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PADS APPENDICES

October 1989

JSAID/NAIROBI

Resources for Child Health Project

REACH



John Snow, Inc.
1100 Wilson Boulevard, 9th Floor
Arlington, VA
22209 USA
Telex: 272896 JSIW UR
Telephone: (703) 528-7474

PROVINCIAL AND DISTRICT HEALTH SERVICES STUDY

VOLUME III, PART A:

PADS APPENDICES

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APPENDIX: Scope of Work

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PROVINCIAL AND DISTRICT HEALTH SERVICES STUDY

I. BACKGROUND

Kenya's health services have expanded immensely since the 1960s, and great advances in service delivery have occurred. Increased geographical coverage, the introduction of sophisticated tertiary care services, and increased emphasis on child survival programs have been major features of this expansion. However, Kenya now faces a problem in financing these services. The macro-economic difficulties confronting the country have directly affected the country's health programs. The inadequacy of financial resources imposes limits on the development of health services, and the quality of health services is increasingly compromised by financial pressures. It has become abundantly clear that planned goals and objectives in the health sector cannot be met under existing financial arrangements. The continued growth in demand for services at a time when real resources are declining has placed a high priority on strengthening the health services delivery in the country.

Fundamental to this effort has been the development of a process to:

- o identify the constraints to effective and efficient delivery of services;
- o explore possibilities for attracting additional resources to the sector;
- o develop alternatives for improving the use of existing resources.

The process includes an ongoing policy dialogue within the Government of Kenya, among the major health providers at all levels of government, and with the major donor agencies. USAID/Kenya, through the REACH Project, has undertaken two studies to support this effort: the Kenyatta National Hospital Study; and the Nairobi Area Health Services Study.

These studies have made several important overall findings. There is considerable unexploited potential for increasing the efficiency and effectiveness of curative health services delivery at hospital and urban health centers, and these institutions can be further supported by various forms of cost-sharing by facility

clients. The studies have identified critical problem areas related to organisational complexity, centralized management, inappropriateness of care at different levels, and unclear referral systems, as well as the importance of the public/private mix in service delivery. The problem of the geographic concentration of health services in urban areas and technological concentration in large hospitals is compounded by the effects of concentration on the organisation of resources. Hospitals mix all levels of care, in part due to the weakness of the primary health care system, and this situation further constrains efforts to decentralize.

Hospitals will continue to dominate the health care system, and efforts to improve the performance of the system must give priority to improving hospital efficiency. Hospitals presently account for two-thirds of the government's recurrent expenditure on health, leaving few resources for preventive as opposed to curative services. Roughly 67 percent of the Ministry of Health (MOH) recurrent expenditures are used for salaries and wages, resulting in insufficient resources for drugs, equipment, and maintenance of the available facilities at all levels. Costs inherent in operating hospitals need to be better understood so as to develop and implement policies to contain their costs and identify the potential for cost-sharing.

Effective health system planning and resource utilisation requires consideration of the broad system of health services rather than only individual institutions and programs. An analysis of the system dynamics, in the flow and use of resources and the patterns of health service utilisation by current MOH clients, is necessary. It is important to understand these dynamics in relation to both public and private health services providers. Given the new policy directions of the government with regard to the implementation of user charges in government health facilities, it is important to assess the availability and adequacy of the administrative mechanisms for collecting and managing this funds.

It is necessary, therefore, to undertake a comprehensive study of the health delivery network encompassed by the provincial/district health system. The main aims of the proposed Provincial/District Health Services Study are to consider:

hospital efficiency and cost containment;

dynamics of the provincial/district system;

utilisation patterns and characteristics of current MOH clients; and

administrative mechanisms necessary for collecting and managing fee revenues and priorities for spending revenues for improving quality of care within facilities.

The proposed study will be undertaken with the collaboration of the Ministry of Health, USAID, the World Bank, the REACH Project and John Snow Inc., and Planum. It is conceived as an initial study, limited to a single provincial/district system and an in-depth examination of 3 hospitals (Nakuru Provincial Hospital, Naivasha Subdistrict Hospital, NGO Hospital) and 4-5 health centers.

II. STATEMENT OF PURPOSE

The purpose of the Provincial and District Health Services Study (PADS) is to address the questions that were formulated by the Health Financing Steering Committee (appointed by the Director of Medical Services/MOH) during a workshop seminar held 2nd December, 1988, regarding the functions and operations of the district-level health services system. The Steering Committee targeted five question areas for priority examination in this study:

- 1) efficiency, productivity, and cost savings/reductions;
- 2) utilisation;
- 3) revenue generation and cost sharing;
- 4) facilities assessment; and
- 5) role of private sector within province/district.

The objective of the PADS is to suggest alternatives for government actions (policies, programs, other interventions) that can respond to the growing demand for health services and declining availability of government resources. Specifically, for each of the districts included in the study, the objectives are to:

- identify mechanisms to control or reduce the cost of providing the existing provincial/district hospital services;
- identify mechanisms to promote appropriate utilisation of provincial/district health services by current and future clients;
- identify mechanisms to collect, manage and spend the fee revenue to be generated within district hospitals and health centers; and
- identify mechanisms to improve the physical conditions of provincial/district facilities and extend their capacities.

The PADS in Nakuru/Naivasha is anticipated to be the first of 4-5 district studies that may need to be completed. Findings and results will be consolidated into a national profile and strategy as each district study is completed. This initial study will provide the protocol for any studies that may be required in other districts.

III. SCOPE OF WORK

The study will be conducted under the overall guidance and supervision of the Health Financing Steering Committee. REACH/John Snow Inc., funded by USAID, and PLANUM/Danish Hospital Institute, funded by the World Bank from the DANIDA Trust Funds, will collaborate to undertake the study. Overall coordination for the study will be the responsibility of REACH/John Snow.

The study will be based on detailed data collection and analytic efforts at each of the following institutions in one district:

- Nakuru Provincial Hospital
- Naivasha Subdistrict Hospital
- NGO hospital
- 4-5 health centers (mix of public and private).

To facilitate coordination of the PADS, the study will be divided into two parts (which reflect financial resources currently available from the funding agencies to the respective contracting organisations):

- Part A: Facilities/Equipment/Service Capacity Assessment
(Responsibility of PLANUM/ Danish Hospital Institute)
- Part B: Assessment of Health Service Delivery and Utilisation
(Responsibility of JSI/REACH)

The specific areas of emphasis for each of these parts is described below.

PART A: ASSESSMENT OF FACILITIES/EQUIPMENT/SERVICE PRODUCTIVE CAPACITY

The aim is to provide detailed information on the existing conditions of health buildings, equipment, and service productive capacity. A record will be made of the facilities which are available, the actual condition of those facilities, their capacity and potential for providing services, problems and the reasons for these problems.

Information to be collected will include the following:

- A block lay-out of existing buildings
- Lay-out plans of the individual buildings
- Area, approximate year of construction, functional condition of roofs, walls, doors and windows, floors, sanitary water and electrical installations.
- Information on the individual rooms, including the area, and comments on the suitability of the room size for functions carried on there, the capacity of the room and the extent to which it functions adequately.
- A record of basic key equipment, including location, year obtained, its condition and functional capacity, and possible problems of maintenance.
- A record of all services, water supply, sewage disposal heating and electricity, giving information on availability coverage/capacity and reliability.
- General information on numbers of staff, and average number of the numbers of patients who utilise the facilities every day, and possible seasonal variations in utilisation. The detail of this last information is dependant on the information available.

PART B: ASSESSMENT OF HEALTH SERVICE DELIVERY AND UTILISATION

The aim is to provide detailed information in response to the questions identified by the HCF Steering Committee in each of four priority areas of concern. The questions are as follows:

1. EFFICIENCY, PRODUCTIVITY AND COST REDUCTIONS/SAVINGS:

- a) What are the actual and imputed costs for key hospital /and other facility operations services/activities?
- b) What are the unit (average) costs in terms of service outputs? (for example, what are the costs of an in-patient day or a bed-day, an outpatient visit, a representative disease episode, a surgical operation, a normal delivery, preventive visits, an outreach visit?)
- c) How do these unit costs differ among hospital facilities of the same type, and between public and private hospital facilities; (reference to data from previously conducted KNH and NAS studies to be used as appropriate).
- d) What is the distribution of expenditures between personnel, drugs, supplies, transport? What is the effect of this distribution on output and productivity? What is the distribution of expenditures between curative and preventive/promotive health services?
- e) What is the magnitude of the budgetary gap at the facility (the difference between resources required for an adequately functioning facility and the actual budget--or expenditures--allocations)?
- f) What linkages exist for appropriate referral between facilities and different types and categories?
- g) What opportunities exist to achieve cost savings at the hospital facilities or to reduce the cost of providing services? (for example, adjustments in service mix, changes in staffing ratios, changes in prescribing or diagnostic practices, changes in length of stay).

2. UTILISATION

- a) What are the current patterns of service utilisation at the hospital and lower level facilities? How appropriate are these utilisation patterns?

- b) What are the characteristics of users of the hospital facilities? Do they reflect the socio-economic characteristics of the catchment area?
- c) What are the reasons for over and underutilisation?
- d) What role does the referral system play in determining utilisation? To what extent does it support appropriate utilisation of hospital and lower level facility services?
- e) To what extent are clients by-passing lower level facilities to seek hospital services?

3. REVENUE GENERATION/COST SHARING

- a) What fees, if any, are currently being collected?
- b) What are out-of pocket expenditures incurred with a hospital or other facility visit?
- c) To what extent are low income groups using hospital/lower level facility services?
- d) Are there adequate administrative structures for managing implementation of fee collection? What are the management and administrative requirements, procedures, and mechanisms for collecting, managing, and spending user fees? What would be the approximate costs of developing and implementing an administrative system for collection and management of fee revenue?
- e) What are the priorities for expenditure of fee revenue so as to improve the quality of service at the facility?

4. PRIVATE PROVIDER ROLE (to be limited to NGOs)

- a) What are fee schedules used by private providers? What are the repayment mechanisms? What provisions exist for access for those unable to pay? What is the proportion of non-paying patients? What are problems experienced in determining ability to pay?
- b) What is the relationship between costs of providing a unit of service and prices charged?
- c) What are budget planning procedures?
- d) What are strategic planning mechanisms?

IV. PRODUCTS

The study activities will result in the following outputs:

1. A report on findings - An analysis of costs, patterns of resource allocation and health services utilisation as described in the scope of work. The report will include a protocol for recommended future analytical efforts using the data base.
2. A report of methods - A protocol for carrying out similar data collection and analytical efforts in other areas.
3. A report proposing guidelines and criteria for establishing priorities for expenditure of fee revenue by the facility where it is generated to improve the quality of care.
4. A report proposing alternative administrative mechanisms and procedures for collecting and managing fee revenues, including appropriate mechanisms to meet follow up care and referral objectives.

APPENDIX: List of People Interviewed

APPENDIX: List of People Interviewed

Mr. F. A. Mworia	Permanent Hospital Secretary, Ministry of Health, Nairobi
Mr. J. K. A. Mutai	Deputy Secretary (Finance), Ministry of Health, Nairobi
Mr. F. K. Mwenda	Senior Assistant Secretary, Ministry of Health, Nairobi
Mr. J. Oryonyi	_____/ Ministry of Health, Nairobi
Mrs. E. Mudavadi	Chief Accountant, Ministry of Health, Nairobi
Mr. T. Omurwa	Health Information Systems, Ministry of Health, Nairobi
Mr. T. Muriithi	Implementation and Planning Unit (IPU), Ministry of Health, Nairobi
Mrs. E. A. Osodo	Assistant Librarian, Ministry of Health, Nairobi
Mrs. W. Jacinta	Library Consultant Ministry of Health, Nairobi
Dr. J. Otete	Deputy Director of Medical Services, Ministry of Health, Nairobi
Dr. S. D. Sonoiya	District Medical Officer of Health, Nakuru District
Dr. Mallek	Medical Superintendent, Provincial General Hospital, Nakuru
Dr. C. M. Maunda	Medical Officer of Health, Nakuru Municipality
_____	Administrative Asst. to Medical Officer of Health, Nakuru Municipality
Mr. Kiaria,	Senior Hospital Secretary, Provincial General Hospital, Nakuru
_____	Hospital Secretary, Provincial General Hospital Annex, Nakuru
Sr. E. Kariri	Acting Matron, Bondeni Maternity, Nakuru Municipality
_____	Clinical Officer, Langalanga Health Centre, Nakuru Municipality
_____	Medical Records Officer, Langalanga Health Centre, Nakuru Municipality
Dr. L. Kiptui	Provincial Medical Officer, Rift Valley Province (Nakuru)
Dr. Francis Waguchu	Clinical Officer, Mogotio Rural Demonstration Health Centre (Nakuru)
_____	Accountant, Nakuru War Memorial Hospital
_____	Sister in charge, Nakuru War Memorial Hospital

<hr/> Dr. Njoroge <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>	Doctor, Nakuru War Memorial Hospital Medical Officer, Naivasha Sub-District Hospital, Naivasha Hospital Secretary, Naivasha Sub-District Hospital Deputy Hospital Secretary, Naivasha Sub-District Hospital Nursing Officer, Naivasha Sub-District Hospital Nurse in charge, Karati Dispensary, Naivasha Nurse in charge, Karati National Youth Service Dispensary
Dr. Kaloandu	Medical Officer, Sulmac Cottage Hospital, Naivasha
Mr. J. Anguka	D.C. Nakuru District District Accountant Nakuru District
<hr/> Mr. H.M. Haji Mr. Kariuki Mr. J.A.O. Ngoro Mr. S.T. Ombira Miss M. Kariuki Mr. J.K. Kariuki Mr. F.G. Waguchu Mr. S.N.J. Ntongai Mr. I. Maigua Mr. Zakayo Molaya Mr. Paul M. Mutura Mr. S.M. Thirira Mr. M. N. Masake Mr. P. Njoro Mr. E.M. Njoroge Sister Margaret	District Officer, Naivasha Ag. Medical Superintendent, Nakuru P.G.H. Deputy District Accountant, Naivasha Hospital Secretary, Naivasha Nurse in-charge, Karate Dispensary Assistant Chief, Naivasha Clinical Officer in-charge, Mogotio H/Centre District Officer, Njoro Hospital Secretary, Annex, Nakuru Hospital Chief, Nakuru Municipality Assistant Chief, Njoro. Assistant Chief, Longonot Dispensary. Nurse in-charge, Naivasha G.K. Prison, Annex District officer II, Eldama Ravine Clinical officer in-charge, Elburgon H/Centre Matron, Mercy Hospital Enrolled Community Nurse - Ndabibi Dispensary Nurse in-charge - Longonot Dispensary Public Health Technician, Ndabibi H/Centre Senior Clinical Officer, Naivasha Hospital Clinical Officer, Njoro Health Centre Clinical Officer, Langalanga Health Centre Social Worker, Nakuru P.G.H.
<hr/> Mr. J.N. Gachuki Mr. N.H. Mwangi	Assistant Chief, Elburgon Location Assistant Chief, Elburgon Location
<hr/> Mr. B. Osiya Mr. J.K. Mungai Mr. E. N. Ngugi	Assistant Chief, Elburgon Location Assistant Chief, Elburgon Location

APPENDIX: PADS Inpatient Client Questionnaire

PADS INPATIENT CLIENT QUESTIONNAIRE

FACILITY: _____ **Code:**

DATA COLLECTOR: _____ **Code:**
(Enumerator)

DATE: _____ **Code:**

INSTRUCTIONS

1. Make sure that all questionnaire pages are there.
2. Do not read the options to respondents.
3. Refrain as much as possible from influencing responses.
4. Do not add extra boxes or codes.
5. Introduce yourself and your mission/task to interviewee.

1. Case Number: _____

2. Inpatient Ward: _____

1. Male Medical/General	8. Paediatric (All ages)	15. Skin
2. Male Surgical	9. Maternity	16. Observation
3. Female Medical/General	10. Amenity General	17. Male Orthopaedic
4. Female Surgical	11. Amenity Maternity	18. Eye
5. Obstetric/Gynaecological	12. Psychiatric	19. Other: _____
6. Paediatric (<2 years old)	13. Isolation	
7. Paediatric (2+ years old)	14. Tuberculosis	

3. Where do you live? _____

1. Inside District 2. Outside District

4. How far away (in kms)? _____

5. Sex of respondent: _____

1. Male 2. Female

6. Age (in years): (For Persons 5 years of age and older specify years) _____

(For children less than 5 years specify months) _____

7. What is your marital status? _____

1. Married 3. Widowed 5. Separated

2. Single 4. Divorced 6. Other: _____

8. What is your main occupation? _____

[DO NOT READ]

1. Housewife	4. Wage employment	7. Student
2. Unemployed	5. Self-employment (i.e., business)	8. Other: _____
3. Farming	6. Casual worker	

9. What is the highest level of education you have attained? _____

1. None	4. Secondary	7. University
2. Primary	5. High school	8. Nursery
3. Adult Education	6. Technical training/college	

10. How many years of schooling have you completed? _____

PADS INPATIENT CLIENT QUESTIONNAIRE

11. How many people live in your household? _____

12. Are you the head of the household?

- 0. No
- 1. Yes (GO TO QUESTION 13)

If answer to question 12 is 0 (no) then ask questions 12a and 12b:

12a. What is the main occupation of the head of your household? _____

[DO NOT READ]

- | | |
|--------------------|------------------------------------|
| 1. Housewife | 5. Self-employment (i.e. business) |
| 2. Unemployed | 6. Casual worker |
| 3. Farming | 7. Student |
| 4. Wage employment | 8. Other: _____ |

12b. How many years of schooling has the head of your household had? _____
(99 = Don't know)

13. How many days have you been here? _____

14. How many more days do you expect to stay here? _____
(999 = Don't know)

15. Did you pay any inpatient admission fee? _____

- 0. No (GO TO QUESTION 16)
- 1. Yes

If answer to question 15 is 1 (yes) then ask question 15a:

15a. How much did you pay? _____

16. How much are you likely to be charged at the time of discharge? _____
(9999 = Don't know)

17. How do you rate these charges? _____

- 1. High
- 2. Fair
- 3. Low
- 9. Don't know

PADS INPATIENT CLIENT QUESTIONNAIRE

18. Are you willing to pay more per visit at this facility to ensure that the services are improved? _____

0. No (GO TO QUESTION 19)

1. Yes

If answer to question 18 is 1 (yes) and this is not a maternity ward and this is not an amenity ward then ask question 18a:

18a. Would you pay (0=no, 1=yes):

- a) Ksh 20 per day _____
- b) Ksh 30 per day _____
- c) Ksh 50 per day _____
- d) Ksh 100 per day _____
- e) Ksh 150 per day _____

If answer to question 18 is 1 (yes) and this is a maternity ward then ask question 18b:

18b. Would you pay (0=no, 1=yes):

- a) Ksh 50 per stay _____
- b) Ksh 60 per stay _____
- c) Ksh 100 per stay _____
- d) Ksh 200 per stay _____
- e) Ksh 300 per stay _____

If answer to question 18 is 1 (yes) and this is an amenity ward then ask question 18c:

18c. Would you pay (0=no, 1=yes):

- a) Ksh 100 per day _____
- b) Ksh 200 per day _____
- c) Ksh 300 per day _____

19. Would you be willing to pay [READ LIST] for drugs? (0=no, 1=yes)

- a) Ksh 10 per prescription _____
- b) Ksh 20 per prescription _____
- c) Ksh 30 per prescription _____

PADS INPATIENT CLIENT QUESTIONNAIRE

28. How long did you wait before being admitted (in minutes)? _____

29. Is there another health facility nearer your HOME than this one? _____

- 0. No (GO TO QUESTION 30)
- 1. Yes
- 9. Don't know (GO TO QUESTION 30)

