INSTITUTE OF LASSA FEVER RESEARCH AND CONTROL (ILFRC)

IRRUAA SPECIALIST TEACHING HOSPITAL, IRRUA EDO STATE, NIGERIA

ABOUT THE INSTITUTE

OCTOBER 2008.
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VISION AND MISSION STATEMENT

—Vision—

To be the preeminent institution for the Control of Lassa fever in Nigeria, a centre of excellence in Africa and a reference centre in the World.

—Mission—

To build capacity at all levels and provide quality services in the control of Lassa fever resulting in reduced or zero threat to Human life.
2.0 PHILOSOPHY OF THE INSTITUTE

2.1 FOUNDATION

Since the first discovery of Lassa fever as a disease entity in 1969 from Borno State, Nigeria, there have been outbreaks of varying magnitude and severity in West Africa countries of Sierra Leone, Liberia, Guinea and parts of Nigeria. The attendant high morbidity and mortality has been a major public health challenge causing much fear and misery in and outside the communities where the disease has been reported.

The Institute of Lassa fever Control located in Irrua Specialist Teaching Hospital (ISTH), Irrua, which is wholly dedicated to the attainment of excellence in the control of Lassa fever, is the first of its kind in Nigeria and indeed the West Africa sub region.

The institute was founded in January 2007 by the Board of Management, following a proposal for its establishment made by the Chief Medical Director through the Hospital Management Committee to the board.

Prior to the establishment of the institute, the Control of Lassa fever was carried out mainly through the activities of the Hospital Lassa fever Awareness campaign Committee. This committee was inaugurated in 2001 following the designation of the hospital by the Federal Ministry of Health as a Centre of excellence for the Control and Management of Lassa fever in Nigeria along with two other tertiary health institutions (University of Maiduguri Teaching Hospital, Maiduguri and Federal Medical Centre, Owerri). The committee was renamed Lassa fever Control Committee in 2006 to capture and reflect the growing all encompassing nature of its activities. Despite these attempts of the hospital with support of the FMOH to control the disease, yearly epidemics of the disease continue to occur with a recent trend to becoming an- all- year round phenomenon. It was therefore obvious that there were still gaps in the efforts to curtail the disease, necessitating a more radical and pragmatic approach.

The establishment of the institute is a carefully organized aggregate response to comprehensively meet this need. It is an indigenous initiative and a long awaited response to the yearning/ aspiration of untold millions. It is the result of several collective efforts to overhaul and scale up control efforts for a more encompassing and all-embracing program approach. It is borne out of a deep concern
over the recurring loss of highly skilled health manpower in the sub-region due to nosocomial disease. It is a bold step taken in high hopes and determination with the sole purpose to halt and reverse the present unacceptably high morbidity and mortality statistics due to Lassa fever, a ‘silent disaster’ in Nigeria, the West Africa sub-region and probably beyond.

The rationale for the institute is therefore based on the long history of uncurtailed Lassa fever epidemics in Nigeria, the need for a more comprehensive and coordinated control program, the need to build capacity to adequately respond to the epidemics, as well as the dire need for focused research and advocacy.

2.2 OBJECTIVES
The stated objectives of the institute as a centre for Lassa fever Research and Control are as follows:

a. To conduct prompt laboratory confirmation on all suspected cases of Lassa fever referred to the diagnostic lab and provide feedback for clinical management of patients.

b. To enhance the capacity of clinicians and other health workers in the case management and prevention of Lassa fever

c. To provide training for doctors, medical students as well as nursing professionals and auxiliary personnel who will provide service not only within the institute, but also in peripheral health institutions and other health units in the community, in consonance with the operational requirements of the health team under the national primary health care services.

d. To facilitate and coordinate Community Awareness Campaign/enlightenment/training on lassa fever

e. To conduct contact tracing and follow up of close contacts

f. To carry out active surveillance of lassa fever cases in health facilities and communities.

g. To initiate, plan and carry out advocacy visits to relevant health authorities/agencies
h. To seek networking collaboration with other institutions/agencies and bodies focusing on the control of lassa fever and other viral haemorrhagic illnesses.

i. To facilitate and conduct Operational research on Lassa fever and apply findings to the control of the disease.

j. To provide training for undergraduate and postgraduate medical students as well as nursing professionals and Community Health Extension Workers (CHEWS) who will provide service not only within the institute, but also in its associated peripheral health institutions and other health units in the community, in consonance with the operational requirements of the health team under the national Primary Health care System.

k. To ensure constant supply of IV ribavirin for the treatment of lassa fever.

l. To regularly publish current information on the incidence and seroprevalence status of Lassa fever through accurate collection, collation and analysis of all relevant data.

