Post Leprosy Elimination and Re-emergence of Leprosy in HIV/AIDS Era: Where have we reached, what needs to be done to reach the desired goal; a Kenya without Leprosy

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OUTLINE

• Definition of leprosy
• Epidemiology
• Diagnosis of leprosy
• Leprosy treatment and management
• Integration of leprosy services
• Leprosy in the era of HIV/AIDS
• Challenges and way forward
LEPROSY

It is a chronic infectious disease caused by *Mycobacterium leprae*, an acid fast, rod shaped bacillus. It mainly affects the skin, peripheral nerves, and the mucus membrane.
Global Leprosy Situation 1998

Leprosy: latest prevalence rates
2002

- 2 to 5.3 cases (4)
- 1 to 2 cases (6)
- 0 to 1 cases (73)
### Leprosy Situation in 2011

<table>
<thead>
<tr>
<th>Region</th>
<th>New Cases detected during the year 2011</th>
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<tbody>
<tr>
<td>WESTERN</td>
<td>20</td>
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<tr>
<td>NYANZA</td>
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<tr>
<td>COAST</td>
<td>47</td>
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<td>EASTERN</td>
<td>8</td>
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<td>NAIROBI</td>
<td>12</td>
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<tr>
<td>CENTRAL</td>
<td>2</td>
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<td>RIFT VALLEY</td>
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<td><strong>TOTAL</strong></td>
<td><strong>113</strong></td>
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EPIDEMIOLOGY

- Leprosy New Cases & Cases on register by the end of the year: 1986-2011
**GOAL AND OBJECTIVE OF LEPROSY ERADICATION PROGRAMME**

- **Goal:** elimination of leprosy i.e. to reduce the prevalence rate to less than 1 per 10000 population by the year 2000 AD.

- **Objective:** To arrest disease activity in all the known cases of leprosy by the year 2000 AD

- **Strategy:** The elimination strategy
CONTROL OF LEPROSY

• It means no longer to be a public health problem
ERADICATION OF LEPROSY

• It is defined as interruption of transmission of leprosy to attain a stage of zero level
ELIMINATION OF LEPROSY

The elimination of leprosy as a public health means reducing the prevalence of leprosy to below one case per 10000 population.

Elimination of leprosy will be achieved by:

- Making MDT accessible to all communities and areas.
- Treating all registered cases with MDT.
- Diagnosing and promptly treating all new cases.
- Improving quality of patient care, including disability prevention and management.
- Ensuring regularity and completion of treatment.
- Enlisting community support for the programme.
SUSPECT CASE OF LEPROSY

- One or more suggestive skin patches with normal sensation
- Extensive loss of sensation in the hands or feet with no other evidence of leprosy
- One or more grossly enlarged peripheral nerve trunks with no sensory loss or skin lesion
- Painful nerves with no other evidence of leprosy
- Painless ulcers on hands and/or feet with no other evidence of leprosy
- Nodules on the skin with no other evidence
WHO IS LIKELY TO REPORT TO THE HEALTH CENTRE

• Leprosy cases who were never treated before
• Leprosy cases who had treatment with dapsone in the past
• Leprosy cases who had treatment with MDT in the past
• Suspect cases
• With other skin lesions
• Other conditions causing nerve damage
• Contacts of leprosy patients for check up
• Normal individual for information
How to examine for leprosy?

- Examine in a well-lit room
- Examine the whole body
- Ask since when the patch was noticed
- Ask what treatments have been tried
- Test for sensation
- Look for any visible deformities
How to diagnose leprosy

- Examine skin
- Check for patches
- Test for sensation
- Count the number of patches
- Look for enlarged peripheral nerves
DIAGNOSIS OF LEPROSY

- Hypopigmented or reddish skin lesion(s) with definite loss of sensation
- Enlarged peripheral nerves with or without nerve damage.
- Positive skin smear
FLOW CHART FOR DIAGNOSIS AND CLASSIFICATION