If answer to question 29 is 1 (yes) then ask question 29a:

29a. What is the main reason you didn't go to the closer facility? [DO NOT READ] _____

- | | |
|----------------------------------|----------------------------------|
| 1. Would be or was referred here | 8. Employer does not pay there |
| 2. Have to pay there | 9. Insurance does not pay there |
| 3. No drugs there | 10. Inconvenient hours there |
| 4. No doctor there | 11. Waiting time too long |
| 5. Services poor there | 12. Services not available there |
| 6. Staff not qualified there | 13. Other: _____ |
| 7. Came from work | 99. Don't know |

30. How would you rate the overall quality of health care in this facility? _____

- 1. Excellent
- 2. Good
- 3. Fair
- 4. Poor

31. How would you rate the following attributes/characteristics of this health facility? (1=Excellent, 2=Good, 3=Fair, 4=Poor)

- a) Attitude of the staff _____
- b) Drugs availability _____
- c) Availability of Beddings _____
- d) Quality of food/meals _____
- e) Reliability in supply of meals _____
- f) Adequacy/completeness of diagnosis _____
- g) Cleanliness of ward, beddings, bathrooms, toilets, etc _____
- h) Confidentiality/privacy _____

32. What are the three most important things you would want to see improved at this facility? _____

- | | | |
|---------------------------|---|---|
| 0. Don't know | 7. Staff availability | 13. Hours of meal service/food quantity |
| 1. Drug availability | 8. Alleviate bed sharing problem (overcrowding) | 14. Privacy _____ |
| 2. Staff attitude | 9. Provide theatre services | 15. Cleanliness/hygiene <input type="text"/> <input type="text"/> |
| 3. Staff quality | 10. Bed linen/uniforms | 16. Nothing |
| 4. Availability of doctor | 11. Blankets | 17. Clinical Treatment |
| 5. Waiting time reduced | 12. Quality of food/diet | 18. Mattress <input type="text"/> <input type="text"/> |
| 6. Schedule/hours | | 19. Laboratory facilities |

33. What are the best three things about this facility? _____

- | | | |
|---------------------------|-----------------------|---|
| 0. Don't know | 5. Waiting time | 10. Nothing |
| 1. Drug availability | 6. Schedule/hours | 11. Food <input type="text"/> <input type="text"/> |
| 2. Staff attitude | 7. Staff availability | 12. Treatment /diagnostic facilities |
| 3. Staff quality | 8. Number of beds | 13. Cleanliness <input type="text"/> <input type="text"/> |
| 4. Availability of doctor | 9. Theatre services | |

PADS INPATIENT CLIENT QUESTIONNAIRE

34. Were you referred to this hospital/facility?

0. No (GO TO QUESTION 35)

1. Yes



If answer to question 34 is 1 (yes) then ask questions 34a and 34b:

34a. Where were you referred from? _____

1. Hospital (gov't) 2. Hospital (non-gov't) 3. Health Centre 4. Nursing Home	5. Dispensary 6. Maternity Unit 7. Private practitioners clinic 8. Other: _____
---	--

34b. Why were you referred to this facility? (Main reason only) _____

1. For operation/theatre service 2. Be seen/examined by a doctor 3. Beds were full there 4. No inpatient department there 5. Drugs needed not available 6. Tests needed not available 7. Seriously sick 8. Relatives demanded referral 9. Continued treatment near home	10. Specialized care here 11. No laboratory services there 12. Other: _____ 13. First Baby 14. Previous complication 15. Vacuum extraction 16. Multiple pregnancy 17. Premature labour 18. Retained placenta
---	--

(Enumerator to collect diagnoses from patient chart)

35. Primary Diagnosis: _____

--	--	--	--

36. Secondary Diagnosis: _____

--	--	--	--

37. Other Diagnosis: _____

--	--	--	--

38. When were you admitted (dd-mm-yy)? _____

--	--	--	--	--

(enumerator check chart)

39. When are you likely to be discharged (dd-mm-yy)? _____

--	--	--	--	--

(999999 = Don't know)

40. Did they do any laboratory tests to diagnose your illness?

0. No (GO TO QUESTION 41)

1. Not necessary (GO TO QUESTION 41)

2. Yes

9. Don't know



If answer to question 40 is 2 (yes) or 3 (don't know) then enumerator to review chart to complete question 40a:

40a. What kinds of laboratory tests? (0=no, 1=yes)

a) Urine _____

b) Blood _____

c) Sputum _____

d) Smear _____

e) Other _____

PADS INPATIENT CLIENT QUESTIONNAIRE

[FOR INPATIENT MATERNITY CASES ONLY]

46. Did you attend an Ante-Natal clinic for this pregnancy? _____

0. No (GO TO QUESTION 47)

1. Yes

If answer to question 46 is 1 (yes) then ask questions 46a and 46b:

46a. Which Ante-Natal clinic? _____

1. Nakuru Municipal Council H.C	5. NMC Maternity Unit
2. Private clinic/hospital	6. Health centers (M.O.H.)
3. Mission facility	7. Dispensary
4. Government hospital	8. Parastatal

46b. How many visits did you make to this clinic before giving birth? _____

47. Which pregnancy is this (1st, 2nd, . . .)? _____

48. [For each prior pregnancy ask] Where did you deliver your:
(99=if amount paid unknown)

	Facility Code	Amount Paid
a) 1st Baby	<input type="checkbox"/>	<input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/>
b) 2nd Baby	<input type="checkbox"/>	<input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/>
c) 3rd Baby	<input type="checkbox"/>	<input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/>
d) 4th Baby	<input type="checkbox"/>	<input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/>
e) 5th Baby	<input type="checkbox"/>	<input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/>
f) 6th Baby	<input type="checkbox"/>	<input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/>
g) 7th Baby	<input type="checkbox"/>	<input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/>
h) 8th Baby	<input type="checkbox"/>	<input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/>

- Facility codes:
- 1 = Hospital
 - 2 = Maternity Unit
 - 3 = Nursing Home
 - 4 = Health Centre
 - 5 = Dispensary
 - 6 = Home (with help of TBA)
 - 7 = In a bus/matatu/vehicle
 - 8 = On the way to hospital
 - 9 = Other: _____

PADS INPATIENT CLIENT QUESTIONNAIRE

49. Were any of your previous deliveries complicated? _____

0. No (GO TO QUESTION 50)

1. Yes



If answer to question 49 is 1 (yes) then ask question 49a:

49a. What kinds of complications? (0=no, 1=yes)

a) Caesarian section _____	<input type="checkbox"/>
b) Forceps delivery _____	<input type="checkbox"/>
c) Vacuum extraction _____	<input type="checkbox"/>
d) Breach _____	<input type="checkbox"/>
e) Multiple pregnancy _____	<input type="checkbox"/>
f) Stillbirth _____	<input type="checkbox"/>
g) Retained placenta _____	<input type="checkbox"/>
h) Post partum haemorrhage _____	<input type="checkbox"/>
i) High Blood pressure _____	<input type="checkbox"/>
j). Other: _____	<input type="checkbox"/>

50. Why mainly did you come here to deliver? _____

- | | | |
|------------------------------------|--------------------------------|----------------------------------|
| 1. Near to my residence | 4. Had my other children here | 8. Expenses will be covered here |
| 2. Good care | 5. Inexpensive | 9. Unplanned/brought unconscious |
| 3. Referred here by medical person | 6. Friends/Relative works here | 10. Other (specify) |
| | 7. Doctor is here | |

51. How would you rate the maternity service here? _____

- | | |
|--------------|---------|
| 1. Excellent | 3. Fair |
| 2. Good | 4. Bad |

52. Do you know the fee charged here? _____

0. No [STOP INTERVIEW NOW]

1. Yes



If answer to question 52 is 1 (yes) then ask question 52a:

52a. How much is it? _____

APPENDIX: PADS Inpatient Client Questionnaire
Swahili Version

APPENDIX : PADS Inpatient Client Questionnaire
Swahili Version

1. Jina la mgonjwa _____

2. Wodi ya wagonjwa walazwi _____

1. Ya matibabu ya wanaume/ya ujumla
2. Ya upasuzi wa wanaume
3. Ya matibabu ya wanawake/ya ujumla
4. Ya upasuzi wa wanawake
5. Ya ukunga/ya kigainekolojia
6. Ya watoto (chini ya miaka miwili)
7. Ya watoto (zaidi ya miaka miwili)
8. Ya watoto (kwa jumla)
9. Ya ujauzito
10. Ya vifaa na hali bora kwa jumla
11. Ya vifaa na hali bora kwa ujauzito
12. Ya matatizo ya akili
13. Ya matengo
14. Ya kifua kikuu
15. Ya magonjwa ya ngozi
16. Ya uchunguzi
17. Ya uhazigi kwa wanaume
18. Ya macho
19. Nyingineyo _____

3. Unaishi wapi? _____

1. Ndani ya wilaya 2. Nje ya wilaya.

4. Umbali gani (kwa Km)? _____

5. Uzawa wa mhojiwa _____

6. Umri (kwa miaka): (kwa watu wenye umri wa miaka m tano na zaidi, taja miaka _____)

(kwa watoto wasiofikisha miaka mitano, taja miezi _____)

7. Umeoa/umeolewa?

1. Ndiyo
2. La
3. Nimefiwa na bwana/bibi
4. Nimetalikiwa
5. Tumetengana
6. Vinginevyo _____

8. Ni kazi gani kubwa unayofanya? _____

1. Mke nyumbani
2. Sina kazi
3. Ukulima
4. Kazi ya kuajiriwa
5. Kazi ya kujiajiri (kama biashara)
6. Kibarua
7. Mwanafunzi
8. Kazi nyingineyo

9. Umefika kiwango gani cha juu zaidi cha elimu?

1. Sikufika popote
2. Shule ya msingi
3. Elimu ya watu wazima
4. Shule ya upili/sekondari
5. Kiwango cha A
6. Chua cha mafunzo ya ufundi
7. Chuo kikuu
8. shule ya nasari/malezi

10. Umekamilisha miaka mingapi shuleni _____

11. Nyumbani kwenu mnaishi watu wangapi? _____

12. Wewe ndiwe mkuu wa nyumba yenu ?

- 0. La
- 1. Ndiyo (NENDA SWALI 13)

>

Ikiwa jawabu la swali 12 ni 0 (La) basi uliza maswali 12a na 12b:

12a. Mkuu wa nyumba yenu anafanya kazi gani hasa? _____
(USISOME)

- | | |
|----------------------|--------------------------------|
| 1. Mke nyumbani | 5. Amejiagiri (yaani biashara) |
| 2. Hana kazi | 6. Kibarua |
| 3. Ukulima | 7. Mwanafunzi |
| 4. Kazi ya kuajiriwa | 8. Kazi nyingineyo _____ |

12b. Mkuu wa nyumba yenu alisoma kwa miaka mingapi? _____

13. Umekuwa hapa kwa siku gapi _____

14. Unatarajia kukaa hapa kwa siku ngapi zaidi? _____

15. Ulilipa ada yo yote kwa kulazwa? _____

0. La (NENDA SWALI 16)

1. Ndiyo

Ikiwa jawabu la swali 15 ni 1. (ndiyo) basi uliza swali 15a

15a. Ulilipa kiasi gani? _____

16. Inawezekana utalipishwa kiasi gani wakati wa kuondoka hapa? _____

(9999 = Sijui)

17. Unayaonaje malipo haya?

1. Ni ya juu
2. Yanafaa
3. Ni ya chini
4. Siju

18. Ungekubali kulipa zaidi kila unapokuja kwenye kituo hiki kuhakikisha kuwa huduma zinafanywa kuwa bora? _____

0. La (WENDA SWALI 19)

1. Ndiyo

Ikiwa jawabu la swali 18 ni 1 (Ndiyo) na hii siyo wodi ya uzazi wala si ya vifaa na hali bora basi uliza swali 18a:

18a. Ungelipa (0 = la, 1 = ndiyo)

- | | |
|------------------------------|--------------------------|
| (a) Ksh. 20 kwa siku _____ | <input type="checkbox"/> |
| (b) Kshs. 30 kwa siku _____ | <input type="checkbox"/> |
| (c) Kshs. 60 kwa siku _____ | <input type="checkbox"/> |
| (d) Kshs. 100 kwa siku _____ | <input type="checkbox"/> |
| (e) Kshs. 150 kwa siku _____ | <input type="checkbox"/> |

Ikiwa jawabu la swali 18 ni 1 (Ndiyo) na hii ni wodi ya uzazi basi uliza swali 18b:

18b. Ungelipa (0 = La, 1 = Ndiyo)

- | | |
|---|--------------------------|
| (a) Kshs. 50 kwa muda wa kulazwa _____ | <input type="checkbox"/> |
| (b) Kshs. 60 kwa muda wa kulazwa _____ | <input type="checkbox"/> |
| (c) Kshs. 100 kwa muda wa kulazwa _____ | <input type="checkbox"/> |
| (d) Kshs. 200 kwa muda wa kulazwa _____ | <input type="checkbox"/> |
| (e) Kshs. 300 kwa muda wa kulazwa _____ | <input type="checkbox"/> |

Ikiwa jawabu la swali 18 ni 1 (Ndiyo) na hii ni wodi ya vifaa na hali bora basi uliza swali 18c:

18c. Ungelipa (0 = la, 1 = Ndiyo)

- (a) Kshs. 100 kwa siku _____
- (b) Kshs. 200 kwa siku _____
- (c) Kshs. 300 kwa siku _____

19. Ungekubali kulipia (SOMA ORODHA) madawa?

- (a) Kshs. 10 kwa kuandikiwa
(b) Kshs. 20 kwa kuandikiwa
(c) Kshs. 30 kwa kuandikiwa

20. Ni ada gani ya juu zaidi ambayo ungekubali kulipa kwa siku katika kituo hiki?

21. Kuna yeyote katika nyumba yenu mwenye kadi ya NHIF?

0. La
1. Ndiyo
9. Sijui

22. Nani atakulipia gharama hizi za hospitali? _____

- | | |
|------------------|------------------|
| 1. Hakuna malipo | 5. NHIF |
| 2. Mwajiri | 6. Bina nyingine |
| 3. Mimi mwenyewe | 7. NHIF na jamii |
| 4. Jamii yangu | 8. Mwingineyo |

23. Nyumba yenu (SOMA ORODHA) (0 = la, 1 = Ndiyo, 9 = Sijui)

- (a) Inamiliki biashara yo yote? _____
- (b) Ina mali inayokodishwa _____
- (c) Inapata pensheni/malipo ya uzeeni au faida _____
- (d) Inalima shamba au kuweka mifugo _____

24. Nyumba yenu hupata kiasi gani cha pesa kila mwezi kutokana na mambo yafuatayo (Kshs.)? (99999 = Sijui).

- (a) Mme/mapato ya kujiajiri au ya mshahara
(b) Mke/mapato ya kujiajiri au ya mshahara
(c) Mapato kutoka kwa watoto
(d) Mapato kutokana na watu wa ukoo, marafiki, wengineo
(e) Biashara (duka, kioski, hoteli, matatu, n.k.)
(f) Kodi ya nyumba
(g) Malipo ya uzeeni/pensheni/faida kutokana na hisa au akiba
(h) Ukulima na ufugaji
(i) Mapato mengineyo

25. Ulitumia usafiri wa aina gani kuja katika kituo hiki?

1. Miguu
2. Baisikeli
3. Basi/matatu/gari ya kibinafsi
4. Teksi/gari ya kukodisha
5. Gari yangu/gari ya kibinafsi
6. Gari la tajiri/mwajiri wangu
7. Ambulansi
8. Usafiri mwingineo

Ikiwa jawabu la swali 25 ni 3 (basi) au 4 (teksti) basi uliza swali la 25a:

25a. Ulilipa kiasi gani kufika katika kituo hiki?

26. Ulichukua muda gani kufika hapa (dakika)?

27. Ulisafiri kilomita ngapi kufika hapa?

28. Ulingojea kwa muda gani kabla ya kulazwa (dakika)?

29. Kuna kituo kingine cha afya karibu zaidi na nyumbani kwako kuliko hiki?

- 0. La (nenda swali 30)
- 1. Ndiyo
- 9. Sijui (nenda swali 30)

Ikiwa jawabu la swali 29 ni 1 (Ndiyo) basi uliza swali 29a:

29a. Ni sababu gani muhimu iliyokufanya usiende kwenye kituo hicho? (USISOME)

- 1. Ningeshauriwa au nilishauriwa kuja hapa
- 2. Ni lazima kulipa huko
- 3. Hakuna madawa huko
- 4. Hakuna daktari huko
- 5. Huduma si nzuri huko
- 6. Wafanyakazi si wajuzi huko
- 7. Nilikuja kutoka kazini
- 8. Mwajiri halipi huko
- 9. Shirika la bima halilipi huko
- 10. Sipati wasaa mzuri wa kuenda huko
- 11. Hungojea kwa muda mrefu huko
- 12. Huduma hazipatikani huko
- 13. Sababu nyingineyo.....
- 99. Sijui

30. Unaionaje hali ya matunzo ya afya kwa jumla katika kituo hiki?

- 1. Nzuri sana 2. Nzuri 3. Yafaa 4. Mbaya

31. Ungesema nini kuhusu mambo yafuatayo ya kituo hiki cha afya? (1 = Nzuri sana, 2 = Nzuri, 3 = Yafaa, 4 = Mbaya):

- (a) Tabia za wafanyakazi _____
- (b) Upatikanaji wa madawa _____
- (c) Upatikanaji wa malazi _____
- (d) Hali ya chakula _____
- (e) Kutegemeeka kwa upatikanaji wa chakula _____

- (f) Utoshelezi/ukamilifu wa matokeo ya uchunguzi
- (g) Usafi wa wodi, malazi, bafu, vyoo n.k. _____
- (h) Uwekaji siri/usiri _____

32. Ni mambo gani matatu muhimu zaidi ungependa kuona yamefanywa kuwa bora katika kituo hiki?

0. Sijui
1. Upatikanaji wa madawa
2. Tabia ya wafanyakazi
3. Ujuzi wa wafanyakazi
4. Kuwako kwa daktari
5. Muda wa kungojea
6. Ratiba/saa
7. Kuwako kwa wafanyakazi
8. Kuondolewa mbali tatizo la wagonjwa kulala pamoja (msongamano uliokithiri)
9. Kutolewa kwa huduma za thieta
10. Mavazi ya kulalia/yunifomu
11. Mablanketi
12. Hali ya chakula/lishe
13. Saa za kutolewa kwa chakula/kiasi cha chakula
14. Usiri
15. Usafi
16. Sikitu
17. Matibabu maalumu sana
18. Gwero
19. Vifaa maabarani

33. Kuna mambo gani matatu bora zaidi katika kituo hiki?

0. Sijui
1. Upatikanaji wa madawa
2. Tabia za wafanyakazi
3. Aina ya wafanyakazi
4. Kuwako kwa daktari
5. Muda wa kungojea
6. Ratuba/saa
7. Kuwako kwa wafanyakazi
8. Idadi ya vitanda
9. Huduma za thieta
10. Si kitu
11. Chakula
12. Vifaa vya matibabu/uchunguzi
13. Usafi

34. Ulishauriwa kuja katika hospitali/kituo hiki?

0. La (NENDA SWALI 35)

1. Ndiyo

34a. Ikiwa jawabu la swali 34 ni 1 (Ndiyo) basi uliza maswali 34a. na 34b:

1. Ulishaauriwa kutoka wapi _____
2. Hospitali (ya serikali) _____
3. Kituo cha afya _____
4. Hospitali ndogo ya uuguzi _____
5. Dispensari/zahanati _____
6. Kituo cha uzazi _____
7. Kiliniki ya madaktari wa kibinafsi/
kujitegemea _____
8. Pengineyo _____

- 34b Kwa nini ulishauriwa kuja hapa (sababu kuu tu _____)
1. Kwa upasuzi/huduma ya thieta
 2. Kuonekana/kupimwa na daktari _____
 3. Vitanda vilikuwa vimejaa huko _____
 4. Hakuna idara ya wagonjwa wa kulazwa huko _____
 5. Madawa niliyohitaji hayapatikani huko _____
 6. Uchunguzi niliohitaji haupatikani huko _____
 7. Ni mgonjwa sana _____
 8. Jamii yangu ilitaka niletwe hapa _____
 9. Kuendelea na matibabu karibu na nyumbani _____
 10. Matunzo maalumu/ya kitaalamu hapa _____
 11. Hakuna huduma za maabara huko _____
 12. Sababu nyingineyo _____
 13. Mtoto wa kwanza _____
 14. Matatizo (ya kujifungua) kabla _____
 15. Uzalishaji kwa kupumlishwa upepo _____
 16. Mimba ya zaidi ya mtoto mmoja _____
 17. Uchungu kabla ya wakati _____
 18. Mji uliobakia ndani _____

(Mwandishi achukue matcheke ya uchunguzi kwenye chati ya mgonjwa.)