3.0 LOCATION
The institute is located within the premises of the parent hospital, Irrua Specialist Teaching Hospital (ISTH) Irrua in Edo State, Nigeria. The hospital commissioned in 1993 as a 230-bed hospital, is currently a 270-bed hospital. Its strategic location along the Benin-Abuja expressway in Irrua, the headquarters of Esan Central Senatorial District, enables it to serve the Central and Northern Senatorial Districts of Edo State, as well as parts of the Southern-Senatorial District. In addition, it also receives patients from the neighboring states of Delta, Kogi and Ondo. The vision of the hospital is to become a Centre of Excellence in Medicine, particularly in the areas of Rural and Sub-Urban Medicine and the Diagnosis and Management of Viral Haemorrhagic Fevers, especially Lassa fever. The Mission is to provide qualitative, affordable, readily available, acceptable and functional health care services and training in medicine and related fields in order to reduce morbidity and mortality in line with the national health targets.
As a tertiary health institution, ISTH render specialist care in Paediatrics, Obstetrics and Gynaecology, Surgery, adult medicine, and Community medicine. The number of patients admitted and treated in the hospital was 9215 in 2005, 11060 in 2006 and 11644 in 2007. At least 6% of the patients seen have been confirmed to have suffered from Lassa fever. Present Case fatality rate of Lassa fever in ISTH is 31%.
Efforts are being made to upgrade present facilities for the isolation and barrier nursing of Patients with Lassa fever. ISTH serves as the Teaching Hospital to Ambrose Alli University, Ekpoma. Courses offered include Human anatomy, Medical biochemistry, Human physiology, Pathology, Pharmacology, Community medicine, Psychiatry, Pediatrics, Obstetrics and Gynaecology, Surgery and Adult medicine., Students of the College of Medicine numbering four hundred are being trained in the hospital. One hundred and sixty medical doctors have been trained using facilities in the hospital.

4.0 EARLY BEGINNING OF LASSA FEVER IN ISTH AND ENVIRON

Lassa fever was first discovered in lassa village in Northern Nigeria in 1969. The disease became “forgotten” till 1989 when a family was almost completely erased in Ihumudumu Ekpoma. The diagnosis was made in the United State post mortem and a team came from the Center for Disease Control (CDC), Atlanta Georgia who visited the family and the then nearest Medical school. (the University of Benin/University of Benin Teaching Hospital).

For the second time it was again “forgotten” till 1993 or there about, when, with the inception of the Irrua Specialist Teaching Hospital (then Otibhor Okhae Teaching Hospital) located near Ekpoma, a strange pattern of disease was noticed among some patients. It started with fever. The patients later became anuric, had bleeding diasthesis and eventually died. Those that had dialysis survived and some people became deaf on recovery.

In 1994/95, blood samples were sent to the University College Hospital, Ibadan. Information arrived later that the strange disease was Lassa Fever. From then on clinicians became more vigilant and a higher index of suspicion was maintained. More suspected cases were identified and later confirmed in far away diagnostic laboratories (outside Nigeria) to be Lassa fever. Case fatality rate then was very high (more than 70%), owing largely to late presentation, case identification and absence of the drug Ribavirin, which is effective in lassa fever if administered early enough (within 6 days of disease onset).

The yearly epidemic of Lassa fever eventually attracted the attention of the Federal Ministry of Health who then designated
ISTH, a centre of excellence for the control of Lassa Fever in Nigeria in March 2001.

5.0 DIVISIONS /DEPARTMENT

The Institute for Lassa fever control has four divisions or units within it for ease of function and greater efficiency in attainment of set goals. These are:

(i.) ENLIGHTMENT CAMPAIGN, ADVOCACY AND TRAINING

This division will give priority to the place of health education in its central and unique position as the primary level of preventing infection and transmission of Lassa fever, with particular reference to the interaction between man and the reservoir of infection (rodents).