SKIN LESION AND SENSORY LOSS - LEPROSY

ONE SKIN LESION
SLPB leprosy

2-5 SKIN LESION
PB LEPROSY

More than 5 lesions
MB LEPROSY
Leprosy - one of the few diseases which can be eliminated

- Leprosy meets the demanding criteria for elimination
  - practical and simple diagnostic tools: can be diagnosed on clinical signs alone;
  - the availability of an effective intervention to interrupt its transmission: multidrug therapy
  - a single significant reservoir of infection: humans.
ADVANTAGES OF MDT

• Highly effective in curing the disease
• Reduces the period of treatment
• Well accepted by patients
• Easy to apply in the field
• Prevents development of drug resistance
• Interrupts transmission of infection
• Reduces risk of relapse
• Prevents disabilities
• Improves community attitude
POINTS ON MDT TREATMENT

- Every leprosy patient should receive treatment with more than one antileprosy drug
- Standard MDT is very safe and effective
- It is available free of charge for leprosy patients
- Standard MDT is for a fixed duration
- At the completion of a full course of MDT the patient is cured
- Use clinical criteria to classify and decide the treatment regimen
- If in doubt of classification, give MB treatment regimen
- Active follow-up after completion of treatment is not necessary
- In case of relapse, re-treat with appropriate standard MDT regimen
Treatment regimens

PB Adult
(6 blister packs) to be taken monthly within a maximum period of 9 months
- Rifampicin 600 mg once a month
- Dapsone 100 mg every day

MB Adult
(12 blister packs) to be taken monthly within a maximum period of 18 months
- Rifampicin 600 mg once a month
- Clofazimine 300 mg once a month
- Clofazimine 50 mg and dapsone 100 mg every day

SLPB
- Single dose ROM
- Rifampicin 600 mgm
- Ofloxacin 400 mgm
- Minocyclin 100 mgm
Multi Drug Therapy

**PB adult treatment:**
- **Once a month:** Day 1
  - 2 capsules of rifampicin (300 mg X 2)
  - 1 tablet of dapsone (100 mg)
- **Once a day:** Days 2–28
  - 1 tablet of dapsone (100 mg)
**Full course:** 6 blister packs

**MB adult treatment:**
- **Once a month:** Day 1
  - 2 capsules of rifampicin (300 mg X 2)
  - 3 capsules of clofazimine (100mg X 3)
  - 1 tablet of dapsone (100 mg)
- **Once a day:** Days 2–28
  - 1 capsule of clofazimine (50 mg)
  - 1 tablet of dapsone (100 mg)
**Full course:** 12 blister packs
When treatment is completed

- Congratulate the patient
- Thank family/friends for their support
- Reassure that MDT completely cures leprosy
- Any residual lesions will fade away slowly
- Show them how to protect anaesthetic areas and/or disabilities
- Encourage to come back in case of any problem
- Tell that they are welcome to bring other members of family or friends for consultation
- Remove the patient’s name from the treatment register
Disabilities such as loss of sensation and deformities of hands/feet/eyes occur because:

- Late diagnosis and late treatment with MDT
- Advanced disease (MB leprosy)
- Leprosy reactions which involve nerves
- Lack of early detection of reactions and effective treatment of reactions
- Lack of information on how to protect insensitive parts
Disabilities can be prevented

The best way to prevent disabilities is:
- Early diagnosis and prompt treatment with MDT
- Inform patients (specially MB) about common signs/symptoms of reactions
- Ask them to come to the facility when they develop reactions
- Start treatment for reaction Inform them how to protect insensitive hands/feet/eyes
- Involve family members in helping patients
Why integrate leprosy into the general health services?

