

- 1) Strengthen, and in the case of Kano, establish a management structure at Zonal level,
- 2) Emphasize the role of the Zonal Medical Officer (ZMO),
- 3) Prepare detailed terms of reference for the ZMO and for the remainder of the Zonal staff,
- 4) Give ZMOs executive responsibility for all public sector health services in the Zone,
- 5) Draw up a plan of operation identifying all the major components of the Essential Drugs Programme, and the role of the ZMO in carrying them out.

3.2 Recording, Reporting and Monitoring

This is at present extremely weak. In Kano State, for example, recording of outpatient attendances is very incomplete. In Bendel State, ZMOs do not receive the outpatient reports from the LGA Dispensaries.

A major effort needs to be made to improve the quality of data relating to drugs utilisation, along the following lines:

- 1) Provide all units with indicative figures for the population that they serve. This we noted to have been done for the EPI programme,
- 2) Record all attendances at outpatient clinics; not only the new cases,
- 3) For major diseases such as malaria, keep morbidity data at all levels,
- 4) Provide health units with the proformas necessary for keeping records and for submitting reports,
- 5) Emphasize the need for ZMOs to undertake primary analysis of data,
- 6) Train ZMOs in basic analytical techniques, so that they can make effective use of the data gathered before it is passed on to the State,
- 7) Unless there is verification of data at the Zonal level, it is impossible to correct mistakes subsequently.

There can be no role for computers in the management of drug utilisation until an effective, reliable and proven manual system has been established and institutionalised.

3.3 Stores Management

At the State Central Medical Stores level, stores management is mostly satisfactory, with Kano being rather better than Bendel. However, with one notable exception (Agbor in Bendel State), stores management at other units is weak. Ledgers are frequently months out of date and stock cards are not being kept properly.

There is need for the staff of these units to be better supervised and to have refresher training in stock control.

3.4 Handling Money

Kano presently only charges for patient cards. Bendel, however, has been charging for drugs for over a year and has established a parastatal called Trading Concern to handle the supply and re-supply of drugs. The extent to which this is successful and replicable is difficult to judge from the data that the Team was able to gather. However, it is clear that little managerial use is yet made of revenue data.

If cost recovery for the Essential Drugs Programme is to be successful, then:

- 1) Simple revenue collection systems need to be developed which can be run by one person at peripheral units,
- 2) Simple accounting procedures need to be developed, which provide adequate information whilst being easy enough for busy health workers to use,
- 3) A close and detailed examination should be made of Bendel State's experience in charging for drugs. The Team was unable to determine if the system has been a success and is sustainable,
- 4) Means need to be found for providing health care to those patients who are outside the cash economy.

3.5 Central Medical Stores at Kano and Benin

Both the Central Medical Stores that we visited we found to have adequate space for current and foreseeable stock levels.

Nearly all the buildings seen are in need of some degree of maintenance. Certain of them are quite seriously defective and require urgent attention.

We consider that the existing facilities in both locations could be upgraded to provide excellent accommodation for the Essential Drugs Programme.

Specifically, we recommend the following:

- 1) Consolidation and replanning of existing storage facilities to reduce the risk of fire spread between buildings (Kano CMS in particular), and to accommodate the introduction of drug kits. Depending upon the frequency of incoming deliveries and the establishment of Zonal Stores, this may lead to a reduction in the number of buildings required at the CMSs.
- 2) Provision and proper maintenance of additional cooled storage (there is virtually none at the Benin CMS), to be maintained at temperature(s) recommended by drug manufacturers.
- 3) Improvement in structural fire protection, particularly at Kano CMS.
- 4) Installation of fire alarms and adequate fire fighting equipment.
- 5) Provision of drug compounding facilities.
- 6) Provision of a larger standby generator at Benin CMS.
- 7) General repair and maintenance.

3.6 Hospitals, Comprehensive Health Centres and LGA Stores

All the Hospitals, Comprehensive Health Centres and LGA Stores that we visited have adequate space provision for drug storage and dispensing, although a few have inadequate shelving and some have inadequate compounding facilities.

In Bendel State, however, we consider that a careful appraisal of existing facilities needs to be made so as to ensure that existing facilities in Zonal Hospitals are adequate for use as Zonal Stores. At present in Bendel State, drugs are supplied direct to all units from CMS, Benin.

Once again, maintenance of the building fabric and attached electrical equipment we found to be poor. In several units we noted there to be no provision whatsoever for cooled or refrigerated storage.

We recommend:

- 1) Every unit should have a refrigerator. If electricity on site is not constant and reliable, then this should be either:
 - a) An electrical model with a long "hold over" time, or:
 - b) A model that runs on Liquefied Petroleum Gas (LPG).
- 2) Wherever possible, drug stores should be cooled, although this is of less importance at the peripheral facilities, which store drugs for short periods. Air conditioners should be run for as much of the day as possible. In the North, in situations where mechanical cooling is not possible, the use of natural night cooling should be investigated.
- 3) Drug compounding facilities should be upgraded and repaired (unless preparations are to be provided direct from CMS).
- 4) General repair and maintenance.

3.7 Vehicles

Kano CMS has a fleet of vehicles in excellent condition, with evidence of a good standard of maintenance. The Kano Hospitals that we visited similarly have adequate transport.

In Bendel State, vehicle provision is a serious problem. The CMS, which is currently delivering to all State facilities, is under-provided with rather elderly transport. At the periphery there appear to be few working vehicles at all.

In the riverine areas of Bendel State, the lack of boats is very seriously impeding the delivery of health care to the people. This hampers both drug deliveries and the transport of health workers and patients. Indeed, we understand that lack of water transport has even led to the suspension of EPI.

In Bendel State we recommend that:

- 1) The fleet of vehicles at all levels be upgraded.
- 2) An adequate number of boats be provided for use in the riverine areas.