35. Matokeo ya uchunguzi wa kimsingi _____

36. Matokeo ya uchunguzi fuatilizizi _____

37. Ulilazwa lini (siku-mwezi-mwaka)? _____

38. Inawezekana kuwa utatoka lini (siku-mwezi-mwaka)? _____
(999999 = Sijui)

39. Walifanya uchunguzi wowote maabarani ili kugundua ugonjwa wako?

- 0. La (NENDA SWALI 41)
- 1. Hakukuwa na haja (NNENDA SWALI 41)
- 2. Ndiyo
- 9. Sijui

Ikiwa jawabu la swali 39 ni 2 (Ndiyo) au 9 (sijui) basi mwandishi aangalie tena chati kukamilisha swali 39a.

39a. Aina gani za uchunguzi maabarani? (0 = la, 1 = ndiyo)

- a. Mkojo _____
- b. Damu _____
- c. Uteute _____
- d. Mpako (smia) _____
- e. Vinginevyo _____

40. Walifanya eksirei zo zote? _____

- 0. La
- 1. Ndiyo
- 2. Hakuwa na haja
- 9. Sijui

41. Umepasuliwa mara ngapi wakati wote wa kukaa kwako hapa? _____
42. Ulikuwa mgonjwa kiasi gani ulipokuja katika kituo cha afya?
1. Mgonjwa sana
 2. Mgonjwa
 3. Si mgonjwa sana
43. (Anayehoji akadirie hali ya mgonjwa sasa) _____
1. Mgonjwa sana
 2. Mgonjwa
 3. Si mgonjwa sana
44. Umehudhuria mara ngapi vituo vya afya vifuatavyo katika mwezi mmoja uliopita?

	Mahudhurio	Kiasi kilicholipwa kwa kila hudhurio
(a) Hospitali ya kibinafsi	<input type="checkbox"/>	<input type="checkbox"/>
(b) Kliniki kibinafsi	<input type="checkbox"/>	<input type="checkbox"/>
(c) Hospitali ya misheni	<input type="checkbox"/>	<input type="checkbox"/>
(d) Zahanati/dispensari misheni	<input type="checkbox"/>	<input type="checkbox"/>
(e) Hospitali ya serikali	<input type="checkbox"/>	<input type="checkbox"/>
(f) Kituo cha Afya (wizara ya Afya)	<input type="checkbox"/>	<input type="checkbox"/>
(g) Dispensari/Zahanati ya wizara ya Afya	<input type="checkbox"/>	<input type="checkbox"/>
(h) Kwingineko	<input type="checkbox"/>	<input type="checkbox"/>

ENDFLEA NA MASWALI KWA WAJAWAZITO WALIOLAZWA TU

LA SIVYO ACHANA NA MAHOJIANO SASA NA SEMA "ASANTENI"

(KWA WAJAWAZITO WALIOLAZWA TU)

45. Ulienda kliniki ya utunzaji wa mimba kwa mimba hii? _____

0. La (NENDA SWALI 47)

1. Ndiyo

Ikiwa jawabu la swali 56 ni 1 (Ndiyo) basi uliza maswali 45a na 45b:

45a. Ulienda kituo gani kwa utunzaji wa mimba? _____

1. Kituo cha afya cha manispaa ya Nakuru
2. Kliniki/hospitali ya kibinafsi
3. Kituo cha afya cha misheni
4. Hospitali ya serikali
5. Kituo cha uzazi cha manispaa ya Nakuru
6. Vituo vya afya (MOH)
7. Zahanati/dispensari
8. Kituo cha shirika la serikali

45b. Ulienda mara ngapi kweny kituo hiki kabla ya ujifungua? _____

46. Ni mimba ya ngapi hii (kwanza, pili, ___? ___)

47. (Kwa kila mimba tangulizi uliza) Ulijifungulia wapi mtoto wako wa :-

(99 = Ikiwa kiasi kilicholipwa hakijulikani)

Rejaleo la kituo	Kiasi kilicholipwa
------------------	--------------------

(a) Kwanza	<input type="text"/>	<input type="text"/>
(b) Pili	<input type="text"/>	<input type="text"/>
(c) Tatu	<input type="text"/>	<input type="text"/>
(d) Nne	<input type="text"/>	<input type="text"/>
(e) Tano	<input type="text"/>	<input type="text"/>
(f) Sita	<input type="text"/>	<input type="text"/>
(g) Saba	<input type="text"/>	<input type="text"/>
(h) Nane	<input type="text"/>	<input type="text"/>

Marejeleo ya vituo :

1	=	Hospitali
2	=	Kituo cha uzazi
3	=	Hospitali ndogo ya unguzi
4	=	Kituo cha Afya
5	=	Dispensari:/zahanati
6	=	Nyumbani (kwa msaada wa mzalishaji/mkunga jadi
7	=	Katika basi/matatu/gari
8	=	Njiani kwenda hospitali
9	=	Penginepo

48. Kuna uzazi wo wote uliokutatiza? _____

0. La (NENDA SWALI 50)

1. Ndiyo

Ikiwa jawabu la swali 48 ni 1 (Ndiyo) basi uliza swal: 48a:

48a. Matatizo ya aina gani? (0 = la, 1 = ndiyo)

(a) Kupasuliwa _____

(b) Kulikuwa na lazima ya kutumia vifaa _____

(c) Kupumuzwa _____

(d) Mtoto kukaa vibaya _____

(e) Mimba ya zaidi ya mtoto mmoja _____

(f) Mtoto wa kufa (kuavya) _____

(g) Mji kubakia ndani _____

(h) Kutokwa na damu nyingi baada ya kuzaa _____

(i) Presha ya juu ya damu/presha kuu _____

(j) Tatizo jingine _____

49. Kwa nini hasa ulikuja kujifungulia hapa?

1. Ni karibu na nyumbani _____

2. Matunzo mazuri _____

3. Nilishauriwa kuja hapa na mfanyakazi wa hospitali _____

4. Nilijifungulia hapa watoto wengine _____

5. Si ghali _____

6. Marafiki/jamaa zangu wanafanya kazi hapa? _____

7. Kuna daktari hapa _____

8. Nitalipiwa gharama zangu hapa _____
9. Sikupanga/nililetwa sina fahamu _____
10. Sababu nyingineyo (Eleza) _____
50. Ungesemaje juu ya huduma za uzalishaji hapa? _____
1. Nzuri sana
2. Nzuri
3. Zafaa
4. Mbaya
51. Unajua ada inayolipishwa hapa? _____
0. La (ACHANA NA MAHOJIANO SASA)
1. Ndiyo

Ikiwa jawabu la swali 51 ni 1 (ndiyo) basi uliza swali 51a:-

51a. Ni kiasi gani? _____

APPENDIX: PADS Outpatient Client Questionnaire

PADS OUTPATIENT CLIENT QUESTIONNAIRE

29. Are you willing to pay per visit at this facility to ensure that the services are improved? _____

0. No (GO TO QUESTION 30)

1. Yes

If answer to question 29 is 1 (yes) then ask questions 29a and 29b and 29c:

29a. Would you pay (0=no, 1=yes):

a) Ksh 10.00 per visit _____

b) Ksh 20.00 per visit _____

c) Ksh 30.00 per visit _____

29b. What is the maximum fee you would be willing to pay per visit? (Kshs) _____

29c. In addition to these payments, would you pay the following amounts for drugs (0=no, 1=yes):

a) Ksh 10.00 per visit _____

b) Ksh 20.00 per visit _____

c) Ksh 30.00 per visit _____

30. What is the main purpose of this visit? _____

[DO NOT READ]

1. Seek treatment for illness (GO TO QUESTION 31 AND 32)

(IF RESPONSE IS 2 THROUGH 10 SKIP TO QUESTION 32)

2. Dental clinic

5. Other specialist clinic: _____

8. Post-natal care

3. Eye clinic

6. Child health visit

9. Family planning

4. ENT clinic

7. Ante-natal care

10. Other: _____

31. What is the main illness/problem you [or your child] are suffering from or the medical reason for your

visit today? _____

1. Malaria

4. Fever

8. Female problem

2. Respiratory infection
(cough, pneumonia)

5. Joint pain/body aches

9. Other: _____

3. Diarrhoea

6. Eye problem

99. Don't know

7. Ear problem

32. How severe do you think your illness/problem is? _____

1. Severe

2. Not severe

9. Don't know

IF THE ANSWER TO QUESTION 30 IS 1,2,3,4 OR 5

THEN GO TO PART II (question 33, page 6)

IF THE ANSWER TO QUESTION 30 IS 6

THEN GO TO PART III (question 35, page 7)

IF THE ANSWER TO QUESTION 30 IS 7

THEN GO TO PART IV (question 37, page 8)

IF THE ANSWER TO QUESTION 30 IS 8 OR 9

THEN GO TO PART V (question 42, page 9)

PADS OUTPATIENT CLIENT QUESTIONNAIRE

PART II: CURATIVE SERVICES OUTPATIENT CLIENT QUESTIONNAIRE

33. Were you charged for services received at this facility today? _____

0. No (GO TO QUESTION 34)

1. Yes

If answer to question 33 is 1 (yes) then ask questions 33a to 33c:

33a. How much did you pay for: (9999=don't know)

a) Consultation _____	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
b) Drugs _____	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
c) Laboratory test _____	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
d) X-ray _____	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
e) Other: _____	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
f) Total _____	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

33b. Are you willing to pay more per visit at this facility to ensure that the services are improved? _____

0. No 1. Yes 9. Don't know

33c. Will health insurance or employer health coverage pay for this visit? _____

0. No 1. Yes \ 9. Don't know

IF THIS IS A GOVERNMENT (NON-PAYING) FACILITY THEN ASK QUESTION 34 BELOW OTHERWISE STOP INTERVIEW NOW AND SAY "THANK YOU."

34. Do you ever go to a facility where you have to pay for service? _____

0. No

1. Yes

If answer to question 34 is 0 (no) then ask question 34a:

34a. Why not? _____

1. Too expensive 3. Not seriously sick 9. Don't know
2. Too far 4. Other: _____

STOP THE INTERVIEW NOW; SAY THANK YOU.

If answer to question 34 is 1 (yes) then ask questions 34b-34d:

34b. How often do you visit a facility where you have to pay? _____

1. Only in an emergency 3. Most of the time 9. Don't know
2. Rarely 4. Other: _____

34c. For what service did you go to a paying facility last time? _____

1. Consultation for illness 4. Drugs 7. Immunizations
2. Maternity services 5. Family planning 8. Other: _____
3. Laboratory/x-ray 6. Ante-natal care 9. Don't know

34d. How much did you pay? _____

STOP THE INTERVIEW NOW; SAY THANK YOU FOR YOUR COOPERATION.

PADS OUTPATIENT CLIENT QUESTIONNAIRE

PART III: CHILD HEALTH CLINIC CLIENT QUESTIONNAIRE

Ask mother or other caretaker with child if mother is not present

35. What is the most important service of this child health clinic to you? _____
1. Immunizations 3. Growth monitoring 5. Other: _____
2. Health education 4. Individual consultation

36. Do you pay anything for this service? _____
0. No
1. Yes
9. don't know [STOP THE INTERVIEW NOW]

If answer to question 36 is 0 (no) then ask question 36a:

36a. Are you willing to pay a small fee at this clinic to ensure that the services are improved? _____
0. No 1. Yes 9. Don't know

If answer to question 36 is 1 (yes) then ask questions 36b and 36c:

36b. How much do you usually pay per visit? _____
36c. Will health insurance or employer health coverage pay for this visit? _____
0. No 1. Yes 9. Don't know

**THANK YOU FOR YOUR COOPERATION
[STOP THE INTERVIEW HERE]**

APPENDIX: PADS Outpatient Client Questionnaire
Swahili Version

APPENDIX: PADS Outpatient Client Questionnaire
Swahili Version

SEHEMU I : KWA WAGONJWA WOTE WA NJE

0. Nambari ya kitambulishi cha mhojiwa _____

1. Unaishi wapi? _____

1. Ndani ya wilaya 2. Nje ya wilaya

2. Ulitumia usafiri wa aina gani kuja katika kituo hiki leo? _____

- 1. Miguu
- 2. Baiskeli
- 3. Basi/matatu
- 4. Teksi/Gari ya kukodisha
- 5. Gari yangu/gari ya kibinafsi
- 6. Gari ya mwajiri
- 7. Usafiri mwingineo _____

Ikiwa jibu la swali 2 ni 3 (basi) au 4 (teksti), basi uliza swali 2a.

2a. Ulilipa kiasi gani kwa usafiri kufika hapa kituoni leo? (Ksh.)

3. Ilikuchukua muda gani kufika hapa (kwa dakika)? _____

4. Ulisafiri kilomita ngapi kufika hapa? _____

5. Ulikuwa hapa leo kutoka _____

1. Nyumbani (Uliza swali 6)
2. Kazini (Uliza swali 7)
3. Mahali penginepo (Nenda swali 8)

6. Kuna kituo kingine cha afya cha karibu zaidi na NYUMBANI kwenu kuliko hiki? _____

0. La (Nenda swali 8)
1. Mdiyo
2. Sijui (Nenda Swali 3)

Ikiwa jawabu la swali la 6 ni 1 (ndio), basi uliza swali la 6

6a. Ni sababu gani muhimu iliyokufanya usiende kituo hicho kilicho karibu nawe zaidi hivi leo? (usisome) _____

1. Nilishauriwa nije hapa
2. Ni lazima kulipa huko
3. Hakuna madawa huko
4. Hakuna daktari huko
5. Huduma si nzuri huko
6. Mwajiri wangu halipi huko
7. Shirika la bima halilipi huko
8. Sipati wasaa mzuri wa kwenda huko
9. Huduma hazipatikani huko
10. Hakuna cho chote kizuri huko
11. Sijui.

7. Kuna kituo kingine cha afya karibu zaidi na KAZINI kwako kuliko hiki? _____

- 0. La (Nenda swali 8)
- 1. Ndiyo
- 2. Sijui (Nenda swali 8)

kiwa jawabu la swali la 7 ni 1 (ndiyo), basi uliza swali la 17a:

7a. Ni sababu gani muhimu iliyokufanya usiende kwenye kituo hicho cha karibu zaidi hivi leo?
(Usisome) _____

- | | |
|--------------------------------------|----------------------------|
| 1. Nilishauriwa nje hapa | 9. Huduma azipatikani huko |
| 2. Ni lazima kulipa huko | 10. Sababu yingineyo..... |
| 3. Hakuna madawa huko | 11. Sijui |
| 4. Hakuna daktari huko | |
| 5. Huduma si nzuri huko | |
| 6. Mwijiri wangu halipi huko | |
| 7. Shirika la Bima halilipi huko | |
| 8. Sipati wasaa mzuri wa kwenda huko | |

8. Uzawa wa mhojiwa (kwa kumtazama tu) _____

- 0. Mke
- 1. Mume

9. Una umri gani?
(kwa watu waliofikisha miaka 5 au zaidi, taja miaka) _____

(kwa watoto ambao hawajafikisha miaka 5, taja miezi)

10. Umeoa/umeolewa? _____

1. Nimeoa/Nimeolewa	4. Nimetalikiwa
2. La	5. Tumetengana
3. Nimetaliki	6. Vinginevyo

11. Nyumbani kwenu kunaishi watu wangapi? _____

12. Wewe ndiye mkuu wa nyumba yako? _____

- 0. La
- 1. Ndiyo (NENDA SWALI 13)

→ Ikiwa jawabu la swali 12 ni 0 (La) basi uliza swali la 12a na 12b.

12a. Ni kazi gani kubwa inayofanywa na mkuu wa nyumba yenu?
(Usisome) _____

- 1. Mke nyumbani
- 2. Hana kazi
- 3. Ukulima
- 4. Kazi ya kuajiriwa
- 5. Amejiajiri (yaani biashara)
- 6. Kibarua
- 7. Mwanafunzi
- 8. Kazi nyingineyo

12b. Mkuu wa nyumbani yenu alisoma kwa miaka migapi?
(1 = Sijui) _____

13. Ni kazi gani kubwa hasa unayofanya?
(Usisome) _____

- 1. Mke nyumbani
- 2. Sina kazi/sijaaajiriwa
- 3. Ukulima
- 4. Kazi ya kuajiriwa
- 5. Nimejiajiri (yaani biashara)
- 6. Kibarua
- 7. Mwanafunzi
- 8. Kazi nyingineyo.....

14. Ulisoma kwa miaka mingapi?
(1 = Sijui) _____

15. Dini yako ni ipi? _____

- 1. Katoliki
- 2. Uprotestant
- 3. Uislama
- 4. Nyingineyo _____

16. Nyumbani kwenu hupata kiasi gani cha pesa kila mwezi kutokana na shughuli zifuatazo (Kshs.)?
(99999 = Sijui) _____
- (a) Mume/Mapato ya kujiajiri au mshahara
(b) Mke/mapato ya kujiajiri au mshahara
(c) Mapato kutoka kwa watoto
(d) Mapato kutokana na watu wa ukoo, marafiki, wengineo
(e) Biashara (duka, kioski, hoteli, matatu, n.k.)
(f) Kodi ya nyumba
(g) Malipo ya uzeeni/pensheni, faida _____
17. Umekuja mara ngapi katika kituo hiki mnamo mwezi mmoja uliopita (pamoja na leo)? _____
18. Ni mara ngapi umekwenda katika vituo vingine mnamo mwezi mmoja uliopita? _____
19. Umekuwa hapa kwa muda gani leo? (dakika) _____
20. Wafanyakazi wamekuhudumia vizuri? _____
21. Unafikiria wafanyakazi wamehitimu katika kazi yao? _____
0. La 1. Ndiyo 9. Sijui
22. Unatosheka na huduma zinazotolewa hapa? _____
0. La 1. Ndiyo 9. Sijui

23. Unazionaje huduma zinazotolewa kwenye kituo hiki/ kliniki hii? _____

1. Nzuri
2. Zafaa
3. Mbaya
4. (Sijui (NENDA SWALI 24)

Ikiwa jawabu la swali 23 ni 1 (nzuri) basi uliza swali 23a:-

23a. Kwa nini unazona kuwa nzuri? _____

1. Wafanyakazi wana heshima
2. Madawa yanapatikana
3. Wafanyakazi wamehitimu kwa kazi
4. Dakktari yupo/anapatikana
5. Muda mfupi wa kungojea
6. Sababu nyingineyo _____

(NENDA SWALI 24)

Ikiwa jawabu la swali 23 ni 2(zafaa) basi uliza swali 23b:-

23b. Kuna tatizo gani kubwa katika kituo hiki? _____

1. Wafanyakazi hawana heshima
2. Hakuna madawa
3. Wafanyakazi si wajuzi
4. Hakuna daktari
5. Muda wa kungojea ni mrefu mno
6. Pachafu
7. Tatizo jingine.....