Integration means to provide “comprehensive” essential services from one service point

- to improve patients’ access to leprosy services and thereby ensure timely treatment
- to remove the “special” status of leprosy as a complicated and terrible disease
- to consolidate substantial gains made
- to ensure that all future cases receive timely and correct treatment
- to ensure leprosy program changes from vertical to integrated program
- to ensure that leprosy is treated as a simple disease
Advantages of Integrating Leprosy Services

- Transmission of infection interrupted early
- Stigma reduced further
- Development of deformities prevented
- Patients treated early
- Patients detected early
Post leprosy elimination in the era of HIV/AIDS

- Due to availability of ARVs, the development of leprosy as an IRIS has been documented in many parts of the developed world.
- This has been associated with an increase in the CD4 count from the initial pre-HARRT count.


Leprosy presenting as immune reconstitution inflammatory syndrome: proposed definitions and classification

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Leprosy as IRIS in PLWAS

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<tr>
<th>Table 2. Distribution of the 21 IRIS cases within leprosy IRIS classification</th>
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<td>IRIS Classification</td>
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* There are some missing information about CD4+ IRIS and HAART Scheme.
Leprosy as IRIS in PLWAS

Leprosy as Immune Reconstitution Inflammatory Syndrome in HIV-positive Persons

To the Editor: More than 2 decades ago, when HIV was first detected, many investigators predicted to biopsy result; patient 2’s case was compatible with such criteria. Each patient was treated for leprosy, and each responded favorably. The purpose of our case study was to confirm M. leprae DNA in skin samples. The skin specimens were paraffin-embedded slides. DNA was extracted by standard molecular biologic methods that used xylene. PCR amplified the

References

3. Rotureau B, Ravel C, Nacher M, Couppie P. Curtet I. Dedet JP. et al. Molecular eni-
Leprosy as IRIS of HIV/AIDS in Kenya.

So far, 3 cases of Leprosy as IRIS on PLWAS have been detected in Western and Nyanza Province.
Case study 1

- Name........... Age: 38  Sex: M  Origin: Nyanza province
- Marital status: Married  ART: AZT+NVP+3TC
- Duration of treatment at onset of IRIS: 12 weeks
- CD4 count: 71 cells/mm$^3$
- Type of leprosy: Borderline Tuberculoid (BT)
- Type of leprosy reactions: Type 1 reaction
- Leprosy treatment: Completed MDT
- Current CD4 count: 621
Case study 1: signs of leprosy

- It took over 5 years for leprosy to be diagnosed despite visiting various health facilities for the skin condition
Case study 1 deformities and disabilities

- Delays in diagnosis led to development of deformities and disabilities
Case study 1 deformities
Case study 2

- Name: ...........
  Age: 35  Sex: Female  Origin: Bungoma
- Marital status: Single  ART: AZT+NVP+3TC
- Duration of treatment at onset of IRIS: 4-5 months
- CD4 count: 125
- Type of leprosy: MB, (Borderline Tuberculoid)
- Type of leprosy reactions: Type 1 reaction
- Leprosy treatment: MDT (Dapsone, Rifampicin and Clofazimine) on-going
- Current CD4 count:
Case study 2: Leprosy signs/reactions
Case study 2. MDT prevents deformities

With early case detection and treatment deformities and disabilities were prevented. This case had no deformities as shown here.
Case study 2. Drug effects

Clofazimine cause darkening of skin patches.
Challenges in management of leprosy in Kenya

Knowledge Gap in diagnosis and treatment

Shift in interest from leprosy to TB and HIV/AIDS

Funding problems both local and international

Poor documentation with under-reporting of leprosy cases in the country

Lack of research on leprosy

Change in presentation of leprosy in PLWAS- mostly careers with no clinical symptoms

Lack of support to leprosy patients with disabilities and deformities

Leprosy not in the training curriculum of HCWs
Way forward

1. Implementation of the leprosy post elimination activities outlined in the post-elimination strategy
Post Elimination strategy

• Train HCW in diagnosis, treatment and referral
• Treat, record all cases, successfully treated and released from treatment
• Integrate treatment of Leprosy into the general health care system
• Moving from Passive to Active case finding
• Establishing Leprosy specific support supervision
• Provision for disability prevention and rehabilitation
• Organise health education to patients, their families and community
• Formation of patient support groups by the people infected and affected by leprosy
Thank You!