3.8 Maintenance

It is clear that building, equipment and vehicle maintenance is a major problem. We recommend that:

State Ministries of Health should appoint a cadre of Maintenance Officers at both State and Zonal levels. These officers should be active and mobile and be given status, authority and funding to ensure that facilities are properly maintained and that defects are rectified quickly and effectively.

3.9 Location Planning

Close attention needs to be paid to location planning in both of the States visited. This is particularly so at the periphery.

We observed instances where duplicate LGA and State Government Primary Health Care facilities serve the same community. There is little evidence of a structured and organised approach being taken to location planning and site selection and all too often it appears that health facilities are being sited well outside the curtilage of the villages that they serve.

We recommend that:

- 1) Careful location planning and site selection studies be undertaken for all Primary Health facilities.

4. Conclusion

The Team's visit was very brief and we are well aware that, in the time available, we have only scratched the surface of problems that will take time and a great deal of effort to solve.

In Bendel State, it appears to us, a considerable amount of ad hoc development of the health service has taken place, whilst in Kano State there is a more comprehensive health services infrastructure. However, where health services do exist in Bendel, they seem to be better organised.

Finally, we are indebted to our three colleagues from the Federal Ministry of Health, who travelled with us throughout and offered much help, cooperation, forbearance and enthusiasm.

III. FORMAL AND CONTINUING EDUCATION IN ESSENTIAL DRUGS
(17 May-5 June 1987)

WHO MISSION TEAM

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Professor A. Wertheimer - Academic Pharmacist
Dr G. J. A. Walker - Coordinator
Mr G. Abumere - FMOH Pharmacist
Mr O. Ayanbeku - FMOH Primary Health Care Unit

Conclusions - Summary

1. There is considerable support of the formal teaching of the essential drugs concept, rational use and relevant aspects of drug supply and management in both basic education programmes of prescribing and dispensing health workers (doctors, pharmacists, nurses and community health workers) and the establishment of the continuing education programme.
2. Reviews of curricula and discussions with representatives of regulatory bodies (Medical Council of Nigeria, National Postgraduate Medical College of Nigeria, Pharmacists Board of Nigeria and the Nursing and Midwifery Council of Nigeria), teachers at faculties of medicines and pharmacy, colleges of nursing and health technology, and the Federal Ministry of Health Primary Health Care Coordinating Unit, indicate that adjustments can be achieved with minor modification.
3. A crucial component of a successful essential drugs training programme is effective promotional activities. It is recommended that these promotional activities are directed mainly at all prescribing and dispensing health workers and are an integral part of the National Essential Drugs Project. They should include promotional materials such as calendars, ballpoint pens, plastic folders and car bumper stickers. These activities should be closely coordinated with those being considered by other consultancy teams, e.g., the production of a quarterly "Essential Drugs Newsletter" by the Federal Ministry of Health and the public health campaign.
4. Continuing education units should be established in the State Ministries of Health in Bendel and Kano to organize an on-going series of seminars and workshops for all prescribing and dispensing health workers employed by the state ministries of health, health management boards and local government authorities. The continuing education units should be staffed by a senior physician or pharmacist and a nurse tutor. They should both have teaching experience the nurse tutor at a college of technology. The functioning of these units should be monitored and their experience used to design similar programmes in other states.
5. The continuing education units should have sufficient material resources to adequately undertake their important functions. These include reference and textbooks, duplicating machinery, visual aid accessories and transport to take them to facilities in local government areas where many of the workshops for paramedical workers will be carried out.
6. The specific content of the state continuing education programmes should be decided upon by the staff of the units after consultation with the Federal Ministry of Health and practitioners working in the states. However, we recommend that the first task of the units should be to design and carry out a series of seminars concentrating on the essential drugs concept and drug supply and management issues. These are probably most efficiently carried out centrally (in Kano and Bendel Cities) for doctors, pharmacists and nurses. For other health workers (community health aides, assistants and health officers) sessions should be held in hospitals each covering one to two local government areas.
7. This initial series of seminars concerned with the essential drugs concept should be followed by a regular series of workshops devoted to issues related to rational drug use. All prescribing and dispensing health workers should have the opportunity to attend at least two such workshops per year.

8. We are confident that an effective continuing education programme can be established. There is widespread agreement among the different groups of prescribing and dispensing health workers and teaching staff that the implementation of an essential drugs programme together with continuing education in rational drug use are urgently required. In view of past experience with drug supplies we consider that if present general good will to the essential drugs concept is to be maintained and consolidated, then the most critical part of the National Essential Drugs Project is to ensure that adequate supplies of essential drugs are provided to where they are needed.
9. The responsibility for organizing the continuing education programmes should be the state ministries of health in consultation with the Federal Ministry of Health. The consultants are convinced that in view of the many talented and committed people they met that suitable personnel can be recruited to staff these programmes. We also consider that if the continuing education units are adequately resourced there are no major logistical impediments to implementing these programmes to include all government health workers in all parts of Bendel and Kano States.
10. It is estimated that the costs of curriculum revisions to basic formal education programmes can be largely covered by existing resources. An allocation of just over US\$ 28,000 in the first year of the programme should be used to provide relevant teaching materials and textbooks.
11. The continuing education programmes in Bendel and Kano States are estimated to each cost about US\$ 55,000 and N1,666,000 per year.

IV. INFORMATION, EDUCATION AND COMMUNICATION
(7-19 June 1987)

WHO MISSION TEAM

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Mrs G. O. Abumere - FMOH, Directorate of Pharmaceutical Services

Objective

This consultancy is to assist the Nigerian Federal Ministry of Health (FMOH) work out the likely strategy and costing for the IEC component of the proposed project. The IEC component is intended, in turn, to mobilize support for the new essential drugs programme on the part of the public and various leadership groups, gain acceptance of the need for cost-recovery through drug sales, improve compliance by patients in the use of essential drugs, and eventually to assist the public to become more effective consumers of essential drugs and other pharmaceuticals.