24. Ni jambo gani muhimu ungependa kuona limefanywa kuwa bora katika kituo hiki? _____

1. Upatikanaji wa madawa
2. Tabia za wafanyakazi
3. Kuwako kwa daktari
4. Kupunguzwa kwa wakati wa kungojea
5. Ratiba/saa
6. Kuwako kwa wafanyakazi
7. Usafi
8. Jambo jingine.....
9. Sijui

25. Ulishauriwa uje katika kituo hiki? _____

0. La (NENDA SWALI 26)

1. Ndiyo

Ikiwa jawabu la swali 25 ni 1 (Ndiyo) basi uliza swali 25a na 25b:-

25a. Ulishauriwa kutoka wapi? _____

1. Hospitali
2. Kituo cha Afya.
3. Hospitali ndogo ya uunguzi
4. Zahanati/dispensari
5. Kliniki ya uzazi
6. Kliniki ya daktari wa kibinafsi
7. Penginepo _____

25b. Kwa nini ukashauriwa kuja katika kituo hiki? _____

1. Kwa upasuaji/huduma katika thieta
2. Kuonekana/kupimwa na daktari
3. Vitanda vilikuwa vimejaa wagonjwa huko
4. Hakulazwi wagonjwa huko
5. Madawa niliyohitaji hayako huko
6. Ni mgojwa sana
7. Jamaa zangu walihitaji kuwa niletwe huko
8. Kuendelea na matibabu karibu na nyumbani
9. Matunzo ya kitaalamu/maalumu hapa
10. Hakuna huduma za maabara huko
11. Sababu nyngineyo.....

26. Ulishauriwa kwenda kwingineko leo? _____

0. La (NENDA SWALI LA 31)

1. Ndiyo

Ikiwa jawabu la swali 26 ni 1 (Ndiyo) basi uliza swali 26a na 26b:-

26a. Urishauriwa kwenda wapi? _____

1. Hospitali
2. Kituo cha afya
3. Hospitali ndogo ya uuguzi
4. Zahanati/dispensari
5. Kliniki ya uzazi
6. Kliniki ya madaktari wa kibinafsi
7. Kwingineko

26b. Kwa nini ulishauriwa kwenda kwingine? _____
(andika 1 kila panapofaa)

- (a) Kupata ushauri
- (b) Eksirei
- (c) Madawa
- (d) Uchunguzi katika maabara
- (e) Majeruhi
- (f) Sababu nyingineyo.....

27. Wewe au mkuu wa nyumba yenu ana bima ya matibabu na/au huduma ya afya kutoka kwa mwajiri _____

0. La

1. Ndiyo

9. Sijui

28. Wewe au mkuu wa nyumba yenu mna kadi inayotumika ya NHIF? _____

0. La

1. Ndiyo

9. Sijui

29. Ungekubali kulipa kila unapokuja kwenye kituo hiki kuhakikisha kwamba huduma zinafanywa kuwa bora? _____

0. La (NENDA SWALI 30)

1. Ndiyo

Ikiwa jawabu la swali 29 ni 1 (Ndiyo) basi uliza swali 29a, 29b na 29c:-

29a. Ungelipa (0 = La, 1 = Ndiyo) _____

- (a) Kshs. 10.00 kila unapokuja
- (b) Kshs. 20.00 kila unapokuja
- (c) Kshs. 30.00 kila unapokuja

29b. Ni kiasi gani cha juu zaidi ungekuwa tayari kulipa kila unapokuja _____

29c. Juu ya malipo haya, ungekuwa tayari kulipa kiasi kifuatacho kwa madawa? (0 = La, 1 = Ndiyo) _____

- (a) Kshs. 10.00 kila unapokuja
- (b) Kshs. 20.00 kila unapokuja
- (c) Kshs. 30.00 kila unapokuja

30. Ni sababu gani hasa iliyokuleta hapa? _____

(USISOME)

1. Kutafuta dawa kwa ugonjwa (NENDA SWALI 31 NA 32)
(IKIWA JAWABU NI 2 KUFIKIA 10 RUKA MPAKA SWALI 32)
2. Kliniki ya meno
3. Kliniki ya macho
4. Kliniki ya ENT
5. Kliniki nyingine maalumu
6. Kwa afya ya mtoto
7. Utunzaji wa mimba
8. Utunzaji wa baada ya kujifungua
9. Mpango wa uzazi
10. Sababu nyingineyo _____

IKIWA JAWABU LA SWALI 30 NI 1, 2, 3, 4 AU 5, BASI NENDA SEHEMU II (Swali 33, Ukurasa)

IKIWA JAWABU LA SWALI 30 NI 6 BASI NENDA SEHEMU III
(Swali 35 Ukurasa)

IKIWA JAWABU LA SWALI 30 NI 7 BASI NENDA SEHEMU IV
(Swali 37, Ukurasa)

IKIWA JAWABU LA SWALI 30 NI 8 AU 9 BASI NENDA
SEHEMU V (Swali 42, Ukurasa)

31. Ni ugonjwa/tatizo gani kubwa linalokusumbua wewe (au mtoto wako) au ni sababu gani ya kimatibabu iliyokuleta leo? _____

1. Malaria
2. Maambukizi ya mapumilio (mafua, numonia)
3. Kuhara/kuendesha
4. Homa
5. Maumivu ya viungo/mwili
6. Tatizo la jicho
7. Tatizo la kike
8. Tatizo jingine _____
9. Sijui

32. Ungojwa/tatizo lako limefikia hatua mbaya namna gani? _____

1. Sana
2. Siyo sana
3. Sijui

SEHEMU II: MASWALI YA WATEJA KWA HUDUMA ZA MATIBABU YA WAGONJWA WA NJE

33. Ulilipishwa kwa huduma zinazopatika katika kituo hiki hivi leo? _____

0. La (NENDA SWALI 34)

1. Ndiyo

Ikiwa jawabu la swali 33 ni 1 (Ndiyo) basi uliza maswali 33a hadi 33c :-

33a. Ulilipa kiasi gani kwa : (999 = Sijui)

(a) Ushauri _____

(b) Madawa _____

(c) Uchunguzi katika maabara _____

(d) Eksirei _____

(e) Huduma nyingineyo _____

(f) Jumla _____

33b. Ungekubali kulipa zaidi kila kunapokuja katika kituo hiki kuhakikisha kwamba huduma zinafanywa kuwa bora? _____

0. La 1. Ndiyo 9. Sijui

33c. Je, bima ya afya au malipo ya mwajiri kwa huduma ya afya yatagharamia kuja kwako hapa leo? _____

1. La 1. Ndiyo 9. Sijui

IKIWA HIKI NI KITUO CHA SERIKALI (KISICHOLUPIWA) BASI ULIZA SWALI 34 LINALOFUATIA LA SIVYO MALIZA MAHOJIANO SASA NA USEME "ASANTENI"

34. Kuna wakati wo wote ambayo wewe huenda kwenye kituo cha afya ambayo ni lazima ulipie huduma _____

- 0. La
- 1. Ndiyo

Ikiwa jawabu la swali 34 ni 0 (La) basi uliza swali 34a:-

34a. Kwa nini huendi _____

- 1. Ni ghali mno
- 2. Ni mbali mno
- 3. Sio mgonjwa sana
- 4. Sababu nyingineyo _____
- 9. Sijui

ACHANA NA MAHOJIANO SASA; SEMA "ASANTE"

Ikiwa jawabu la swali 34 ni 1 (Ndiyo) basi uliza maswali 34b - 34d:-

34b. Je ni mara ngapi wewe huenda kwenye kituo ambapo ni lazima ulipe? _____

- 1. Wakati wa dharura tu
- 2. Nadra
- 3. Mara nyingi
- 4. Vinginevyo _____
- 9. Sijui

34c. Ni huduma gani uliyoendea katika kituo cha malipo mara ya mwisho? _____

- 1. Ushauri kwa ugonjwa
- 2. Huduma ya ujauzito
- 3. Maabara/Eksirei
- 4. Madawa
- 5. Mpango wa uzazi
- 6. Utunzaji wa mimba
- 7. Kinga
- 8. Huduma nyingineyo _____
- 9. Sijui

34d. Ulilipa kiasi gani _____

ACHANA NA MAHOJIANO SASA: SEMA "ASANTENI" KWA
KUSHIRIKIANA NAMI".

SEHEMU III: MASWALI KWA WATEJA WA KLINIKI YA AFYA YA WATOTO

35. Ni huduma gani ambayo ni muhimu zaidi kwako katika kliniki hii
ya watoto? _____

1. Kinga
2. Elimu ya afya
3. Uchunguzi wa ukuaji
4. Ushauri wa kibinafsi
5. Huduma nyingineyo.....

36. Hulipa cho chote kwa huduma hii? _____

0. La
1. Ndiyo
9. Sijui (ACHANA NA MAHOJIANO SASA)

Ikiwa jawabu la swali 36 ni 0 (La) basi uliza
swali 36a:-

36a. Ungekubali kulipa ada kidogo katika kliniki hii
kuhakikisha kwamba huduma sinafanywa kuwa
bora? _____

0. La 1. Ndiyo 9. Sijui

Ikiwa jawabu la swali 36 in 1 (Ndiyo) basi uliza
maswali 36b na 36c:-

36b. Kwa kawaida huwa unalipa kiasi gani kila
unapokuja? _____

36c. Je, bima ya afya au malipo ya mwajiri kwa
huduma ya afya yatagharamia kuja kwako
hapa leo? _____

1. La 1. Ndiyo 9. Sijui

ASANTENI KWA KUSHIRIKIANA NAMI (ACHANA NA MAHOJIANO HAPA)

SEHEMU IV: MASWALI KWA WATEJA KLINIKI YA WAJAWAZITO

37. Hulipa cho chote kwa huduma hii _____

- 0. La
- 1. Ndiyo
- 9. Sijui (NENDA SWALI 38)

Ikiwa jawabu la swali 37 ni 0 (La) basi uliza swali 37a:-

37a. Ungekubali kulipa ada kidogo katika kliniki hii kuhakikisha kwamba huduma sinafanywa kuwa bora? _____

- 0. La
- 1. Ndiyo
- 9. Sijui

Ikiwa jawabu la swali 37 ni 1 (Ndiyo) basi uliza swali 37b na 37c:-

37b. Kwa kawaida huwa unalipa kiasi gani kila unapokuja? _____

37c. Je, bima ya afya au malipo ya mwajiri kwa huduma ya afya yatagharamia kuja kwako hapa leo? _____

- 0. La
- 1. Ndiyo
- 9. Sijui

38. Umepanga kujifungulia wapi? _____

- 1. Katika kituo hiki
- 2. Nyumbani
- 3. Katika hospitali ndogo ya uuguzi
- 4. Katika hospitali ya kibinafsi
- 5. Hospitali kuu ya Kenyatta
- 6. Mahali pengineopo.....

(IKIWA JAWABU LA SWALI 38 SI 2 (NYUMBANI) BASI ULIZA SWALI 40).

39. Kwa nini umepanga kujifungulia huko _____

1. Utunzaji mzuri zaidi
2. Ni karibu na nyumbani
3. Si ghali sana
4. Nilijifungulia huko mara ya mwisho
5. Daktari anapatikana
6. Gharama zangu hulipiwa huko
7. Nilishauriwa na muuguzi niende huko
8. Kuna mzalishaji/mkunga
9. Haikupangwa/haitarajiwi
10. sababu nyingineyo _____

40. Kituo unaponuia kujifungulia ndicho kilicho karibu zaidi na nyumbani kwenu? _____

0. La
1. Ndiyo (nenda swali la 41)
9. Sijui (nenda swali la 41)

Ikiwa jawabu la swali la 41 ni 0 (la) basi uliza swali la 40a:-

40a. Ni sababu gani muhimu sana inayokufanya usiende kituo kilicho karibu nawe zaidi? _____

1. Matunzo mabaya
2. Ghali mno
3. Hakuna madawa
4. Hakuna daktari
5. Kuna msongamano mkubwa
6. Nilishauriwa kwenda mahali pengine
7. Silipiwi gharama hapo
8. Sababu nyingine.....

41. Umezaa watoto wengine _____

0. La
1. Ndiyo

Ikiwa jawabu la swali 41 ni 1 (Ndiyo) basi uliza swali 41a:-

41a. Ni wapi ulipojifungulia watoto wengine? _____

(andika 1 kila ambapo jawabu ni "Ndiyo",
La sivyo andika 0)

(a) Hospitali _____

(b) Kituo cha uzazi _____

(c) Hospitali ndogo ya uuguzi _____

(d) Dispensari/zahanati _____

(e) Nyumbani kwa usaidizi wa mkunga/
mzalishaji wa jadi/kienyeji _____

(f) Hospitali nyingine _____

(g) Penginepo _____

" ASANTENI KWA KUSHIRIKIANA NAMI" (ACHANA NA MAHOJIANO HAPA)

SEHEMU V: MASWALI KWA WATEJA WA HUDUMA ZA UPANGAJI UZAZI

42. Wewe hulipa cho chote kwa huduma hii _____

- 0. La
- 1. Ndiyo
- 9. Sijui (NENDA SWALI 43)

Ikiwa jawabu la swali 42 ni 0 (La) basi uliza swali 42a:-

42a. Ungekubali kulipa ada kidogo katika kliniki hii kuhakikisha kwamba huduma zinafanywa kuwa bora? _____

0. La 1. Ndiyo 9. Sijui

Ikiwa jawabu la swali 42 ni 1 (Ndiyo) basi uliza maswali 42b na 42c:-

42b. Kwa kawaida huwa unalipa kiasi gani kila unapokuja _____

42c. Je, bima ya afya au malipo ya huduma ya afya ya mwajiri yatagharamia kuja kwako hapa leo? _____

0. La 1. Ndiyo 9. Sijui

43. Umeenda mahali pengine po pote kwa huduma za mpango wa uzazi? _____

0. La

1. Ndiyo

Ikiwa jawabu la swali la 43 ni 1 (Ndiyo basi uliza swali la 43a:-

43a. Ni sababu gani hasa iliyokufanya uamue kuja katika kliniki hii? _____

1. Wafanyakazi bora
2. Pana daktari bora
3. Pana vizuia mimba
4. Ni karibu na nyumbani
5. Si ghali sana
6. Wakati unaonifaa zaidi
7. Sababu nyingineyo.....

"ASANTE KWA KUSHIRIKIANA NAMI"

APPENDIX: Guidelines for Marginal Analysis in Outpatient Care

APPENDIX: Guidelines for Marginal Analysis in Outpatient Care

The approach of marginal analysis involves attempting to identify certain client groups ("marginal groups") being treated at some particular level of care (say "facility A") who might be treated just as well but at lower cost as another (lower) level of care (say "facility B"); similarly for "facility B" versus "facility C"; and so on. To apply the approach requires the identification of these marginal groups and an estimate of the associated costs of treatment both where they are actually being treated as well as what the costs would be if they were treated at another level of care.

This section presents guidelines on how this kind of analysis is to be done in practice.

Briefly, the analysis involves the following steps:

- A. Identifying the marginal groups (that is, the categories of patients who can be treated elsewhere because of simple health problems and availability of alternate facilities)
- B. Estimating the costs of treating the marginal groups
- C. Investigating the alternatives
- D. Estimating the proportion of patients who could be treated elsewhere (Conduct sensitivity analysis)
- E. Analysing the costs of providing the additional services at the alternate facilities
- F. Analysing the costs and savings/benefits
 - for the facilities which would be "exporting" marginal patients to alternative health care services
 - for the health care services which would be "importing" marginal patients
 - for the patients (user fee, waiting time, travel)
- G. Reporting the findings
- H. Making recommendations for monitoring the new position and conducting future analyses

The general model of the marginal analysis of outpatient care within a region starts by identifying the marginal clients: those who could be treated at a lower level of health care without any loss in health status. Starting with the hospital, the process of identifying

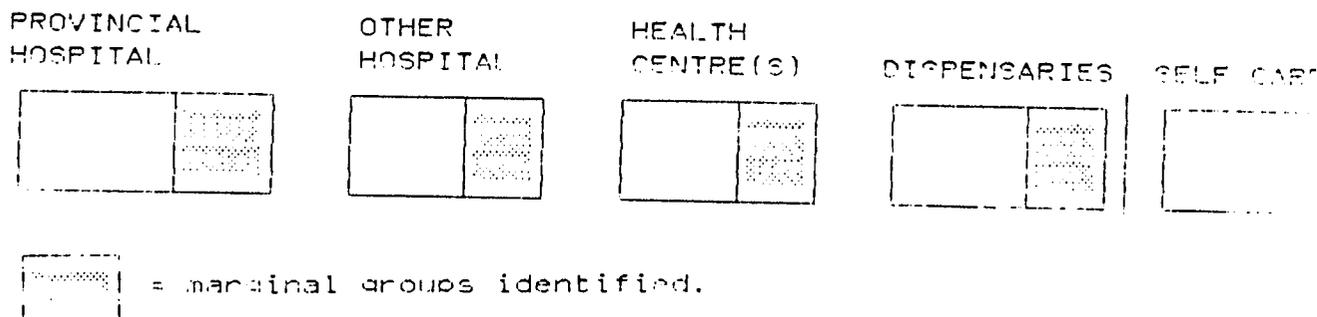
the marginal clients involves consideration of lower level facilities within the chain of MOH health care services: from the provincial hospital to the district hospital; from the district hospital to the health centres; from the health centres to the dispensaries; and in principle from the dispensaries to self-care - the last being outside the scope of this model.

An ideal model would also include the identification of the marginal groups who should have been treated at a higher level of health care in order to achieve best use of health care resources. The main reason for excluding this aspect is that we already know the rate of referrals from the different facilities involved in the PADS study.

FIGURE 1

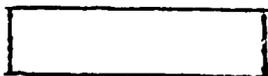
THE MODEL

- Level of care -



A. Identifying the marginal groups (the potential)

1. Collect information on how many patients the hospital Outpatient Department (OPD) treats per year. Take note of how many days a year the OPD operates (perhaps 250 days a year, which is the most common among all government outpatient facilities).



Number of patients (per year/per day)

2. Collect information on the proportion of outpatient clients who are referred and who are not referred to the hospital in question. This information can be obtained from the PADS outpatient client questionnaire (OPQ), questions 6a and 6b, code 1.

NCN-R.	R.	All clients
--------	----	-------------

3. Concentrate first on the clients referred and calculate how many of those who came for drugs, which should normally have been available at a lower level of health care, although it was not available to them.

R.	R.Referred clients
----	--------------------

This information can be obtained from the PADS OPQ, question 29b, code 5.

Multiply this information by 0.66, to allow for the fact that some drugs are only available in the hospital.

4. Concentrate next on the non-referred clients (number or percentage, see 1.) and collect the following information:
 - (i): Those who had another, lower level, health facility closer to home or work, OPQ, question 6, code 1, and question 7, code 1.

Rule out those clients who had no other lower level health facility nearer home or work, assuming that they are from the catchment area.

NON-R. None-referred clients

After this, concentrate on the clients who could have gone to a closer, lower level facility. The information can be obtained from the PADS OPQ, questions 6a and 7a.

Obtain the number or percentage of patients:

- (ii): who came because there were no drugs at the closer facility; questions 6a, 3 and 7a, 3;
- (iii): who came because services were poor at the closer facility; questions 6a, 5 and 7a, 5;
- (iv): who came for other reasons and sort out which of these clients would have come had the service level at the closer facility been higher; questions 6a, 10 and 7a.