It will design and operate a community based awareness programme as well as a schedule that facilitates prompt and effective treatment of detected cases in the community, emphasizing early detection and treatment of disease as a preventive measure. It will provide enlightenment through relevant health education and health information to the family and general public, emphasizing the common individual’s participatory role as a consumer-member of the health team in health care delivery and in community health promotion.

(ii.) DIAGNOSTIC LABORATORY

The diagnostic lab is the ‘heartbeat’ of the institute. The constituent staff are trained and oriented in the diagnosis of Lassa fever in the lab using RT-PCR. Blood samples are collected from suspected patients during a daily surveillance of the wards, outpatient departments, Accident and emergency and other portals of patient admission into the patients.
Below are pictures of some of the state of the art equipments been currently used in the Institute.

In the **Amplification Room**, the following sets of equipments are currently been used:

Microwave Oven / Thermal Cycler.  
Gel Documentation.

Thermal Cycler(DNA engine) and Electrophoretic Power Pack.
In the **Sample Separation Room**, the following sets of equipments are currently been used:

- Cold Centrifuge.
- Safety Cabinet.

In the **Extraction Room**, the following sets of equipments are currently been used:

- The Micro-centrifuge, Thermo-shaker and Mini-centrifuge.
In the Media Room, the following sets of equipments are currently been used:

![Media Room Image]

(iii.) SURVEILLANCE AND RESEARCH

This division is responsible for the regular collection and collation of data on Lassa fever in and outside the hospital. With the help of the Data managers, such data are translated to meaningful statistics that can be disseminated and published.

(iv.) CASE MANAGEMENT AND DRUG SUPPLY

Suspected cases of Lassa fever are admitted into the isolation ward. Drug management is instituted only when there is a positive RT-PCR or there is a strong clinical evidence of infection despite a negative result. The division ensures regular supply of oral Ribavirin for prophylaxis in close contacts and parenteral Ribavirin for case management.

The division integrate infection prevention principles (and practice) in the programme of comprehensive health care with particular emphasis on the role of personal protective measures in health promotion.

The institute is currently developing an Isolation ward that will facilitate the treatment of lassa fever patients, this unit is still under construction and is near completion.
Pictures of the Proposed Lassa Fever Isolation Ward still under construction.

6.0 STAFFING AND ADMINISTRATION

The line of administration of the institute is hierarchically structured as depicted below with the advisory board at the apex of the management:

- ADVISORY BOARD
- OFFICE OF THE DIRECTOR
- OFFICE OF THE SECRETARY
- DIVISIONAL HEADS
- Other staff members

ADVISORY BOARD

The board performs oversight function, review policy and receives quarterly report from the director of the institute.

Members of the advisory board include:

Chief Medical Director of ISTH - Chairman
Chairman, Med advisory Comm, ISTH - Member
Director of Administration, ISTH - Member

Head of Nursing Services, ISTH - Member
The Head of Accounts, ISTH - Member
The Dean, FCS, AAU Ekpoma - Member
OFFICE OF THE DIRECTOR
The director is the head of the institute and oversees the daily function of the various divisions. He is responsible to the advisory board of the institute through the Chief Medical Director of ISTH.

The ILFRC is currently been headed by Dr. A. D. Asogun.

Dr. A. D. ASOGUN.

OFFICE OF THE SECRETARY
The secretary is the administrator and head of the secretariat. Along with the director, the secretary oversees the daily smooth running of services in the institute.

DIVISIONAL HEADS
Each of the four operational unit or divisions of the institute functions under the leadership of a divisional head appointed by the board on recommendation of the director of the institute.
OTHER STAFF MEMBERS

Members of staff not mentioned above include Public health nurses who are active members of the enlightenment campaign team. Others include Community Health Extension Workers and Orderlies.

ADMINISTRATION OF THE INSTITUTE

ADVISORY BOARD
↓    ↓    ↓    ↓    ↓
↓    ↓    ↓
OFFICES OF THE DIRECTOR
↓    ↓

SECRETARY TO THE INSTITUTE
↓    ↓
↓    ↓

DIVISIONAL HEADS
↓    ↓
↓    ↓

UNIT HEADS & STAFF MEMBERS

7.0 STRATEGIC PLAN (YEAR 2008-2013)

Based on the epidemiological pattern observed over the past few years, the institute has proposed a comprehensive plan of action spanning an initial period of five years with the aim of bringing this disease under control. Within this time period, the goals are as spelt out below:
GOALS AND TARGETS