Guidelines for Preparing State Proposals and Required Federal Support

It is the team's opinion that the overall IEC strategy as outlined in the project design is already expressed to serve as guidelines for different states, what is important to think about and what types of target audiences to involve and educate. It is, however, recommended that the following activities would constitute a kind of minimum package for any kind of IEC activity to become successful.

1. In-depth training of health education officers.
2. Seminars for local chairmen in the local governments.
3. Information to village influentials such as village elders, religious leaders, teachers, etc.
4. Simple hand-outs to go together with the delivery of drugs.
5. One major poster with messages which are supporting the content of radio programmes and other types of IEC activities.
6. One set of a more comprehensive educational tools to be used by health education officers and nurses.
7. Using the essential drugs lists to carry basic messages on the rational use of drugs.
8. Making sure that if and when manuals are being produced to be used in the training of health professionals, one chapter is included for training communication skills with regard to essential drugs.

It is also recommended that a substantial part of IEC material is designed as an integrated part of locally-held seminars with local influentials and opinion-leaders. Based on some overall guidelines and objectives, sufficient freedom must be given to design material according to local conditions.

It is recommended that each state is stimulated to build up its own resource base. Within guidelines and objectives agreed upon with the Federal Support Unit, each state must be given the chance to design and carry out IEC programmes based on its own situation and problems.

The role of the Federal Support Unit could be:

- To review, communicate and if found necessary adapt the overall IEC strategy.
- To act as an information broker and collect experiences from different state's IEC programmes and take the responsibility to communicate this information to other states.
- To support different state governments and be able to give qualified educational advice.
- To liaise with those responsible for the logistics and distribution of drugs to ensure that there is a proper timing between the procurement and distribution of drugs and IEC efforts.
- To be responsible for building good relationships with relevant bodies on federal level and by doing so help local state governments to be able to build their own network with other relevant ministries on state level.
- To assist those responsible for IEC activities on state levels in utilizing local consultants and the private sector cost-effectively (for instance, giving advice on reasonable production costs, etc.).
- To take the initiative to arrange yearly workshops to which representatives from local IEC programmes are invited to share experience, get ideas on different types of IEC activities, etc.
- It should be considered, once the number of states with their own essential drugs projects become more than 7-8, to produce and distribute a newsletter 3-4 times a year.

To be able to carry out these responsibilities, the Unit would require access to the following skills:

- a) Administrative skills,
- b) Educational and teaching skills,
- c) Communications skills and competence to build good relationships with different bodies involved.

In order to be able to carry out these activities, it is necessary to provide the Federal Support Unit with one secretary to work only with typing, photocopying, and other secretarial tasks. As can be seen from what has been recommended, this will require adequate access to transport. The following type of equipment is recommended for IEC programmes:

Federal government level:

One vehicle
One typewriter
One photocopying machine
Stationary such as paper, stapling machines, notebooks, etc.

State government level:

One vehicle
One typewriter
One photocopying machine
Stationary

V. INITIAL ASSESSMENT OF THE
DOMESTIC PRODUCTION OF ESSENTIAL DRUGS
(14-20 June 1987)

WHO MISSION TEAM

Dr F. Adenika - Pharmacist
Dr J. Pogany - Chemical engineer
Mr S. Sacca - Economist
Mr G. D. Moore - Coordinator

1. Executive Summary

The domestic production of pharmaceuticals in the National Essential Drugs List (NEDL) is technically feasible at dosage form level in the great majority of cases. A definitive statement on the technical feasibility of specific products can only be made after standards of manufacture, quality, packaging, etc. have been fully established.

The present pharmaceutical processing industry has the industrial capacity to produce the national needs of most pharmaceuticals in the NEDL, even in one shift operation, and it is an economic rather than technical issue whether the unexploited capacity would be made available for such purpose. It appears that the issue in the domestic manufacture of the nation's requirements of essential drugs is one of willingness rather than the capacity to produce.

Most manufacturers meet the requirements of the current GMP regulations. The problematic manufacturing premises can be rehabilitated from a technical point of view.

Material inputs and manufacturing know-how for essential drugs production are available on the international open market from multiple sources. Human resources are locally available for most technical posts, but international cooperation and support is still required for continuous smooth operation and development of the industry. Particularly important is the establishment of technological research capacity, preferable thorough tax incentives.

Clear encouragement should be given by the Federal Government to local production of essential drugs as generics by 1) abolishing tariff discrimination on raw materials, 2) giving tax incentives to essential drugs (generic) production, 3) purchasing Federal and State needs of essential drugs as far as feasible local manufacturing sources, 4) making available sufficient funds for prompt and full payment.

A further in-depth study is recommended to define, in detail, how the domestic pharmaceutical industry can satisfy national needs of essential drugs and what technical, economic, and financial measures are needed to achieve this objective. This should include an exploration of all policy options available to the Government of Nigeria, including research into the policy change process.

At a later stage, a techno-economic feasibility study should be made on the domestic production of pharmaceutical fine chemicals by organic chemical synthesis as well as vaccines.

2. Background and Objectives

As part of the Nigerian Essential Drugs Programme (NEDP) preparation activities, a WHO mission studied the technical, financial and economic feasibility of increasing the domestic production of essential drugs.

The objectives of this mission were as follows:

- (i) to undertake an initial assessment of the potential for local drug manufacturers in Nigeria to participate cost effectively in the supply of essential drugs with special reference to those to be financed by the NEDP in the next five years;

- (ii) to prepare detailed terms of reference for a further in-depth study on the potentials for and constraints to cost-efficient local production of essential drugs.

An initial summary of the conclusions of the Mission is contained in an Aide Memoire of 26 June 1987, presented to the Federal Ministry of Health, Lagos, on that date.