We have now identified the marginal group of clients who could be treated at a lower level of health care delivery. The issue is then to concentrate on identifying how many of the clients who were treated at the health centres could be treated at the dispensaries without any loss in health status.

5. For the health centres, identify the number or percentage of clients who have another, lower level health facility closer to home or work; questions 6, 1 and 7, 1.

B. Costing the marginal groups

The purpose of costing the marginal groups of clients is to get an idea of the amount of resources which can be released at the higher level of health care delivery for other health care purposes, for example raising the level of service at health care centres and dispensaries. It is important to appreciate that it is not only the costs for the facility in question which should be obtained but the costs to society at large. In this case, this means the costs falling on the clients: travel costs, travel time and waiting time.

Ideally the costs we would like to ascertain are the marginal costs (MC): the extra costs for treating the marginal clients. The information required is the costs for the services received by "the marginal clients".

The marginal clients are assumed not to draw on support services (such as laboratory services) which should therefore be excluded from the calculation. Further, overhead costs should also be excluded because the buildings, electricity, etc. would be there anyway. The costs which remain to be sorted out per facility are personnel, drugs and dressings.

1. Collect information from the cost data of the recurrent average cost per outpatient visit.
2. Collect information on the marginal cost per marginal client by filling in the table below:

Expenditures	MC
Personnel	- Ksh -
Dressings	
Drugs	
Total	

3. Multiply the figure obtained in (2) by the number of marginal clients per day, and eventually per year.

4. Estimate the time saving, and decrease in travel expenditure for the marginal clients who can be treated at a closer health facility.

C. Investigating the alternatives

Identify, within the region in question which takes into account the level of service provided at the alternative facilities. Start by identifying the alternative facilities and then use the following list for health centres:

- number of doctors available
- number of nurses available
- number of clinical officers available
- availability of drugs and dressing
- special drugs which are available
 - never
 - some of the time
 - most of the time.

Use the following list for dispensaries as a guideline:

- number of nurses available
- number of clinical officers available
- availability of drugs and dressing
- special drugs which are available
 - never
 - some of the time
 - most of the time.

D. Estimating the proportion of patients who can be treated elsewhere

Unless the referrals to the outpatient departments at the hospitals and the health centres become severely restricted by regulation, it is unlikely that all the marginal clients will move to other health facilities. Some will still come because they are used to going there (because the market is there, etc.).

It is therefore recommended that a sensitivity analysis be conducted which takes account of the fact that is possible to "remove" only:

- 50% of the marginal clients
- 75% of the marginal clients
- 90% of the marginal clients.

50% might be the goal in the short run and 90% in the longer run.

E. Analysing the costs involved in raising the level of services provided at the alternative facilities

1. Analyse whether there is existing space capacity in some of the facilities, for example some of the dispensaries. This is best considered in terms of the use of manpower resources. Thus if the personnel costs per curative visit are high, this suggests the possible presence of under utilisation (or space capacity). In such instances, it may be possible to expand services with little or no extra manpower.
2. Estimate the marginal costs involved in increasing the number of clients per day/per year for drugs and dressings.

Calculate the average cost per client for drugs and dressings for curative services at the closer, lower level, health service facilities (the alternatives).

Conduct a sensitivity analysis assuming that 50%, 75% and 90% of the identified marginal clients are reallocated.

F. Analysing the costs and savings/benefits

G. Reporting the findings

APPENDIX: Cost Detail

APPENDIX: Cost Detail

I. NAKURU PROVINCIAL GENERAL HOSPITAL COST DETAIL

Information covering the period of (July 1988 - June 1989) was collected and used to compute various costs of services for the hospital. The table below presents cost summary and which are discussed on the following pages.

TABLE 1:

UNIT COST PER PATIENT DAY/OUTPATIENT VISIT/DISCHARGE
IN KSHS

	ALOS	RECURRENT		DEVELOPMENT		TOTAL DEV/RECURR.	
		COST/ DAY	COST/ ALOS	COST/ DAY	COST/ ALOS	COST/ DAY	COST/ ALOS
OUTPATIENT							
VISITS	62.44	Visit	6.46	Visit	68.90	Visits	
MEDICAL	18.7	151.65	2,335.79	26.83	501.67	178.47	3,337.47
SURGICAL	17.2	121.51	2,033.95	6.91	118.58	128.43	2,202.53
PAEDIATRIC	9.5	98.99	941.37	11.56	109.92	110.55	1,051.29
MATERNITY	7.2	85.08	614.29	5.95	42.98	91.03	657.27
AMMENITY	13.1	609.11	7,979.33	126.70	1,659.75	735.81	9,639.08

Table 1 presents the Unit Cost per in-patient day (for the wards) and cost per visit for the outpatient. The sixteen wards were grouped as follows:

- Maternity
- Paediatric (wards 2, 5 and Isolation)
- Medical (wards 6,7,8,11,12 and 15)
- Surgical (wards 3, 4, 9, 10, 13 and 14)

The Annex facility (amenity) was analysed separately. Cost allocations were based on personnel, drugs and dressings, space and volume of service. Besides the annex where people pay for the services, the paediatric wards have the highest cost per in patient day, followed by surgical maternity and medical wards in that order. The annex has the highest cost per admission followed by surgical wards, medical wards, paediatric wards and maternity.

COST OF EQUIPMENT, BUILDINGS AND MAINTENANCE

The replacement cost per M2 of buildings is Ksh. 12,000 and with a total area of 15,815 M2 the total replacement cost of buildings for

Nakuru is Ksh. 189,780,000. The average life of the buildings is assumed to be 50 years whereas that of equipment is assumed to be 10 years. The annual replacement of buildings and equipment cost are therefore estimated to be Ksh. 3,795,600 and Ksh. 3,163,000, respectively. The annualised cost for equipment per M2 is Ksh. 2000 and for the total space of 15,815 M2 the total cost for equipment is estimated to be Ksh, 31,630,00. Annual maintenance of the buildings and equipment is estimated to be Ksh. 3795,600 and Ksh. 632,600 respectively. The cost of equipment spares is Ksh. 253,040 annually.

Table 2 presents information on patients discharged, and the number of beds, and bed days. This surgery is presented separately and the minor and major cases are shown. Information is provided separately for each ward.

TABLE 2

NAKURU P. HOSP. 1986-89	HOSP. DAYS	PATIENT DISCHARGE	BEDS	SURGERY				
				MINOR	MAJOR	MINOR	MAJOR	
				DISCHARGE	DAYS			
ISOLATION	4,191	335	5	12.51				
2	15,994	1360	12	11.76				
3	12,583	573	26	21.96	57	516	1,258	11,325
4	20,585	2871	39	7.17	2,010	861	14,410	6,176
5	21,737	3581	29	6.07				
6	11,713	610	39	19.21				
7	6,951	199	28	34.93				
8	24,952	956	7	26.1				
9	19,053	338	30	56.37	34	304	1,905	17,148
10	22,738	1065	27	21.35	107	959	2,274	20,464
11	23,944	1567	37	15.28				
12	21,466	1259	39	17.05				
13	19,898	754	36	26.39	75	679	1,990	17,908
14	18,326	955	36	19.19	96	860	1,333	16,494
15	13,564	654	29	20.74				
MATERNITY	39,288	5434	54	7.23	2,378	4,178	23,669	89,514
AMMENITY	5,562	241	18	23.08	MINOR	MAJOR		
AMME MAT	5,261	741	19	7.1	ALOS	ALOS		
					9.95	21.43		

OUTPATIENT					342,476			
TOTAL	302,549	22,752	491					

BED DAYS AVAILABLE		186150						
OCCUPANCY RATE		165.4%						

The time it takes to do a major/minor surgery is shown as well. Over three thousand surgical procedures were performed. The costs for normal delivery and Caesarian Section are shown. The Caesarian section costs more than sixteen times the normal delivery, whereas the major surgery costs more than twice the minor surgery.

TABLE 2 (cont.)

	SURGERY	4,801,368	SURGERY	
			COST/=	Procedures(1987-bad 1988 data)
Major	2,122	2,740,809	1,292	2,122 Major Surgery = 90min
Minor	1,595	2,060,558	431	4,786 Minor Surgery = 30min
Total	3,717			

SURGERY COST MAJOR/MINOR PER SURG DAY						
MAJOR	COST/=	MINOR	COST/=	C-SECT	COST/=	DELIVERY COST/=
LOS COST	1,823	:LOS COST	847	:LOS COST	2,604	:LOS COST 243
THEATRE	1,292	:THEATRE	431	:THEATRE	1,292	:
	3,115	:	1,277	:	3,895	243

Table 3 shows expenditures on each service area on the basis of given units of measurement which are given as days/visits and procedures. The unit costs being considered are personnel, dressing, drugs, overhead maintenance, x-ray, lab, therapy and surgery. The recurrent and development unit costs are then combined to give the total picture.

TABLE 3

SERVICE AREA EXPENDITURES BY UNIT OF MEASUREMENT

	MEASURE- MENT	PERSON- NEL	DRESSING	DRUGS	OVERHEAD	MAIN- TENANCE
Outpatient:	VISITS	28.61	2.36	9.89	9.53	2.59
Paediatric:	DAYS	59.56	3.92	4.23	63.22	13.87
Maternity :	DAYS	79.58	8.00	3.36	25.06	3.51
Medical :	DAYS	37.81	6.31	7.72	32.63	5.57
Surgical :	DAYS	41.23	3.94	21.79	21.79	2.52
Annex :	DAYS	251.25	25.02	10.69	250.22	64.67
Other						
Admin :	DAYS/ VISIT	14.77				
X-ray	:PROCEDURES	65.76				
Lab	:PROCEDURES	40.25				
Therapy	:PROCEDURES	53.31				
Drugs	:DAYS/VISIT	4.05				
Dressing	:DAYS/VISIT	0.76				

TABLE 3 (cont.)

SERVICE AREA	EXPEND BY UNIT OF MEASURE			RECURRENT REPLACEMENT		TOTAL
	XRAY	LAB	THERAPY	SURG MAJOR	COST MINOR	
Outpatient:	4.39	3.46	1.62		62.44	68.90
Paediatric:	0.50	3.45	2.90		151.65	178.47
Maternity :	0.11	1.30	0.00		121.51	128.43
Medical :	0.51	4.93	3.50		98.99	110.55
Surgical :	0.72	2.73	5.23		85.08	91.03
Annex :	0.54	2.78	3.86		609.11	735.81
X-ray	32.20					
Lab		42.43				
Therapy			56.68			
Surgery				1,292	431	

TABLE 4

NAKURU PROVINCIAL HOSPITAL 1988-89 SURGERY SEPARATE ALLOCATION

	OP	PAEDS	MATER.	MED.	SURG.
<u>PERSONNEL</u>					
Direc	9,798,681	2,496,930	3,126,421	3,879,544	4,666,897
Alloc	1,586,914	1,041,542	246,935	1,022,688	531,577
Oper	01,675,646	1,099,779	260,742	1,079,871	561,300
Drugs	3,385,897	177,375	131,927	792,202	445,829
Dress	803,196	164,126	337,914	647,486	771,840
Labora	1,185,993	144,730	51,151	505,960	308,890
Therap	556,321	121,485	0	358,879	41,811
Hotel		508,800	476,839	1,245,196	1,373,716
XRays	1,501,986	20,907	4,181	52,687	81,121
Maint	886,026	581,528	137,872	571,002	296,798
Misc					
TOTRECU	21,385,662	6,357,202	4,773,984	10,155,518	9,629,827

NAKURU PROVINCIAL HOSPITAL 1988-89 SURGERY SEPARATE ALLOCATION

PERSONNEL	ANNEX	TOTAL
Direc	2,719,376	26,687,850
Alloc	1,253,729	5,683,385
Oper	1,323,831	6,001,170
Drugs	115,752	5,048,983
Dress	270,766	3,000,328
Labora	30,136	2,226,860
Therap	41,811	1,670,355
Hotel	131,364	3,735,914
XRays	5,854	1,666,736
Maint	700,000	3,173,228
Misc		0
		0

TOT RECU	6,592,620	58,894,810

Table 4 shows all the recurrent costs including personnel, vehicle operating, drugs, dressing, laboratory, therapy, hotel and x-ray. The personnel component is divided into direct costs and other costs that were allocated to each service area. The total cost for each service area for the items mentioned above indicate that 36.5 percent of the recurrent costs are incurred in outpatient, with surgical wards 16.3 percent, medical wards 17.2 percent, paediatric wards 10.8 percent, maternity 8.1 percent, and the Amenity annex 11.1 percent.

NAKURU PROVINCIAL HOSPITAL 1988-89

DEVELOPMENT COSTS

	OP	PAEDS	MATERN
DEVELOPMENT COST (Not included allocation of support areas' cost)			

BUILDING	1,392,330	913,830	216,656
X-RAY	283,590	3,948	790
LAB	82,942	10,122	3,577
THERAP	51,868	11,227	0
DRUGS	121,204	6,349	4,723
DRESS	9,329	1,225	3,901
ADMIN	269,938	177,169	42,004
			0

TOTAL DEV	2,211,202	1,124,639	271,651

	MEDICAL	SURGICAL	ANNEX	TOTAL
DEVELOPMENT COST (Not included allocation of support areas' cost)				
BUILDING	897,289	466,396	1,100,000	4,986,502
X-RAY	9,948	15,316	1,105	314,697
LAB	35,384	21,602	2,108	155,734
THERAP	33,460	55,182	3,898	155,734
DRUGS	23,358	15,959	4,144	190,737
DRESS	7,474	8,910	3,126	34,634
ADMIN	173,962	90,423	256,929	1,010,424
				0
TOTALDEV	1,185,874	673,788	1,371,309	6,838,463

Table 5 shows how development costs are spread over the service areas. It also includes costs of X-ray, lab, therapy, drugs, dressings and administration in the service areas. Combining the cost of building only with the costs indicated above, the outpatient department still takes the biggest share (32.3 per cent). The proportion for outpatient even goes higher (35.9%) when all the recurrent and development costs are considered (see the table below).

TABLE 5

NAKURU PROVINCIAL HOSPITAL 1988-89
RECURRENT AND DEVELOPMENT COSTS

	OP	PAEDS	MATERN
RECURRENT	21,385,661	6,357,202	4,773,984
DEVELOPMENT	2,211,202	1,124,639	271,651
TOT COST	23,596,863	7,481,841	5,045,634

NAKURU PROVINCIAL HOSPITAL 1988-89
RECURRENT AND DEVELOPMENT COSTS

	MEDICAL	SURGICAL	ANNEX	TOTAL
RECURRENT	10,155,516	9,629,827	6,592	58,894,810
DEVELOPMENT	1,185,874	673,788	1,371,309	6,838,463
TOTAL COST	11,341,391	10,303,615	7,963,929	65,733,273

II: NAIVASHA DISTRICT HOSPITAL COST DETAIL

Naivasha District Hospital has a bed capacity of 107 and a busy outpatient department. The distribution of the beds is as follows:

Paediatrics	-	24 beds
Female Ward	-	34 beds
Male Ward	-	21 beds
Maternity	-	28 beds

		107

During 1988/89 financial year the hospital admitted a total of 4,505 patients with 25,169 inpatient days. The outpatient services registered 133,608 attendances. For the same period, the hospital had an expenditure of Kenya Shillings 7,616,248.

The study team collected sets of sampled data for use in the computation of costs of services provided by the various departments of the hospital. The information collected was for the same period under review (FY 1988/89). The team collected data on supplies (ie. drugs and dressings), personnel and its distribution, space, and utilisation of radiology, laboratory, physiotherapy and occupational therapy. The data collected was then extrapolated to arrive at figures for the whole year.

In order to facilitate the cost analysis, the hospital budget was collapsed into the following categories - personnel transportation, non direct costs, drugs and dressings, hotel costs and Xray supplies. A summary of these collapsed cost categories gives the following picture:

TABLE
BUDGET BY CATEGORIES

<u>Category</u>	<u>cost</u>	<u>%</u>
Personnel	5,153,98	68
Transportation	323,224	4
Non direct	1,022,792	13
Drugs & Dressing	583,534	8
Hotel costs	519,020	7
Xray supplies	13,880	0
	-----	-----
	7,616,248	100%
	-----	-----

These categorised costs were then allocated to each service delivery area. The allocation was based on the proportion of utilisation of resources. For the case of Naivasha, the service delivery areas were - outpatient, paediatrics (inpatient) maternity (inpatient), male ward (inpatient) and Female Ward (inpatient). The unit (average) cost for each of these service areas was determined by dividing the costs of the service point (staff, supplies drugs and space) with the utilisation (eg number of visits or patient days). The computed unit (average costs for Naivasha District Hospital are as follows:

TABLE 1:

UNIT COSTS BY SERVICE AREA, NAIVASHA

Area	Costs: Ksh.
Outpatient	17
Paediatrics	190
Maternity	238
Male Ward	256
Female Ward	222

From this Table, it is indicative that it is slightly cheaper to provide services to patients in paediatric ward, followed by female ward and more costly in the male ward. The section below gives details of the cost analysis for Naivasha.

COST BASED ON BUDGET AND UTILISATION OF SUPPLIES AND PERSONNEL

The study team collected data on the commonly used supplies and drugs, and distribution of personnel. The information on supplies and drugs was then extrapolated for the year (1988/89) and distributed to the points of usage. When matched to the funds spent for the year, the following utilisation in percentages emerges.

TABLE 2:

SUPPORT COSTS BASED ON AIE AND UTILISATION OF SUPPLIES

Area	Drug & Dressing Cost Proportion
Support Centre Theatre	31.6%
Mortuary	0.1%
Laboratory	0.5
Service Delivery Area	
Paediatric	2.6
Maternity	21.0
Outpatient	35.7
Male	4.9
Female	3.1
Other	0.5
	100.0%

The figures show that the outpatient and theatre consume most of the drugs and other supplies at the hospital. The maternity is the third largest spender of these items.

The distribution of personnel costs was also considered. Table 3 below outlines the distribution of personnel costs, in percentages.

TABLE 3

DISTRIBUTION OF PERSONNEL COSTS BASED ON AIE AND UTILISATION

<u>Support Centre</u>	<u>Personnel Cost</u>	<u>Percentage</u>
Administration	474347	9.2%
Laundry	29,154	0.6
Kitchen	48591	0.9
Pharmacy	83459	1.6
Theatre	367,720	7.1
Mortuary	29,154	0.6
Laboratory	298,657	5.8
X-ray	138,969	2.7
Physiotherapy	119087	2.3
Occ. therapy	116,102	2.3
<u>Service Delivery Area</u>		
Paediatric	631871	12.3
Maternity	606475	11.8%
Outpatient	1080543	21.0%
Male	576,614	11.2%
	5,153,821	100.0%

Overall, personnel consumes about 68% of the total hospital budget. The computation on the personal distribution indicates that outpatient services utilise the highest number of personnel. In the analysis, the outpatient services include - filter, casualty, dental and orthopaedic workshop. The distribution in the inpatient areas appears uniform and therefore not unusual.

COSTS OF OTHER SERVICES

The study team further computed unit costs for procedures (Xray, lab, therapy) and surgical operations (including Cesarian section and normal delivery). The resultant picture is in the following Table.