- Reduce the incidence of the disease in the target communities by 80%
- Reduce the case-fatality rate by 75%
- Reduce nosocomial transmission to 0%
- Reduce secondary cases in households to <1%
- Establish and maintain an adequate surveillance system

KEY ACTIVITIES

- Community health education through Mass Awareness Campaigns
- Capacity development in case definition, diagnosis, management and prevention
- Provision of laboratory facilities for diagnosis and monitoring of treatment
- Adequate case management, including provision of dedicated facilities for renal dialysis and intensive care
- Surveillance and programme evaluation
- Research and publication/dissemination of results

Detailed plan of each of these five key activities is as per below:

7.0 PLANNED ACTIVITIES

7.1 Community health education through mass awareness campaign.

7.1.1 Advocacy visits to community leaders and Local government councils.

7.1.1.1 Visit two traditional rulers with his clan or village heads per quarter. This gives eight visits per year.

7.1.1.2 Visit one LGA Council per quarter. Four LGA’s will thus be visited per year. In the five years period, all the eleven LGA’s in the target communities will have been visited almost twice.

7.1.1 Awareness Seminar in LGA Councils and market places. This seminar will be planned to immediately follow the advocacy visits to council
executives. Accordingly there will be one such seminar per quarter, giving four LGA seminars per year. LGA council seminars are planned to coincide with market days in those localities so that awareness campaign are also carried out in the market place.

2.1.1 **Awareness campaign in schools.** School children engage a lot in high-risk behaviour when they hunt rats for food and sometimes for adventure.

Four schools will be targeted every quarter, giving a total of sixteen schools per year and eighty schools in five years.

7.1.2 **Awareness Campaign in NGO meetings.** Reputable NGO’s within the target area will be targeted for sensitisation and mobilisation for information dissemination to the grassroots.

One such campaign per quarter will give four NGO’s per year and twenty NGO’s in five years.

In all we plan to sensitize at least four thousand persons per LGA per year i.e. forty-four thousand persons per year and two hundred and twenty thousand persons in five years.

7.2 **Demonstration of safe method of sun-drying food items through the construction of model samples of elevated platforms (dimension 9m x 9m).**

One per LGA per quarter. i.e. 4 per LGA per year.

In 11 LGA’s, 44 platforms will be constructed per year.

7.3 **Development of health education posters, leaflets and handbills.** Posters and handbills carrying key messages on control measures will be produced.

Five thousand each of posters and handbills will be produced per year.
7.4 Manpower development

*Training /re-orientation of health personnel*

- two seminars for hospital (ISTH) staff in a year.
- One-day re-orientation workshop for PHC coordinators and private doctors in the endemic area per year.

Eleven PHC coordinators and their deputies in the eleven LGA’s within the target area will be invited along with forty-four private clinicians (doctors) will be trained per year. Thus sixty-six of them will be trained every year.

*One-day training workshop for school head teachers:* If school teachers are properly sensitized, they will become potential health educators that will facilitate the dissemination of information to schoolchildren and others in the community. The head teachers usually converge in their respective LGA headquarters once a month for a meeting with the Chief inspector of education. Advantage is taken of these meetings to train them after the initial advocacy visits to the C.I. E’s.

Training the teachers in each LGA will be done in batches once a year. One batch will consist of thirty participants. In one year 330 school headteachers would have been trained.

*Training of Community based volunteers.* Ten autonomous communities or wards per LGA will each identify one focal person on lassa fever who will be trained.

In a year ten volunteers will be trained in each LGA. In one year a total of 110 volunteers would have been trained.

7.5 Adequate Case Management

*Drug treatment with Ribavirin.*

Stock level of drug will be monitored through liaison with the pharmacists monthly to ensure regular supplies.

*Followup/contact tracing*
Isolation of cases, barrier nursing and strict observance of universal precautions.