3. Technical Feasibility of the Manufacture of Essential Drugs

The pharmaceutical industry has three main branches: the processing or dosage form industry, the pharmaceutical fine chemical industry and the manufacture of immunologicals. The industrial technologies used in these three branches differ basically from each other, therefore, the technical feasibility of local production can conveniently be analysed according to the above industry structure.

There is no pharmaceutical fine chemical industry in Nigeria today, and the manufacture of immunologicals is confined to yellow fever and antirabies vaccines. The pharmaceutical processing industry is well developed in the country and should be divided into two main groups for the analysis of the domestic production of essential drugs: the research based industry that sells mainly its original products and the generic industry which produces patient-expired drugs. The latter can further be subdivided into branded and non-proprietary name drug producers. This latter is the most important sub-group as far as the essential drugs programme is concerned.

These statements should always be borne in mind when discussing the pharmaceutical industry in general because discovery of new drugs cannot be expected from the generic pharmaceutical industry, or the research based industry will do its best to maintain strong patent and trademark legislation whereas the patent protection is irrelevant to the generic industry, but the trademark may be seen as the most important element of marketing strategy. Concepts like industrial capacity, costing structure, value added, etc., are not interchangeable among the different branches, groups and sub-groups of the industry.

3.1 Nigeria Essential Drugs List (NEDL)

Pharmaceuticals in the NEDL are classified by their industrial production technology. 203 active ingredients are included in 342 drug preparations, of which 39 are combination products or standard pharmacopoeial compositions. The distribution of pharmaceutical preparations by main dosage forms is given below:

- tablets	104
- coated tablets	23
- hard-gelatin capsules	8
- solutions and suspensions for injection	73
- powder for injection	20
- infusion for injection	6
- liquid preparations	41
- ophthalmologicals	25
- miscellaneous and special dosage forms	27
- immunologicals	

The production of tablets, hard-gelatin capsules and liquid preparations in Nigeria began more than 10 years ago. Injections and some miscellaneous dosage forms are also produced in the country. Human resources and general technological experience are also available at the Federal Vaccine Production Laboratory for the manufacture of immunologicals. Ophthalmologicals are not produced currently in Nigeria though the technical difficulty of their manufacture is about the same as that of injections. Miscellaneous dosage forms include dry syrups, dusting powders, ointments and creams, suppositories, oral powders/granules in sachets and topical and metered aerosols. The manufacture of these dosage forms is technically about the same as that of tablets. Compound benzoin tincture, activated charcoal, glucose oxidase reagent, etc. are classified in a special group because they are not produced as a rule by the pharmaceutical processing industry and the techno-economic feasibility of their production should be studied at individual product level. Exception is perhaps the intraperitoneal dialysis solution because its manufacture can be combined with that of infusions for injection.

Most of the drug preparations in the NEDL are freely available as finished products or as raw materials in open international trade at competitive prices. Patent constraints exist only in a few cases, e.g., cimetidine, praziquantel, ranitidine, etc. Therefore, manufacturing technology is available from multiple sources in the majority of the cases.

3.2 Pharmaceutical Processing Industry

Government Regulations

The FMOH has prepared a paper entitled "Guidelines for the establishment of pharmaceutical industries in Nigeria" which summarizes all the essential information a potential pharmaceutical processing manufacturer should know as a point of departure for investment in Nigeria. Other federal ministries that have to be contacted include:

- Ministry of Commerce and Industries,
- Ministry of Finance,
- Ministry of Internal Affairs,
- Ministry of Science and Technology,
- Ministry of National Planning, and
- Ministry of Employment, Labour, and Production.

The ministries all play an important role also in the operation of pharmaceutical processing companies.

The Nigerian Enterprises Promotion Act, 1977 put the pharmaceutical processing industry into Schedules II and III. Joint ventures that produce all drugs that they sell in Nigeria must have not less than 40% Nigerian equity whereas companies that both produce and import drugs must have an indigenous ownership of not less than 60%. Since most joint ventures were unable to produce all their drugs in Nigeria either for technical or economic reasons, the majority of the manufacturers pertain to the 40% or lower alien shareholding category.

Other principal statutes for the establishment and operation of business in Nigeria are the Business Names Act, 1961, the Immigration Act, 1963, and the Companies' Act, 1968.

Except for the Nigerian Enterprises Promotion Act, 1977, all of the above statutes are old and have not been revised for over 20 years. They do not necessarily reflect the current basic objectives of the Structural Adjustment Programme (SAP) and the NEDP.

Physical Plant Conditions

The design and construction of factory buildings has generally been carried out by Nigerian companies in cooperation with technical partners from overseas. Regular power cuts, irregular water supply, and the absence of central sewage systems are general problems. Most companies have their own standby generator and borehole to guarantee continuous operation.

Transfer of Technology

Foreign partners provide the registration data and manufacturing know-how in joint ventures. If a new dosage form has been formulated in Nigeria, support research (e.g., bioavailability, stability, etc. tests) is usually carried out in the laboratories of the overseas partners. The Nigerian processing manufacturers are currently not equipped to conduct such tests, therefore, fully Nigerian companies can only license documented manufacturing know-how from abroad.

Another major form of transfer of technology is training of industrial and quality control pharmacists overseas and in the course of everyday local operations. Foremen, machine operators, and maintenance engineers are usually trained on the spot. Trouble-shooting is frequently done by visiting specialists.

Local technological research and development capacity is very limited. Clinical trials are regularly conducted by several companies mainly for use in sales promotion.

Good Manufacturing Practices (GMP)

The FMOH set up a Committee in May 1986 in order to inspect 32 local drug manufacturers which had tendered for the supply of drugs to the Federal Government. This sample represented about 63% of the number of registered and licensed pharmaceutical processing establishments and most major manufacturers were included in the survey. The Inspection Committee assessed the level of GMP standards maintained and graded the manufacturers as follows:

- excellent	1
- very good	1
- good	6
- satisfactory	9
- fair	5
- poor	7
- very poor	3

The premises of one manufacturer had been rehabilitated and 13 new plants were being constructed or installed, therefore, excluded from the inspection of potential suppliers. 69% of the inspected premises were qualified to meet current GMP standards and regarded as manufacturers that can produce pharmaceuticals of acceptable quality.