TABLE 4

COST OF SERVICE AREA PROCEDURES - NAIVASHA

<u>Procedure</u>	<u>Unit Cost - Ksh</u>
X-ray	251
Lab	54
Therapy (physio & occup)	46
Surgical operation	
Major	970
Minor	323
Cesarian section	970
Normal delivery	411

III. Health Centre Cost Detail: FY 1988/89

ALLOCATION OF COSTS OF PERSONNEL, DRUGS AND DRESSINGS, BETWEEN PREVENTIVE AND CURATIVE SERVICES

PERS: DND	K# ROW TOTAL	MOGOTIO		KARATE		NJORO		GK PRIS.	
		ELBURG.		NDABIBI	LONGON.	LANGAL.			
PERS:									
PRE:	50,538	14,555	10,938	0	0	15,872	0	0	2,223
CUR:	71,258	5,665	25,742	1,951	1,851	8,306	1,851	1,242	24,650
OTH:	65,801	15,273	12,950	240	2,181	8,466	1,095	2,337	23,264
PUB:		1851	3300			4365			
SUB:	187647	35498	49630	2191	4032	32644	2946	3579	57127
DRUG:									
KIT:	16629	4033	4437	1611	1007	2622	1300	1611	0
KIT:	29526	6780	7458	3264	2040	4068	2652	3264	0
NON:	6305	4591	1136	0	111	278	168	61	0
SUB:	108682	15404	13031	4875	3157	6928	4129	4936	56203
DRES:	5213	340	616	23	74	281	172	185	3520
SUB:	113895	15744	13647	4898	3231	7208	4301	5121	59715

AIE'S FOR FACILITIES, IN Ksh

REQUI COST	Ksh ROW TOTAL	MOGOTIO		KARATE		NJORO		GK PRIS.	
		ELBURG.		NDABIBI	LONGON.	LANGAL.			
Perse:	3752940	709960	992600	43820	80640	652880	58920	71580	1142540
Pass:	123564	5688	3209	1568	6345	3336	1599	1239	100580
Punn:	66389	11698	6099	3135	12263	6340	3040	2214	21400
Over:	28795	6844	3861	1886	7634	4014	1924	1632	1000
Trav:	30468	7539	4254	2078	8410	4423	2121	1643	0
Post:	321	79	45	22	80	47	22	17	0
Tele:	37937	346	30235	95	786	203	97	75	6500
Elec:	23404	5053	1465	715	2896	1739	730	566	10040
Opul:	2277907	314889	272934	17950	64628	144167	26026	102413	1194900
Patil:	123594	24323	80056	2138	8654	4551	2182	1690	0
Unif:	1216	301	170	87	335	176	85	66	0
Punc:	21915	969	547	267	1081	568	272	211	16000
Punc:	12977	1454	821	401	1622	853	409	317	7000
Misc:	317608	2348	1325	647	2619	1377	660	512	30000
Punc:	42613	647	365	179	721	379	182	141	10000
Offi:	720	178	101	49	199	105	50	39	0
Power:	12610	2131	1202	587	2377	1250	599	464	10000
Main:	86463	13973	7884	3851	15586	8196	3929	3044	30000
TOTAL:	6961342	1108420	1407173	159470	216485	834604	162847	187863	2991400

TOTAL RECURRENT COSTS BY MAJOR ACCOUNT, in Ksh.

TOTAL REC.	Ksh.	MOGOTIO	KARATE	NJORO	GK PRIS.	LANGAL.			
	ROW TOTAL	ELBURG.	NDABIBI	LONGON.					
PEPS	3028887	724156	1000610	47773	96476	661207	62912	74673	1261100
TRAN	95184	18542	9960	5021	19897	10354	4964	3846	22600
OVHD	534554	26209	43443	6545	26495	14149	6678	5175	405360
D&D	2277907	314889	272934	97950	64628	144167	86026	102413	1194900
NOTE	124810	65563	44811			14436			
TOTAL	6961342	1149359	1371758	157249	207496	844313	160580	186107	2884400

TOTAL INPATIENT RECURRENT COSTS, IN Ksh.

INPAT. REC.	ROW TOTAL	MOGOTIO	KARATE	NJORO	GK PRIS.	LANGAL.
		ELBURG.	NDABIBI	LONGON.		
PEPS	206172	108302	74023			
TRAN	2594	1669	626		23846	
OVHD	5499	2359	2731		299	
D&D	49667	29347	17160		408	
NOTE	124810	65563	44811		4159	
TOTAL	388742	206241	139352	0	43148	0

RECURRENT UNIT COSTS PER INPATIENT, IN Ksh.

INPAT. UNIT	MOGOTIO	KARATE	NJORO	GK PRIS.	LANGAL.
	ELBURG.	NDABIBI	LONGON.		
PEPS	19.9	20.1	19.9		
TRAN	3.0	2.0	2.0		
OVHD	4.0	7.0	3.0		
D&D	5.2	4.7	3.5		
NOTE	12.0	12.2	12.0		
COST	378	379	360		

TOTAL RECURRENT COSTS LESS INPATIENT COSTS, IN Ksh.

	Ksh.	MOGOTIO	KARATE	NJORO	GK PRIS.				
COST ROW TOTAL		ELBURG.	NDABIBI	LONGON.	LANGAL.				
PERS	3722715	615854	926527	47733	96476	637361	62912	74673	1261120
TRAN	92590	16873	9334	5021	19897	10055	4964	3846	22600
OVHD	529055	23850	40712	6545	26495	13741	6678	5175	405840
D & MAINT	2228240	286542	255774	97950	64628	140008	86026	102413	1194900
		28527	28527	3340	5566	32562	13359	13359	56018
TOTAL	6754058	971644	1260933	160589	213062	833727	173939	199466	2940698

TOTAL VISITS, PREVENTIVE AND CURATIVE, FY 1988/89

HC VISI	Ksh.	MOGOTIO	KARATE	NJORO	GK PRIS.				
POW TOTAL		ELBURG.	NDABIBI	LONGON.	LANGAL.				
PREV	97059	11233	18825	0	15998			51003	
CURA	257837	48432	46825	11325	7820	33275	16494	12410	81256
TOTAL	354896	59665	65650	11325	7820	49273	16494	12410	132259

RECURRENT COSTS OF PREVENTIVE SERVICES, IN Ksh.

PREV REC.	Ksh.	MOGOTIO	KARATE	NJORO	GK PRIS.			
ROW TOTAL		ELBURG.	NDABIBI	LONGON.	LANGAL.			
PERS	925841	183683	170768	0	313945	0	0	257444
TRAN	6671	978	938	0	1209	0	0	7544
OVHD	70814	1383	4092	0	1652	0	0	63629
D & MAINT	3295	647	1257	0	838	0	0	667
TOTAL	1006621	186691	177056	0	317643	0	0	325074

RECURRENT UNIT COSTS OF PREVENTIVE SERVICES, IN Ksh.

PREV. UNIT	MOGOTIO	ELBURG.	KARATE	NDABIBI	NJORO	LONGON.	GK PRIS.	LANGAL.
PERS	16.35	9.07			19.62			5.05
TRANS	0.09	0.05			0.08			0.07
OVHD	0.12	0.22			0.10			1.25
D & O	0.06	0.07			0.05			0.01
MAINT	0.17	0.10			0.14			0.07
TOTAL	16.79	9.51			19.99			6.45

RECURRENT COSTS OF CURATIVE SERVICES, IN Ksh.

CURA. REC.	Ksh. MEAN	MOGOTIO	ELBURG.	KARATE	NDABIBI	NJORO	LONGON.	GK PRIS.	LANGAL.
PERS	2796874	432170	755819	47733	96476	323416	62912	74673	1,003,676
TRAN	85918	15894	8396	5021	19897	8847	4964	3846	19,054
OVHD	458241	22467	26620	6545	26495	12089	6678	5175	342,172
D & O	2224946	285895	254517	97950	64628	139170	86026	102413	1,194,347
TOTAL	5565979	756426	1055351	157249	207496	483521	160580	186107	2,559,249

RECURRENT UNIT COSTS OF CURATIVE SERVICES, IN Ksh.

CURA. UNIT	MOGOTIO	ELBURG.	KARATE	NDABIBI	NJORO	LONGON.	GK PRIS.	LANGAL.
PERS	8.92	16.14	4.21	12.34	9.72	3.81	6.02	12.75
TRAN	0.33	0.18	0.44	2.54	0.27	0.30	0.31	0.27
OVHD	0.46	0.78	0.59	3.39	0.36	0.40	0.42	4.22
D & O	5.90	5.44	3.00	8.26	4.18	5.22	8.25	14.70
MAINT	0.55	0.57	0.22	0.66	0.91	0.76	1.00	0.65
TOTAL	16.17	23.11	14.56	27.20	15.44	10.49	16.00	32.59

UNIT COSTS OF COMBINED CURATIVE AND PREVENTIVE SERVICES, IN Ksh.

UNIT OUTP	MOGOTIO	KARATE	NJORO	GK PRIS.	ELBURG.	NDABIBI	LONGON.	LANGAL.
CURRATIVE	16.17	23.11	14.16	27.20	15.44	10.49	16.00	32.14
PREVENTIVE	16.79	9.51	0.00	0.00	19.99	0.00	0.00	6.45
COMBINED	16.28	19.21	14.18	27.25	16.92	10.55	16.07	22.23

TOTAL COST (RECURRENT AND CAPITAL) PER VISIT, IN Ksh.

COST VISIT	MOGOTIO	KARATE	NJORO	GK PRIS.	ELBURG.	NDABIBI	LONGON.	LANGAL.
RECURRENT VISITS	59665	65650	11325	7820	49273	16494	12410	132259
COST	971644	1260933	160589	213062	833727	173939	199466	2940698
UNIT REC	16.28	19.21	14.18	27.25	16.92	10.55	16.07	22.23
UNIT CAP	0.48	0.43	0.29	0.71	0.66	0.81	1.08	0.43
UNIT TOTAL	16.76	19.64	14.47	27.96	17.58	11.36	17.15	22.66

REPLACEMENT AND MAINTENANCE COSTS, IN Ksh.

METER SOR	METER2 COST	MOGOTIO	KARATE	NJORO	GK PRIS.	ELBURG.	NDABIBI	LONGON.	LANGAL.
METE		205	205	24	40	234	96	96	404
REPL	3000	32,800	32,800	3,840	6,400	37,440	15,360	15,360	61,120
PREV		1,902	1,902	223	371	2,171	891	891	7,218
CURR		26,625	26,625	3,117	5,195	30,391	12,468	12,468	61,120
TOTAL		28,527	28,527	3,340	5,566	32,562	13,359	13,359	68,338
MAIN	3000	32,800	32,800	3,840	6,400	37,440	15,360	15,360	61,120
PREV		1,902	1,902	223	371	2,171	891	891	7,218
CURR		26,625	26,625	3,117	5,195	30,391	12,468	12,468	61,120
TOTAL		28,527	28,527	3,340	5,566	32,562	13,359	13,359	68,338

ALLOCATION OF COSTS FOR PERSONNEL, DRUGS & DRESSING, BETWEEN CURATIVE AND PREVENTIVE SERVICES

PERS, DRUG & DRESSING	MOGOTIO		KARATE		NJORO		GK PRIS.		
	ALL HC	ELBURG.		NDABIBI		LONGON.		LANGAL.	
% OF PERSON									
PREVENTIVE	27%	41%	22%	0%	0%	49%	0%	0%	15%
CURATIVE	33%	16%	52%	89%	46%	25%	53%	35%	43%
OTHER	35%	43%	26%	11%	54%	26%	37%	65%	41%
PEPS/TOTAL	62%	69%	78%	31%	56%	82%	41%	41%	49%
% OF D&D									
DRUGS	95%	98%	95%	100%	98%	96%	96%	96%	94%
DRESSING	5%	2%	5%	0%	2%	4%	4%	4%	6%
D&D/TOTAL	38%	31%	22%	69%	44%	18%	59%	59%	51%

DISTRIBUTION OF RECURRENT COSTS WITHIN HEALTH CENTRES AND DISPENSARY

% RECURRENT COSTS	MOGOTIO		KARATE		NJORO		GK PRIS.		
	AVG	ELBURG.	ELBURG.	NDABIBI	LONGON.	LANGAL.	LANGAL.	LANGAL.	
Personnel	57.0%	64.1%	70.5%	27.5%	37.0%	78.0%	36.0%	38.1%	30.4%
Transport	1.8%	0.5%	0.2%	1.0%	2.0%	0.4%	1.0%	0.7%	3.5%
Printing Exp.	1.0%	1.1%	0.4%	2.0%	5.7%	0.8%	1.9%	1.2%	0.7%
Overhaul/R	0.4%	0.6%	0.3%	1.0%	3.5%	0.5%	1.2%	0.9%	0.0%
Travelling	0.4%	0.7%	0.3%	1.3%	3.9%	0.5%	1.3%	0.9%	0.0%
Postal/Tel	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Telephone	0.5%	0.0%	0.1%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%
Electricity	0.3%	0.5%	0.1%	0.1%	1.3%	0.0%	0.1%	0.3%	0.1%
Drugs/Ores	32.7%	29.4%	19.9%	61.4%	29.0%	17.3%	50.8%	55.0%	41.4%
Lab. Food	1.8%	2.0%	5.7%	1.7%	4.0%	0.5%	1.3%	0.9%	0.0%
Uniforms	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%
Clothing	0.3%	0.1%	0.0%	0.2%	0.5%	0.1%	0.2%	0.1%	0.6%
Stationery	0.2%	0.1%	0.1%	0.3%	0.7%	0.1%	0.3%	0.2%	0.2%
Miscellaneous	4.6%	0.2%	0.1%	0.1%	1.2%	0.0%	0.4%	0.3%	10.7%
Equipment	0.6%	0.1%	0.0%	0.1%	0.3%	0.0%	0.1%	0.1%	1.4%
Office Equ	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%
Power Plan	0.2%	0.2%	0.1%	0.4%	1.1%	0.1%	0.4%	0.2%	0.1%
Maintenance	1.2%	1.3%	0.6%	2.4%	7.2%	1.0%	2.4%	1.6%	1.0%
TOTAL	100%	100%	100%	100%	100%	100%	100%	100%	100%

DISTRIBUTION OF COSTS BETWEEN COST CATEGORIES

% OF RECURRENT COSTS	MOGOTIO		KARATE		NJORO		GK PRIS.		
	ALL HC	ELBURG.	ELBURG.	NDABIBI	LONGON.	LANGAL.	LANGAL.	LANGAL.	
PERSONNEL	56.4%	63.0%	72.9%	30.4%	46.5%	78.3%	39.0%	40.1%	43.0%
TRANSPORT	1.4%	1.6%	0.7%	3.2%	9.6%	1.2%	3.1%	2.1%	0.9%
OVERHEAD	7.7%	2.3%	3.2%	4.2%	12.9%	1.7%	4.0%	2.8%	14.1%
DRUGS/ORES	32.7%	27.4%	19.9%	60.7%	31.1%	17.1%	53.6%	55.0%	41.4%
HOTEL	1.8%	5.7%	3.3%	0.0%	0.0%	1.7%	0.0%	0.0%	0.0%
TOTAL	100%	100%	100%	100%	100%	100%	100%	100%	100%

DISTRIBUTION OF INPATIENT RECURRENT COSTS BETWEEN COST CATEGORIES

% OF IP. RECUR. COS	MOGOTIO		KARATE		NJORO		GK PRIS.		
	ALL HC	ELBURG.	ELBURG.	NDABIBI	LONGON.	LANGAL.	LANGAL.	LANGAL.	
PERSONNEL	53.0%	9.4%	5.4%	0.0%	0.0%	2.2%	0.0%	0.0%	0.0%
TRANSPORTA	0.7%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
OVERHEAD	1.4%	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
DRUGS/DRES	12.8%	2.5%	1.3%	0.0%	0.0%	0.5%	0.0%	0.0%	0.0%
HOTEL COST	32.1%	5.7%	3.3%	0.0%	0.0%	1.7%	0.0%	0.0%	0.0%
TOTAL	100%	19%	10%	0%	0%	5%	0%	0%	0%

DISTRIBUTION OF OUTPATIENT RECURRENT COSTS BETWEEN COST CATEGORIES

% OF OP. SUM. REC.	MOGOTIO		KARATE		NJORO		GK PRIS.		
	ALL HC	ELBURG.	ELBURG.	NDABIBI	LONGON.	LANGAL.	LANGAL.	LANGAL.	
PERSONNEL	53.5%	53.6%	67.5%	30.4%	46.5%	75.5%	39.2%	40.1%	43.7%
TRANSPORTA	1.3%	1.5%	0.7%	3.2%	9.6%	1.2%	3.1%	2.1%	0.8%
OVERHEAD	7.6%	2.1%	3.0%	4.2%	12.8%	1.6%	4.2%	2.8%	14.1%
DRUGS/DRES	32.0%	24.9%	18.6%	62.3%	31.1%	16.6%	53.6%	55.0%	41.4%
TOTAL	1	1	1	1	1	1	1	1	1

DISTRIBUTION OF OUTPATIENT VISITS BETWEEN PREVENTIVE AND CURATIVE SERVICES

HC VISITS	MOGOTIO		KARATE		NJORO		GK PRIS.	
	ELBURG.	ELBURG.	NDABIBI	LONGON.	LANGAL.	LANGAL.	LANGAL.	
PREVENTIVE	5.9%	10.1%	0.0%	0.0%	12.0%	0.0%	0.0%	15.7%
CURATIVE	81.2%	71.3%	100.0%	100.0%	67.5%	100.0%	100.0%	61.4%
	48432	46825	11325	7820	33275	16494	12410	81256

DISTRIBUTION OF RECURRENT COSTS FOR PREVENTIVE SERVICES

% OF PREV. SUM. REC.	MOGOTIO		KARATE		NJORO		GK PRIS.		
	ALL HC	ELBURG.	ELBURG.	NDABIBI	LONGON.	LANGAL.			
PERSONNEL	13.3%	16.0%	12.4%	0.0%	0.0%	37.2%	0.0%	0.0%	8.9%
TRANSPORTA	0.1%	0.1%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%
OVERHEAD	1.0%	0.1%	0.3%	0.0%	0.0%	0.2%	0.0%	0.0%	2.2%
DRUGS/DPES	0.0%	0.1%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%

DISTRIBUTION OF RECURRENT COSTS FOR CURATIVE SERVICES

% OF CUR. SUM. REC.	MOGOTIO		KARATE		NJORO		GK PRIS.		
	ALL HC	ELBURG.	ELBURG.	NDABIBI	LONGON.	LANGAL.			
PERSONNEL	40.2%	37.6%	55.1%	30.4%	46.5%	38.3%	39.2%	40.1%	34.8%
TRANSPORTA	1.2%	1.4%	0.6%	3.2%	9.6%	1.0%	3.1%	2.1%	0.7%
OVERHEAD	6.6%	2.0%	2.7%	4.2%	12.8%	1.4%	4.2%	2.8%	11.0%
DRUGS/DPES	32.0%	24.9%	18.6%	62.3%	31.1%	16.5%	53.6%	55.0%	11.4%
TOTAL	1	1	1	1	1	1	1	1	1

NOTE ON COST ESTIMATION METHODS:

UNIFORMS FOR PATIENTS ESTIMATED AT 20 Ksh. PER ADMISSION
 IP TRANSPORT IS CALCULATED AS SAME RATIO OF IP PERS:TOTAL PERS
 OVERHEAD CALCULATED AS SAME RATIO OF IP PERS:TOTAL PERS
 PUBLIC HEALTH PERSONEL ARE DEDUCTED FROM COST OF FACILITY
 ALLOCATION OF AIE'S TO HEALTH CENTRES AND DISPENSARIES

APPENDIX: Analysis of New Visits and Revisits for
Curative and Preventive Services

APPENDIX: Analysis of New Visits and Revisits for
 Curative and Preventive Services

Figures 1 and 2 portray the number of new visits and revisits for curative services at the three hospitals studied. These graphs show that the decline in total visits for curative services at Nakuru and Naivasha (see Figures 4.1.1 and 4.1.2) is composed of reductions in both new visits and revisits. To some extent new visits should parallel revisits, other things being equal. That is, given a fixed morbidity pattern and level of effectiveness and efficiency, the ratio of revisits to new visits or total visits should be fairly stable over time. Figures 3 and 4 show that the ratio of new visits to revisits is stable at one health centre (Njoro). However new visits are declining slightly at Mogotio Health Centre while revisits are increasing, and new visits are increasing at Elburgon Health Centre while revisits are increasing slightly. Furthermore, at three of the four dispensaries studied new visits for curative services are increasing while revisits are not (see Figures 5 to 8). This could be sign of greater efficacy as clients are successfully treated in a single visit without the need for a follow up. Clients with complicated conditions requiring multiple visits are not likely to represent a very large proportion of dispensary clients; this is probably an artifact of the dispensary's role in providing a first line of health care in single visit.