Laboratory Support: Continued sampling and testing of suspected patients using RT-PCR

**PROGRAM EVALUATION AND SURVEILLANCE**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Indicators (OVI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Awareness Campaign</td>
<td>Number of awareness campaign Visits carried out.</td>
</tr>
<tr>
<td></td>
<td>Number of persons sensitized during campaigns</td>
</tr>
<tr>
<td>Manpower</td>
<td>Number of health personnel, school head teachers and community-based volunteers trained.</td>
</tr>
<tr>
<td>Adequate case management</td>
<td>Number of patients who received ribavirin</td>
</tr>
<tr>
<td></td>
<td>Case-fatality rate</td>
</tr>
<tr>
<td>General</td>
<td>Incidence of disease.</td>
</tr>
</tbody>
</table>
**SURVEILLANCE**

- Monthly collection of hospital data (number of cases, deaths and their addresses etc)

**RESEARCH**

Surveys to determine knowledge, and behavioural changes amongst others.

**8.0 COLLABORATING PARTNERS**

The institute presently collaborates on Lassa fever with the following bodies in the area of diagnosis and research.

- Department of Organismic and Evolutionary Biology, Centre for Systemic Biology, Harvard University, United States.
- Bernad Notch Institute of Tropical Medicine, Hamburg, Germany

**9.0 PAST AND PRESENT ACTIVITIES OF THE INSTITUTE**

The institute has been involved in Community health education/awareness campaign in Edo State and beyond in order to enlighten the public on ways to prevent Lassa fever. An advocacy effort to enlist the support of various governmental and non-governmental agencies in the Control is on-going. The
The institute is the brain child of the present ISTH management that contributed to the formation of a National Lassa fever Stake holders' forum. This is a national movement to advocate for the control of Lassa fever in Nigeria. The movement facilitated the organization of a regional conference on Lassa fever in December 2007 at Reiz Continental Hotel, Abuja. The institute is also engaged in Lassa fever Research in order to know the magnitude and extent / geographical spread of the disease, including the distribution of the reservoir (mastomys species).

The institute now has the capacity to for the laboratory confirmation of clinically diagnosed cases of Lassa fever at Irrua. This is courtesy of collaborating partners. Firstly the Bernhard Nocht Institute (BNI) for Tropical Medicine, Hamburg-Germany and the Harvard graduate school of Public Health. Both partners assisted the hospital in the establishment of Lassa fever diagnostic and research laboratory by donation of equipment for RT-PCR, the current state of the arts facility for the diagnosis of Lassa fever and also by training of staff to use the equipment.

Staff of the ILFC includes a Consultant Public health Physician, who is the Director, three other doctors, three laboratory scientists, four Community health extension workers and two secretariat staff.

Funds are needed to complete the administrative building of the ILFC and for purchase of vehicles(4WDs) for Community awareness campaign.

**PRESENT FOCUS AND ACTIVITIES OF THE INSTITUTE**

- FACILITATION OF ADVOCACY AND ENLIGHTENMENT CAMPAIGN NATION WIDE.
- OPERATIONAL LASSA FEVER RT-PCR DIAGNOSTIC LAB AND TRAINING OF MORE LAB PERSONNEL
- DEVELOPMENT OF PROTOCOL FOR COUNTRY WIDE RESEARCH
- CAPACITY BUILDING IN CASE MANAGEMENT AND PREVENTION
- ORIENTATION OF CLINICAL HEADS OF DEPARTMENT ON THE CRITERIA FOR RT-PCR

**ACTIVITIES IN VIEW**

- INSTITUTIONAL TRAINING OF COMMUNITY HEALTH WORKERS AND VILLAGE VOLUNTEERS IN THE EARLY CASE RECOGNITION AND REFERAL PROCEDURE
- TRAINING WORKSHOPS FOR PRIVATE CLINICIANS AND PHC COORDINATORS
- TRAINING WORKSHOPS FOR OTHER CATEGORY OF HEALTH WORKERS INCLUDING LAB PERSONNEL, NURSES, PHARMACISTS.
- SENSITISATION WORKSHOP FOR PATENT MEDICINE DEALERS
- SENSITISATION WORKSHOP FOR PRIMARY AND SECONDARY SCHOOL HEADS
- TRAINING WORKSHOPS FOR LGA CHAIRMEN AND COUNCILLORS IN EDO STATE.
- TRAINING AND REORIENTATION OF ISTH STAFF ON CASE MANAGEMENT AND PREVENTION OF NOSOCOMIAL LASSA FEVER
ACKNOWLEDGEMENT


2. Dr. M Momoh – Excerpts from “History of Lassa fever in ISTH, Irrua”

3. Dr. A.D. Asogun – Excerpts from “Lassa fever Control Program in ISTH – Plan of action”