The assessment reports for the inspected companies are a valuable source of information also on ownership structure, installed capacity by main dosage forms, quality controls facilities, storage conditions, and work force.

Manpower

Human resources are available at all levels of operation and management of the Nigerian pharmaceutical processing industry. Fluctuation is very high, however, among production pharmacists because other opportunities are more attractive both financially and career-wise. Companies have difficulties with the maintenance and repair of special sophisticated equipment such as automated analytical instruments because the locally available service capacity is low.

Working Capital

Practically all material inputs, namely therapeutically active ingredients, excipients, ampoules, hard-gelatin capsules, metal and plastic foils for strip packing and so on have to be imported from abroad. A part of the packing materials, in particular for the hospital market, are locally available but the metal sheets, plastic granules, paper, etc. to make them are also imported. This situation is usual rather than unique throughout the world and only the degree of self-dependence varies from country to country. High import content means high working capital requirements because all purchases from abroad must be made on letter of credit terms.

A business transaction cycle lasts for about six to eight weeks if the ordered goods and air freight capacities are immediately available. If the consignment arrives by ship, the time between ordering and receiving goods is from four to six months. The production and delivery of drugs takes another one to two months. Hence, inventories of imported materials and working capital requirements are high in comparison with those of the overseas competitors.

Capacity Utilization

The Pharmaceutical Manufacturers Group (PMG) of the Nigerian Manufacturers Association prepared a study on the capacity under-utilization of the drug industry in October 1985. The main findings are summarized below:

- the installed capacity could produce 88% of the current pharmaceutical requirements in Nigeria;
- not more than 30% of this installed capacity was utilized; and

- the remaining 70% unexploited capacity could be utilized if it were given additional import licenses for 50 to 70 million Naira for raw materials in 1986 (25 to 30 million Naira was received in 1985).

The capacity utilization was also low at the time of preparing this report. The cause of the same phenomenon was, however, different. In the pre-Second-tier Foreign Exchange Market period, the difficulties in obtaining import permits limited the better utilization of the installed capacity while today the customers' ability (consumer purchasing power) to purchase is the decisive factor.

The unexploited capacity of brand name drug manufacturers to produce 88% of the present pharmaceutical product requirements does not hold true automatically for the production of essential drugs. Hence, it is the willingness rather than the capacity to produce which is the real issue in the domestic manufacture of the nation's requirements of essential drugs.

VI. DRUG QUALITY ASSURANCE AND
DRUG REGISTRATION/INFORMATION
(30 June-31 July 1987)

WHO MISSION TEAM

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Mr O. A. Ayanbeku - FMOH, Primary Health Care Unit

Executive Summary

1. The purpose of the NEDP is to assure that drugs of the appropriate efficacy, safety and quality are made available to the population in sufficient quantities and at a price which can be afforded.
2. In order to give these assurances, it is necessary for a quality assurance system to be in place, supported by a registration system and enforcement arm with full legal authority.
3. The quality assurance procedures currently operating in Nigeria are inadequate.

Imported drugs can pass into the public system without proper checks being applied at the port of entry and without being tested.

Assessment of locally-based manufacturers by the Inspectorate is considered to be less than effective.

Drugs can pass through the supply system unchecked often having been stored and distributed under the most unfavourable of conditions.

No assessment of quality can be undertaken in the state where it is possible for drugs from the private sector to enter the state system.

There is an effective system for the recall of defective products from the market place.
4. Recommendations are made to reorganize the laboratory facilities to bring them all into the single control of the Federal authorities.
5. The Inspectorate needs to be strengthened in experience and numbers, the staff to be retained for longer periods than is current practice.
6. To enhance technical efficiency, communications and cooperation between the Federal Laboratories, the Inspectorate and the Registration Unit, it is recommended that these three departments should be brought under one single management within the same Directorate (i.e., the Directorate of Food and Drug Administration or the Pharmaceutical Services Directorate).
7. At state level, specific recommendations are given to repair deficiencies, and establish new procedures with adequate funding.
8. Recommendations are given relating to the training of staff at all levels in the FMOH, SMOHs and LGAs.
9. A time schedule for implementing the recommendations is provided, together with a budget estimate.
10. The current registration control is ineffective, as many products are on the market without any information being filed with the DRI.

11. Guidance is already available from WHO and other bodies such as the Commonwealth Pharmaceutical Conference working group, in product registration systems in developing countries, and their recommendations are endorsed.
12. The development of new legislation relating to registration mentioned above can only be introduced over a considerable period of time. This Essential Drugs Project is of immediate concern, and cannot await the desired comprehensive controls envisaged in any new legislation. It follows that any registration controls to assist the assurance of efficacy, safety and quality of essential drugs must be exercised on the basis of administrative innovation within the existing framework of control. Such a modification to current practices is recommended.
13. Recommendations are made to a new policy of procurement of essential drugs, based on a product registration with approved manufacturers being the only acceptable source of tenders.
14. Recommendations to strengthen the DRI are made with respect to registration and information activities.
15. The full cooperation of the FMOH, SMOHs and LGAs are sought in exchanging drug information, especially adverse effects experiences.
16. The consultants have presented their findings and recommendations in a direct manner, and trust that those concerned will accept them in the spirit in which they have been offered. None of these recommendations will have effect unless the full and active cooperation of all parties involved in the NEDP is given. People can make or break the programme.

VII. MISSION TO CONSOLIDATE AND COST THE PROJECT DESIGN
(6-29 July 1987)

WHO MISSION TEAM

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EXECUTIVE SUMMARY

This preliminary consolidated project design presents for discussion the proposed project organisation, project components, and budget for a five-year World Bank-assisted Nigerian Essential Drugs Project. The project design was initiated at the request of the FMOH in response to severe shortages in the supply of essential drugs at government health facilities and the consequent negative impact on public health and the use of health services.