Figures 9 to 12 represent new visits and revisits for curative services for the MOH facilities selected and all of the facilities selected. Overall, new visits and revisits are declining at hospitals, increasing slightly at health centres and stable at dispensaries. Assuming a relatively stable morbidity pattern and an estimated annual population growth rate of 4% per annum, it is evident that the proportion of the population receiving curative health care services is smaller now than it was two years ago. This does not bode well for Kenya's effort to achieve Health for All by the year 2000. Moreover it accentuates the conflict between demands for high quality services and increasing the quantity of services or facilities. As noted above, this could reflect a tendency for clients to go non-government facilities where they are willing to pay for higher quality services. There may be a positive side to this finding if the introduction of user fees results in (perceived) higher quality services since these people may then return to MOH facilities.

Figures 13 and 14 reveal that new visits and revisits for preventive services are declining at Nakuru. Conversely, at Naivasha new visits are increasing while revisits are decreasing, and at Meru new visits are decreasing while revisits are stable. This suggests that the efficacy of preventive care at Naivasha is low since new clients do not appear to be making revisits. At MOH health centres new visits parallel revisits. Across health centres, revisits are increasing while new visits are stable. This is a positive indication that efficacy of preventive services at health centres is increasing.

(see Figures 15 and 16). Finally, across MOH hospitals and health centres the overall trend is that new visits are stable while revisits are declining at hospitals and increasing at health centres (Figures 17 to 20). This phenomenon is summarised in Table 4.1.3. Clearly, efficacy of preventive services is lower at hospitals than at health centres. This could be due to the travel time and cost associated with visiting a nearby health centre as opposed to a hospital which may be farther away. It could also be a reflection of lower quality of preventive services at hospitals.