Objectives

The Project is divided into two major sections: Part A, Primary Health Care Components and Part B, Federal Institution Components. The objectives of Part A would be to help local governments and states to support primary health facilities, and to some extent secondary state health facilities, through efforts to:

- (1) Select, procure, store, and distribute sufficient quantities of good quality essential drugs at the lowest possible cost;
- (2) Make the supply of drugs partially, if not totally self-financing through the establishment of well-managed drug revolving funds; and
- (3) Improve the diagnostic, prescribing, and dispensing skills of health workers.

Part A would service all states and local government through the development and dissemination of prototype essential drugs management systems, training materials, and public enlightenment programs. Through the project the local governments and state Ministries of Health in four states would receive intensive support for the establishment of self-sustaining Statewide Essential Drugs Services.

The objectives of Part B would be to:

- (1) Establish essential drugs programmes at Federal Health Institutions;
- (2) Increase the availability of essential drugs at Teaching and Special hospitals through the establishment of well-managed drug revolving funds;
- (3) Introduce essential drugs concepts into the curricula of Schools of Medicine, Pharmacy, Nursing and Health Technology;
- (4) Strengthen the drug registration and information system;
- (5) Strengthen quality assurance activities at the Federal and state levels; and
- (6) Promote the local production of essential drugs.

Organization

It is proposed that there be two administrative units responsible for the project. All Part A activities would be managed by a Primary Health Care Essential Drugs Development Unit (PHC-EDU) under the Primary Health Care Coordinating Unit. Part B activities would be coordinated by a Federal Essential Drugs Development Unit (FEDU), the reporting relationship for which has yet to be determined.

The project would be overseen by the Essential Drugs Steering Committee (EDSC) consisting of the director or the director's designee from each of the concerned directorates. The Essential Drugs Working Committee, an operations level committee consisting of representatives from FMOH directorates and selected other ministries, would continue to coordinate activities at the staff level.

Contents and Costs

The current total estimate for the project is 204 million Naira (US\$ 51 million). The major activities and amounts for each are as follows:

<u>Part A. Primary Health Care Components</u>	136 M Naira
1. PHC-EDU	4 M Naira
2. Bendel State	27 M Naira
3. Kano State	49 M Naira
4. Zone A State (Illustrative)	28 M Naira
5. Zone C State (Illustrative)	28 M Naira
<u>Part B. Federal Institution Components</u>	68 M Naira
1. FEDU	3 M Naira
2. Teaching & Special Hospitals	45 M Naira
3. Registration & Information	1 M Naira
4. Quality Assurance	19 M Naira

Financing provided through the project would be in the form of a World Bank loan to the Federal Military Government of Nigeria. The FMGN would direct funds to Part B activities and Federal Part A activities in the form of a grant. Funding for state level Part A activities would be on-lend to the individual states.

Project Planning Issues

Several remaining project planning issues are detailed in Section V of this project design. Organisational issues include the location of FEDU, selection and preparation of additional states, flow and accountability of funds for LGA programmes, and responsibility for essential drugs programmes in Federal health institutions. Technical issues include the allocation of funding for drug revolving fund "seed stock", level of support for local government facilities, and preparation of an implementation plan.

VIII. STUDY OF POTENTIAL FOR
PRIVATE SECTOR PARTICIPATION IN DRUG SUPPLY
(7-27 July 1987)

WHO MISSION TEAM

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Dr Fred Adenika - Pharmacist
Dr G. C. Brown - WHO Local Consultant
Dr V. A. Oluyemi - FMOH, Primary Health Care

EXECUTIVE SUMMARY

1. Objective of the Study

Analyze the feasibility of private sector participation in the operation of drug supply systems within state Essential Drugs Programmes (EDPs).

2. Research Procedures Employed

The research team conducted formal interviews with 22 individuals in the public and private sectors in Nigeria, including 7 with the state ministries of health and health departments of local government areas in Bendel and Kano states, and 15 within the private sector.

3. The Existing Model of Government Drug Supply

The current model of public sector drug supply consists of the procurement delivery, storage and distribution phases. At present, the private sector is involved only at the procurement and initial delivery phase.

4. Services that Could be Provided by the Private Sector

There are at least 12 services or functions that could theoretically involve or be sub-contracted to the private sector:

a) The procurement phase:

- 1) Utilize business or management consulting firms to assist with the estimation of drug requirements.
- 2) Engage professional associations to participate in and monitor the drug tendering process.
- 3) Provide incentives to increase manufacturing of generic products on the essential drugs list in existing enterprises.
- 4) Employ accounting firms to audit the accounts of drug revolving funds on a continuing basis.

b) The delivery phase:

- 5) Engage private insurance companies to insure shipments and storage facilities.
- 6) Hire clearing and forwarding agents to clear goods through ports and transport them to central, zonal, or LGA stores.

c) The storage phase:

- 7) Use local manufacturers or wholesale distributors to employ a phased delivery system that will relieve existing state and local storage facilities (by providing interim storage until shipment).

8) Utilize private medical laboratories or existing manufacturing facilities to test samples of drugs received.

9) Hire private management institutes and/or Private Voluntary Organizations (PVOs) to offer training programmes in stores management and inventory controls at the local level.

d) The distribution phase:

10) Engage local transport companies to distribute drugs from central stores to local health facilities and dispensaries.

11) Employ private public relations and advertising firms to provide public information and promote the use of generic drugs.

12) Utilize existing PVOs or retail pharmacy networks to deliver generic products to remote areas not reached by the existing public sector supply system.

Of the potential private sector services or functions listed above, only one, the use of clearing and forwarding agents, is currently employed in the government-operated drug supply system on a regular basis.

5. Three Potential Models of Private Sector Involvement

There are many different ways in which the different services or functions identified above could be combined into different models for the design of state essential drugs programmes. However, we can suggest at least three different models (or ways) of incorporating the private sector into the design of the individual state programmes.

a) The Sub-contracting Model:

Make better use of existing (under-utilized) manufacturing facilities to produce generic products on the essential drugs lists, test samples of drugs received through state procurement, and store products on order through a phased delivery system.

b) The Extension Model:

Utilize existing PVOs or retail pharmacy networks to distribute essential drugs to remote areas.

c) The Participation Model:

Involve representatives of established professional associations in the review and award of tenders.

6. State-Specific Recommendations for Bendel and Kano

a) Bendel: Bendel State has a good idea of the problems that have plagued its drug supply system in the past and has developed a plan to address them. The parastatal Trading Concern is central to its approach and could prove to be a model for other states. However, the apparent success of the Trading Concern in its first year of operation needs to be tempered by the fact that it had access to import licenses and a subsidy from the State Ministry of Health which paid for staff salaries and benefits. The medium- and long-term fiscal solvency of the parastatal should be monitored carefully.

The major problems with the current drug supply system in Bendel are the difficulty of reaching the remote, riverine regions of the state, the poor quality of SMOH delivery vehicles, and the need to insulate the Trading Concern from outside influences. There are three ways the private sector in Bendel could be involved in the EDP that would be cost-effective and socially beneficial:

- 1) Transportation from central stores to peripheral health facilities could be sub-contracted to private sector transport companies.
- 2) Cooperative pharmacies could be used to assist the state in the distribution of drugs to populations in remote and difficult to reach riverine regions of the state.
- 3) Representatives of professional associations could be engaged in the review and award of tenders by the Trading Concern.

b) Kano: The major problems with the current drug supply system in Kano are the lack of coordination between the state ministry of health and local government authorities, paying too much for the procurement of drugs, the quality of staff at the PHC level, and the difficulty of getting patients to accept the practice of paying for drugs dispensed from public sector health care facilities. There are three ways the private sector could be involved in the EDP that would be cost-effective and socially beneficial:

- 1) Sub-contract a portion of the necessary in-service training for PHC personnel to private sector management firms or PVOs already operating in the state.
- 2) Use existing retail outlets to extend the programme and to make the public more willing to accept user fees for drugs prescribed by public sector health facilities.
- 3) Involve representatives of professional associations in aspects of the tendering process.

7. Guidelines

a) Cost matrix

Two heuristic cost matrices were designed to illustrate the cost-effectiveness of sub-contracting several of the functions defined in section A of the report. Without actually costing any of the costs directly, we have estimated both where we expect that cost savings would exist and where costs would most likely increase.

b) Selection criteria

We recommend a state problem-solving approach be employed and that the potential social benefits of private sector participation be considered along with cost-effectiveness.

c) Modes of contracting

We recommend that a selective tendering process be adopted which accepts bids from a list of registered firms that is periodically (and regularly) revised. We also favor experimentation with forms of private sector participation in the procurement process.

d) Critical paths

States should begin with an identification of major problems, proceed to select potential private sector roles, and conduct feasibility studies. The existing public/private sector relationship should be assessed, and careful attention paid to the process (or ways) of involving the private sector.

e) Skill and time requirements

The administrative costs of registering, monitoring and selecting private sector firms for certain functions should not be underestimated. In states where SMOH staff capability is low, the costs of ineffective sub-contracting may outweigh any benefits of greater private sector participation.

f) Regional differences

There is far greater openness to private sector participation in Kano than in Bendel, due in part to different historical patterns of drug shortages in the two states and the personal experiences of relevant ministry officials. In the final analysis, state administrative capabilities, experiences and resources are probably more important than inherent regional differences in explaining attitudes to private sector participation.

8. Conclusions

Our report is intended primarily to suggest possibilities for improving the efficiency of the public sector drug supply system. We are not trying to make the ideological point that the private sector is always better (or more efficient) than the public sector. There are always a great many factors involved in making such assessments, risks as well as benefits. Rather, we are trying to indicate where we think greater cooperation between the public and private sectors is theoretically possible, feasible, and potentially efficacious.

IX. NATIONAL WORKSHOP FOR
TEACHING AND SPECIAL HOSPITALS
(Lagos, 26-30 October 1987)

A word of appreciation goes to the speakers who helped make the workshop a success:

The Honourable Minister of Health, Professor Olikoye Ransome-Kuti
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Introduction

The National Workshop on Essential Drugs for Teaching and Special Hospitals took place at the Durbar Hotel in Lagos October 26-30, 1987.

The main objectives of the Workshop were to provide a common understanding of the basic elements of a hospital Essential Drugs Programme and define the role and commitment which Teaching and Special Hospitals have in initiating and supporting Essential Drugs Programmes for Primary Health Care.

The Workshop was structured to prepare each participant for review and analysis of the basic elements of a hospital Essential Drugs Programme, namely drug selection and formulary management, quantification of drug needs, financing and procurement, cost recovery under a drug revolving fund, rational drug use, quality assurance and drug information services, in-patient and out-patient drug distribution and development, and essential drugs curriculum for health personnel. Small and large group discussions followed each resource staff presentation.

Closing Statement by Participants

1. The objectives of Essential Drugs Programmes in the Teaching and Special Hospitals are to ensure that safe, effective, high-quality essential drugs and medical supplies appropriate to the Teaching and Special Hospitals are available at all times on a sustainable basis and to ensure that drugs are prescribed, dispensed, and consumed rationally and cost-effectively.
2. Each Teaching and Special Hospital should establish its own comprehensive Essential Drugs Programme as the mechanism to achieve the above objectives.
3. The Federal Ministry of Health should endeavour to provide the Teaching and Special Hospitals with the financial, technical, training, logistical, and legal support necessary to plan and implement Essential Drugs Programmes at their institutions.
4. The Essential Drugs Programme will be implemented and monitored through the Hospital Drugs and Therapeutics Committee, which should have members representative of the clinical and non-clinical departments concerned with the supply and use of essential drugs and responsibilities which include monitoring all aspects of the institution's Essential Drugs Programme.
5. Each Hospital Drug and Therapeutics Committee should, on the basis of the National Formulary of the Federal Ministry of Health, establish and periodically revise an Essential Drugs List and Formulary which satisfies the pharmaceutical needs of the great majority of patients, based on established selection criteria and the use of generic names.
6. Quantification of drug requirements for procurement purposes should aim to obtain the greater therapeutic value for the funds available. It should be based on accurate consumption information derived from drug stock records (kardex, ledger, and such) combined with systematic analysis and review of this information.
7. The Federal Ministry of Health should continue to procure basic drug and medical supply requirements for Teaching and Special Hospitals through centralized Federal bulk tenders. Planning, conduct and follow-through for these tenders should be closely coordinated with the Teaching and Special Hospitals. Full communication should minimize misunderstandings regarding order quantities, delivery dates, and so forth.
8. Teaching and Special Hospitals will continue to purchase supplementary and specialised drug requirements individually through established institutional procurement procedures.
9. For purposes of strict quality assurance, the Federal Ministry of Health should prepare, continually update, and periodically circulate a list of Approved Pharmaceutical Manufacturers in Nigeria and abroad and the Federal Government stand, strengthen quality assurance through its chain of drug supply units.
10. To expand the supply of essential drugs to the level consistent with the responsibilities of Teaching and Special Hospitals, each Hospital should operate a well-managed, equitably implemented drug revolving fund.

11. Effort should be made at all levels to promote cost-effective, therapeutically sound drug use through formal and continuing education, prescription patterns and other such measures.
12. Teaching and Special Hospitals should endeavour to establish Drug Information Centers as well as programmes for patient and community enlightenment about the Essential Drugs Programme and proper drug use.
13. Teaching and Special Hospitals have a special responsibility to support Essential Drugs Programmes at Primary Health Care facilities through assistance in the preparation of essential drugs lists, training of key staff, procurement of essential drugs for PHC facilities directly operated by the Hospital, preparation of drug information such as a formulary or therapeutics manual for PHC, and establishment of patient and public enlightenment programmes.
14. Teaching and Special Hospitals should support the development and implementation of curriculum on essential drugs for all health care professions.
15. The Federal Ministry of Health should ensure effective and efficient laboratory services in Teaching and Special Hospitals, including establishments of up-to-date diagnostic facilities.
16. Federal Government should encourage local production of good quality drugs to service the Essential Drugs Programme and should specifically provide money for small-scale drug production in Teaching Hospitals.

Recommendations to the Federal Government by Teaching and Special Hospitals

The following recommendations emerged from the Workshop to the Federal Ministry of Health viz:-

The Federal Ministry of Health should provide:

1. Capital funding for the seed stock.
2. Reimbursement for the exempted groups.
3. Financial and technical support for training and continuing education for existing staff, e.g.
 - a) Equip all drug information centres in Teaching/Special Hospitals.
 - b) Provide training manuals.
 - c) Exchange programmes between various Teaching and Special Hospitals in Essential Drugs Programme.
4. Technical/financial support for laboratory quality control and diagnostic facilities.
5. Intensification for review and enforcement of all the existing regulations/laws on drugs.
6. Increased manpower to operate the EDP (provision of salary and allowances for the additional staff).
7. Information on national and international reputable supply sources vis-a-vis the quality assurance and implementation of the WHO Certification Scheme.
8. Continuation of the procurement of drugs.
9. Money for small-scale local production in the Teaching Hospitals.
10. Encouragement for local production of essential drugs.

11. Monitoring, evaluation, and implementation of Essential Drugs Programme.
12. Improvement on the existing infrastructures.
13. Grants for applied research in Essential Drugs Programme.
14. Financial/technical support for Community Health Education activities in Teaching and Special Hospitals.
15. The Teaching and Special Hospitals should be involved in:
 - a) Training of Primary Health Care Essential Drugs Programme personnel.
 - b) Monitoring and evaluation of Essential Drugs Programme activities in the Local Government Areas.
 - c) Review of the Essential Drugs List in Primary Health Care Essential Drugs Programme in line with changing morbidity patterns.

ANNEX 1

Workshop Sourcebook

National Workshops on Essential Drugs
1-5 and 8-12 December 1986

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The following lists have been transcribed from the draft State Essential Drug List presented by the State to the National Workshops on Essential Drugs, December 1986. The list is provided to assist States in further development of their State Essential Drugs Programmes.

For consistency and to facilitate comparison among states, lists have been organized by the Therapeutic Categories used in the Nigerian National Drug Formulary and Essential Drugs List. While every effort has been made to assure the accuracy of this list, some transcription errors may be found, for which the Workshop organizers take responsibility.

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College of Medicine, University of Ibadan, Ibadan.

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Dr Youssef Tawfik, WHO Consultant

Procurement
(Outline of Presentation)
Dr Philip O. Emafo, Directorate of Pharmaceutical Services
Federal Ministry of Health, Lagos.

Promoting Rational Drug Use
Prof. T.O. Okeahialam, Department of Paediatrics, College of Medicine, Enugu

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Dr E.E. Okpere, University of Benin Teaching Hospital, Benin City

Accounting and Management Requirements in the Essential Drugs Programme
Dr R. Dekker, Chanpharm, Jos

Development of Essential Drugs Curriculum
Prof. E.O. Ogunlana, Faculty of Pharmacy, Obafemi Awolowo University, Ile-Ife

Drug Information Services
Prof. E.E. Essien, School of Pharmacy, University of Lagos, Idi-Araba, Lagos

In-patient Drug Distribution
Prof. Kayode Oshuntokun, University College Hospital, Ibadan

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APPRECIATION

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