FIGURE 1

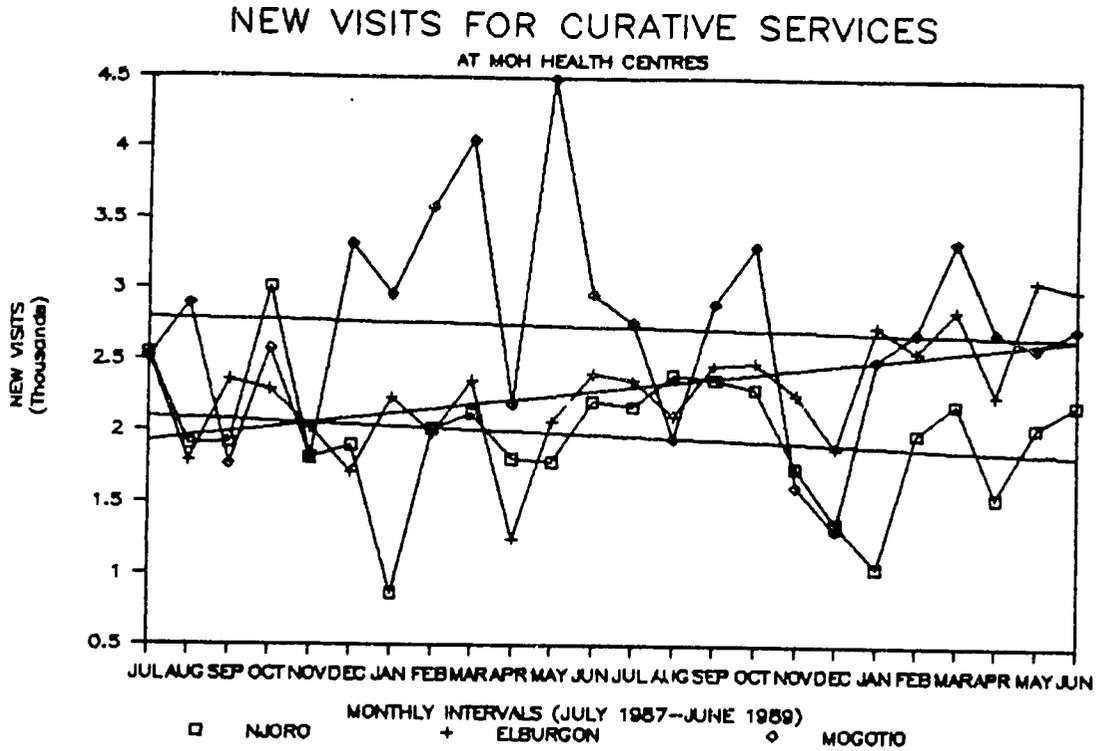


FIGURE 2

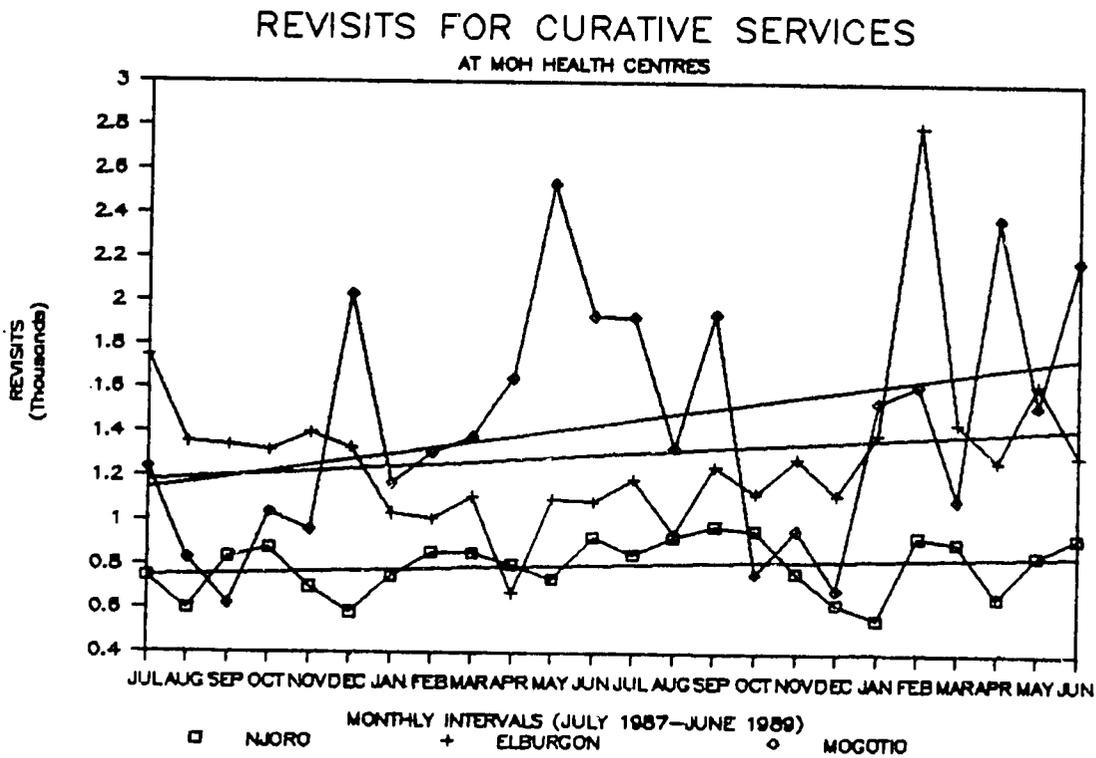


FIGURE 3

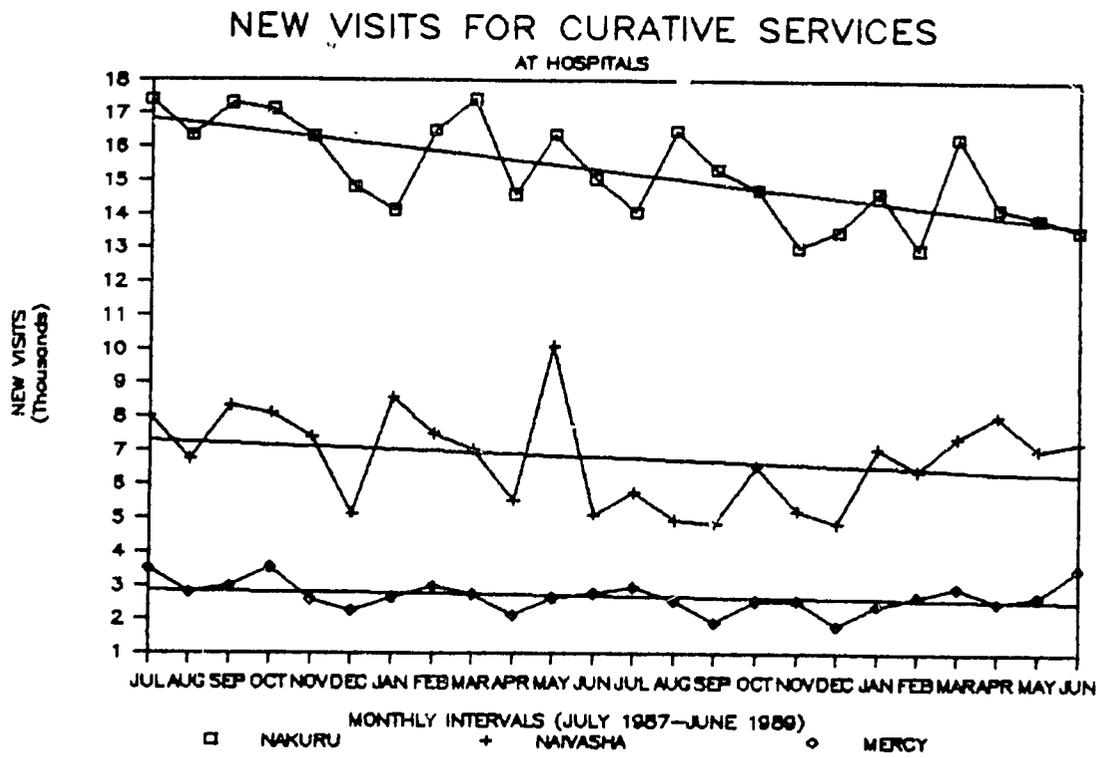


FIGURE 4

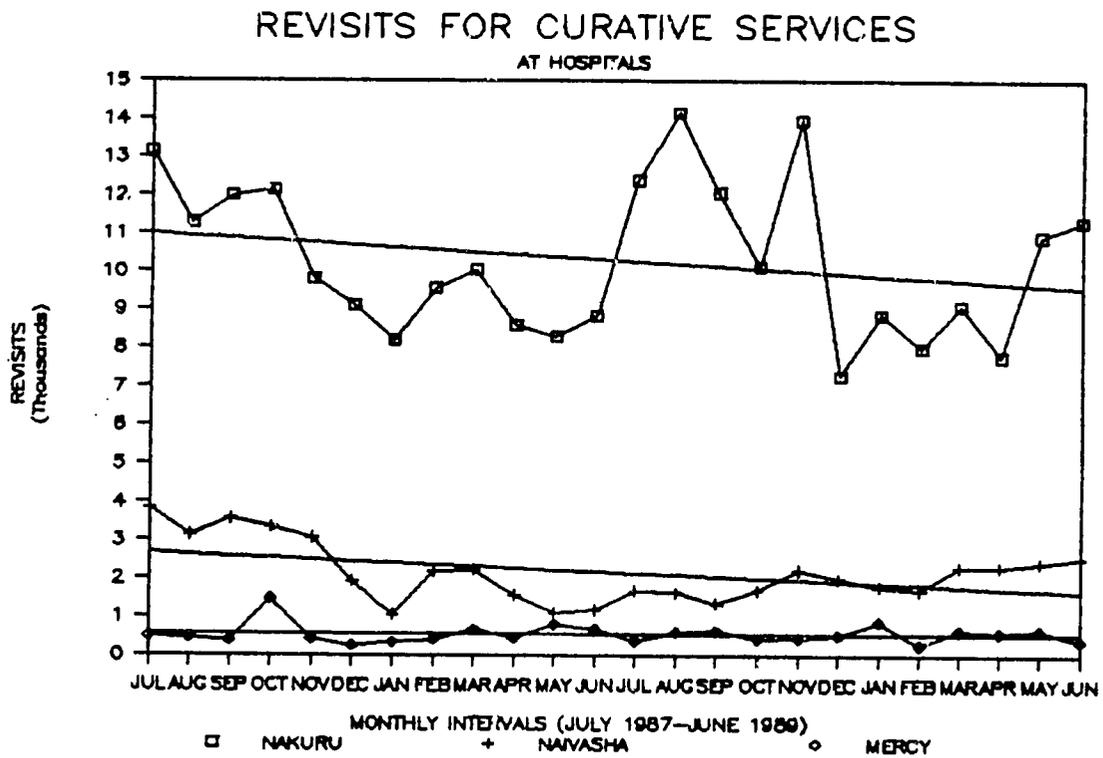


FIGURE 5
NEW VISITS FOR CURATIVE SERVICES
AT MOH DISPENSARIES

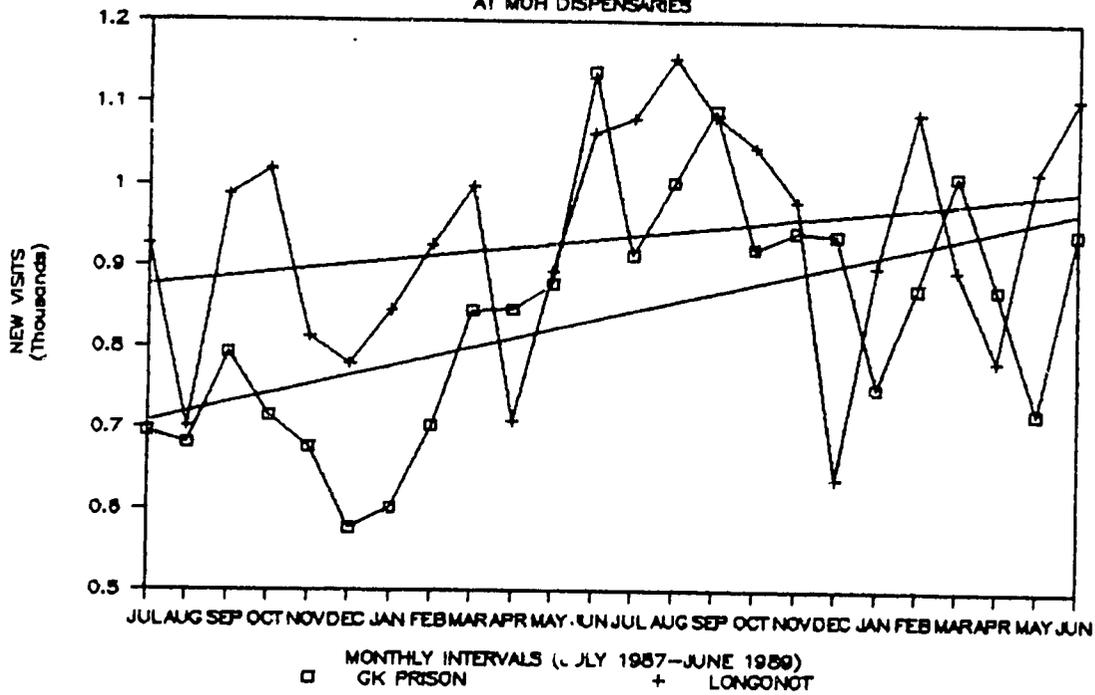


FIGURE 6

REVISITS FOR CURATIVE SERVICES
AT MOH DISPENSARIES

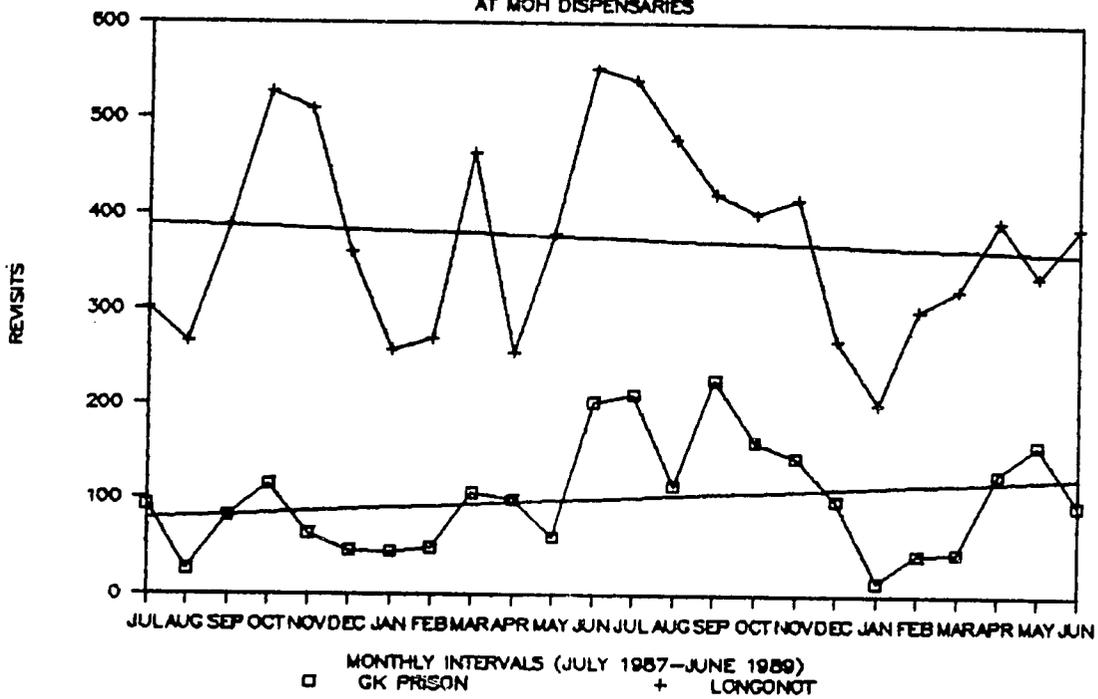


FIGURE 7

NEW VISITS FOR CURATIVE SERVICES
AT MOH DISPENSARIES

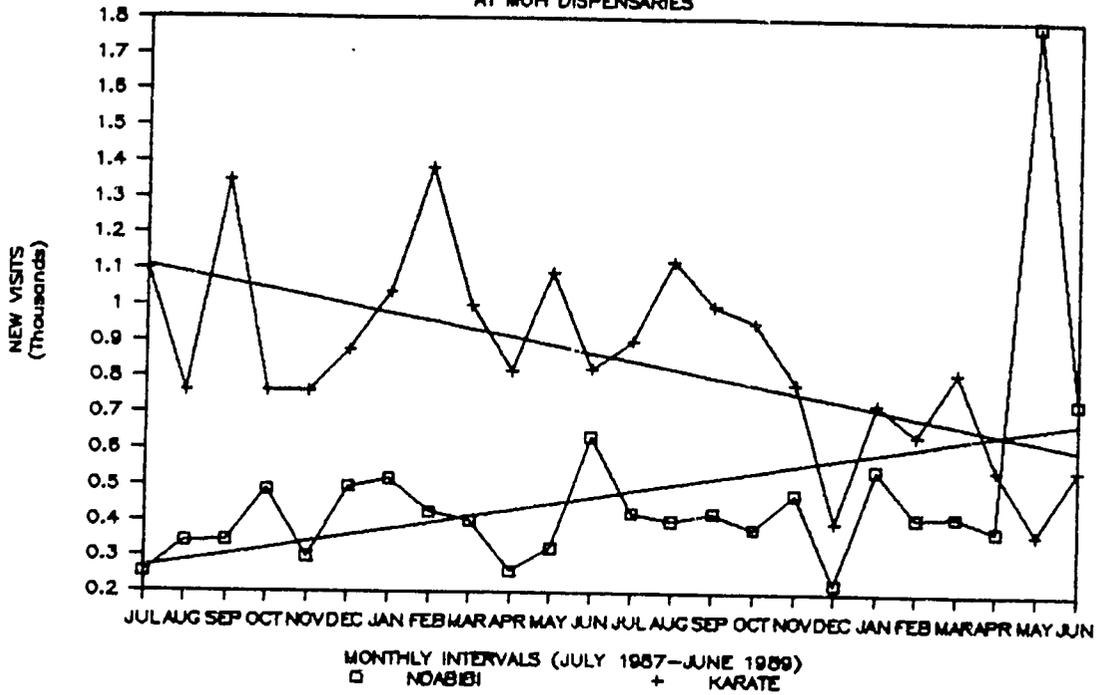


FIGURE 8

REVISITS FOR CURATIVE SERVICES
AT MOH DISPENSARIES

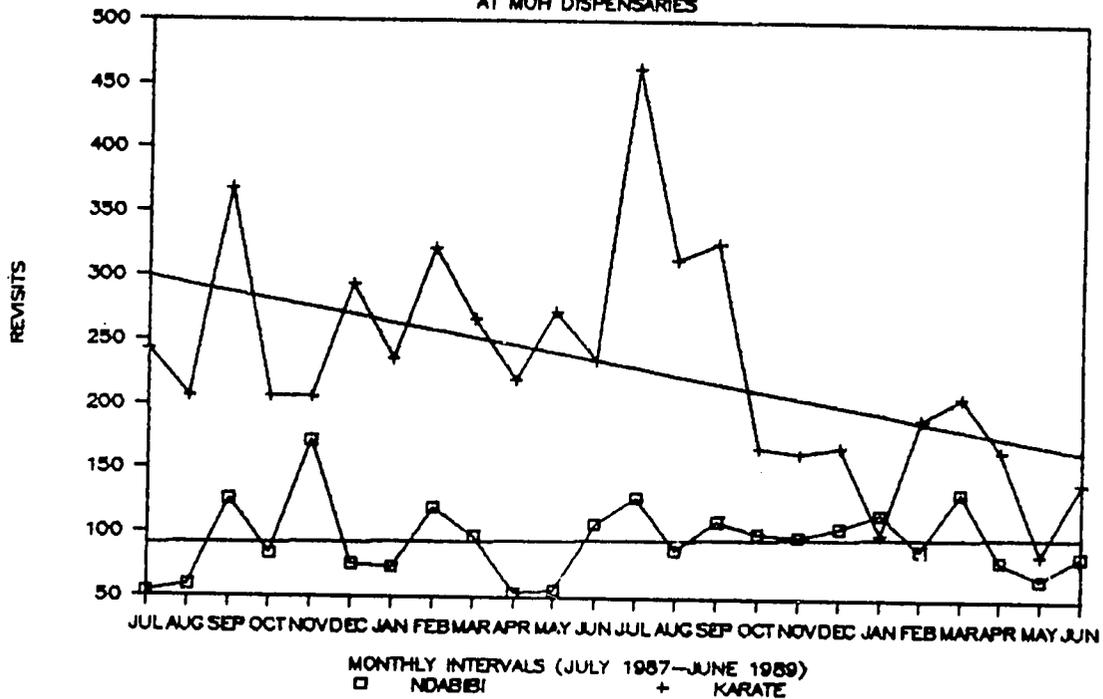
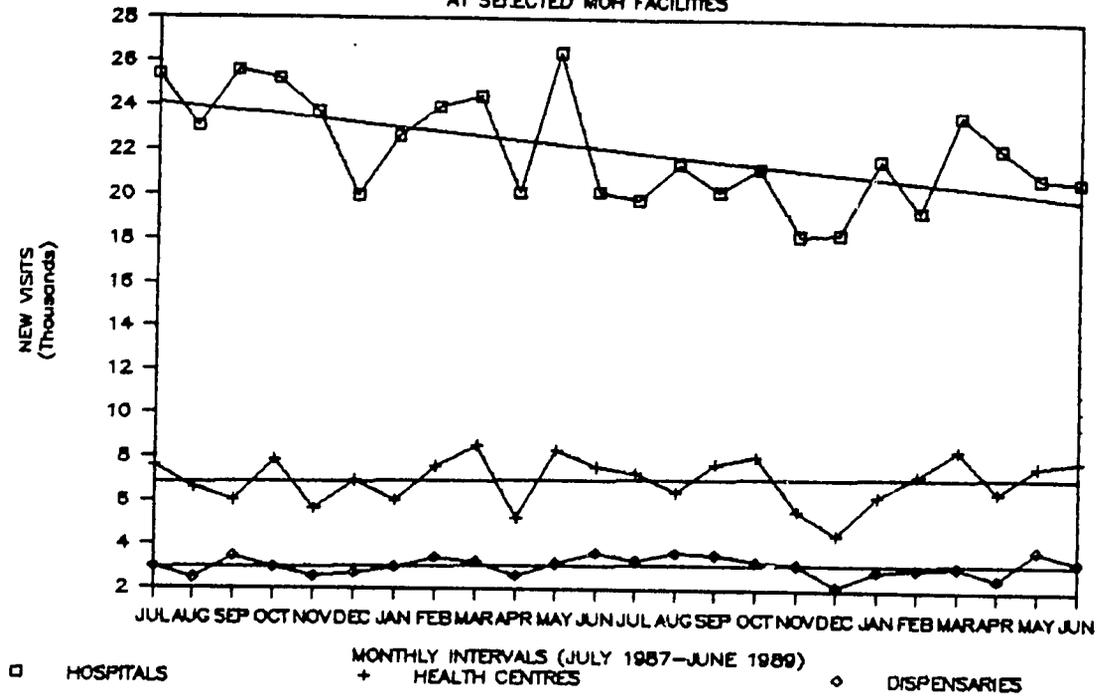


FIGURE 9

NEW VISITS FOR CURATIVE SERVICES

AT SELECTED MOH FACILITIES



F

REVISITS FOR CURATIVE SERVICES

AT SELECTED MOH FACILITIES

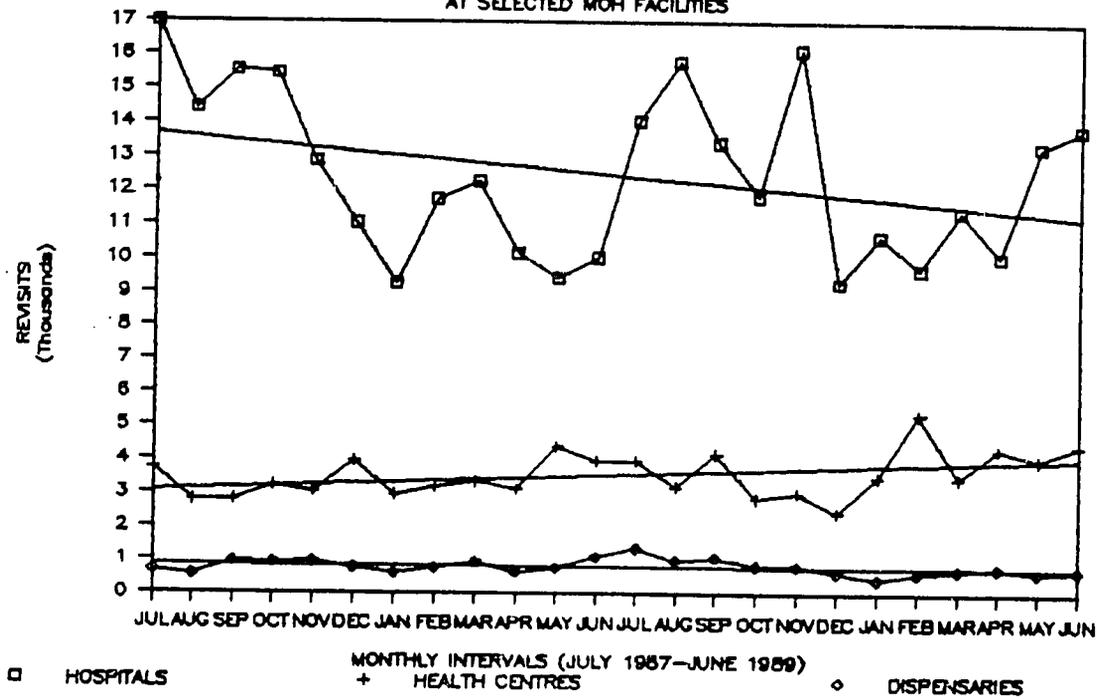
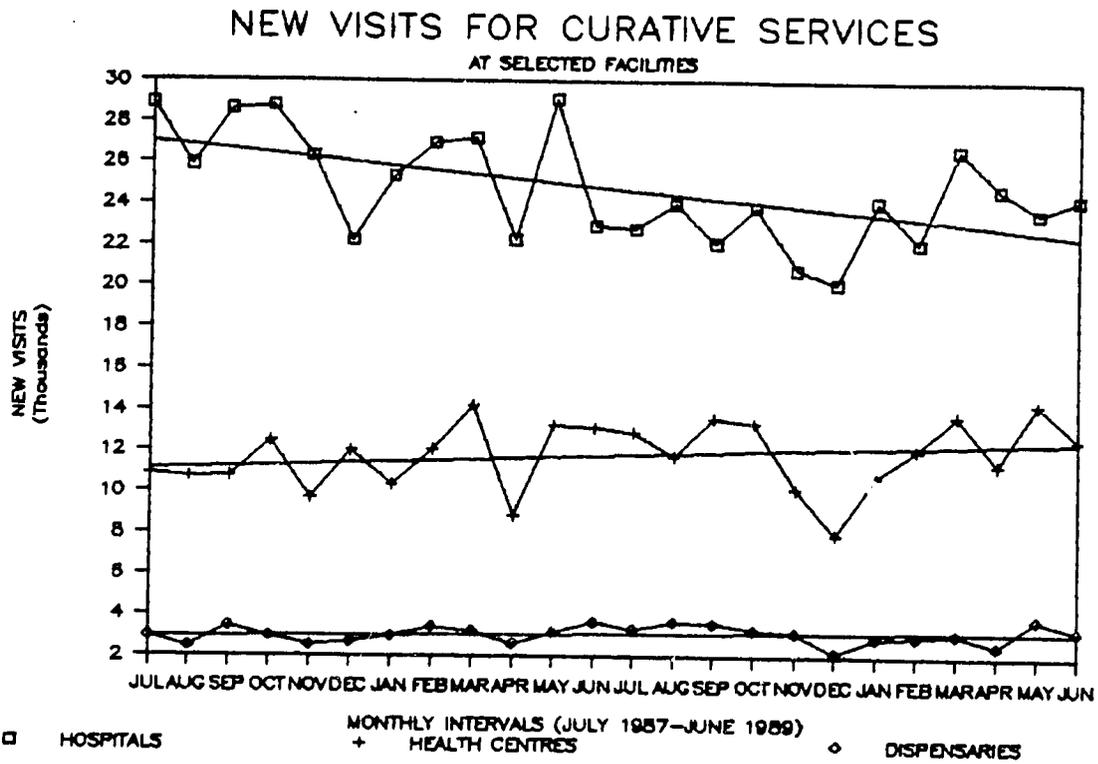


FIGURE 11



FIGURE

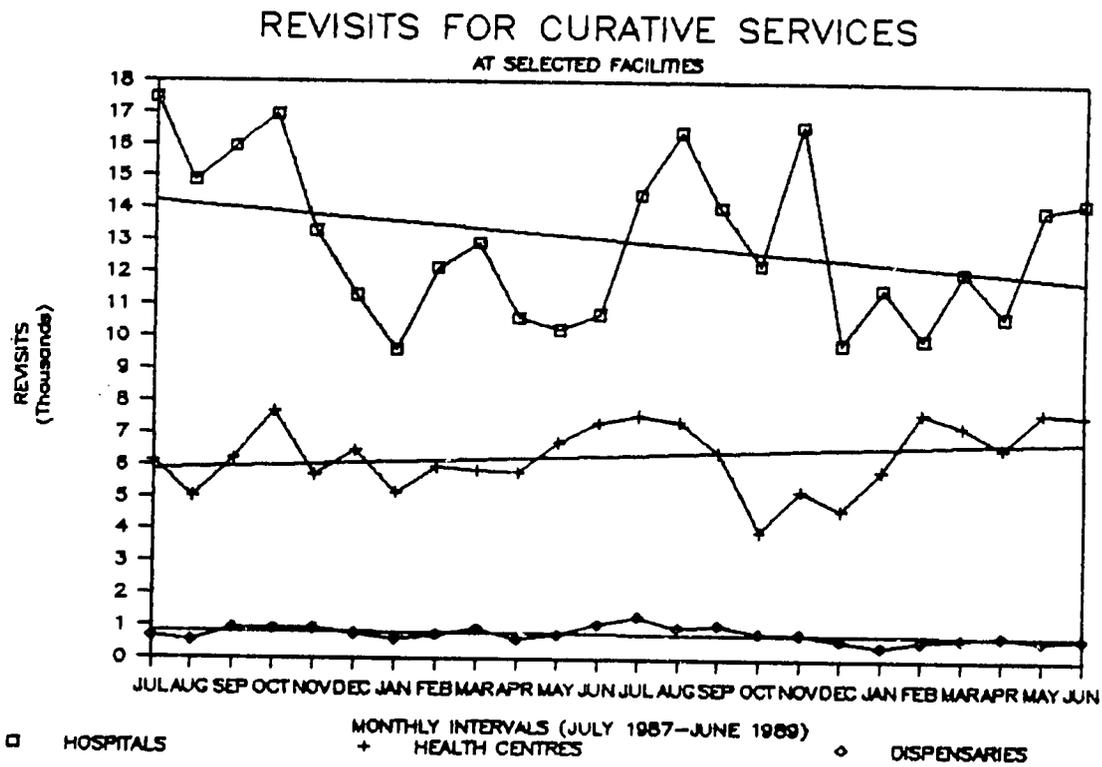


FIGURE 13

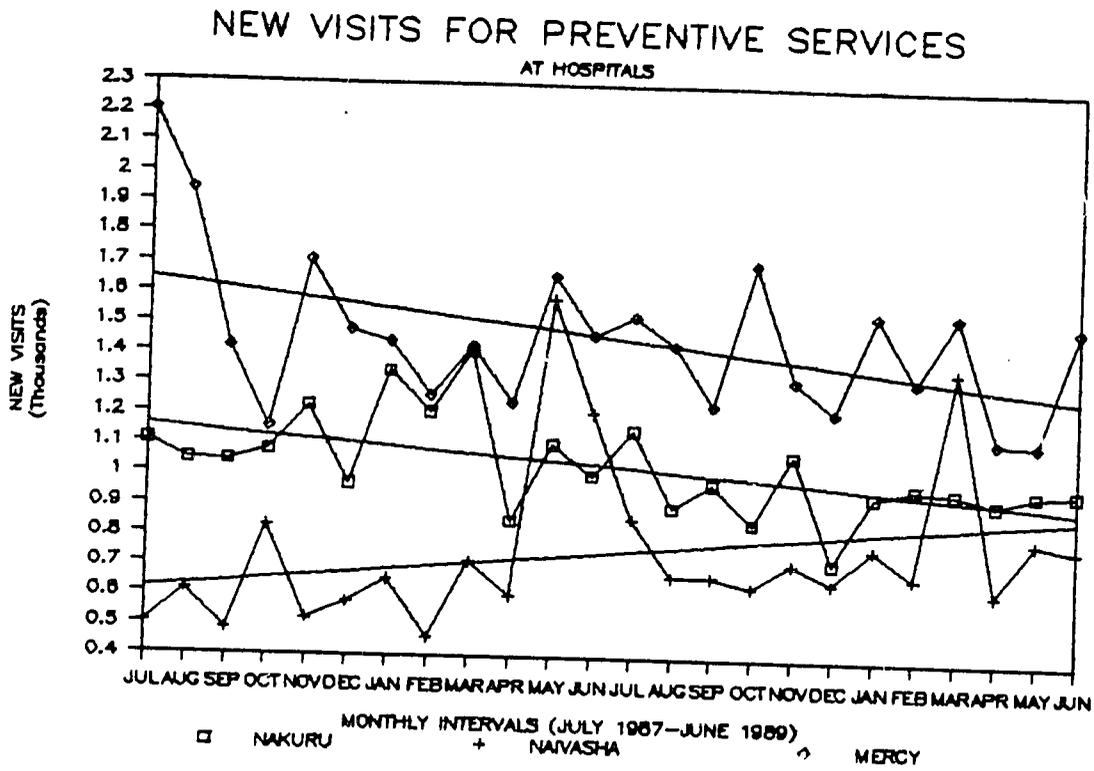


FIGURE 14

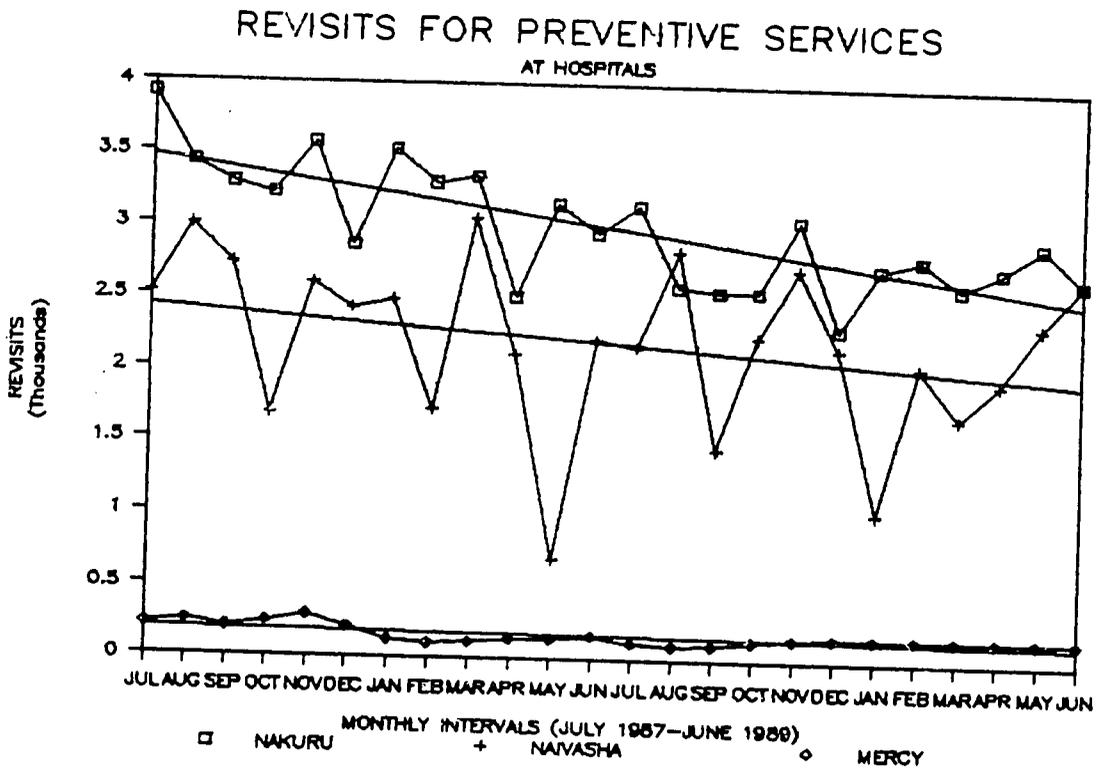


FIGURE 15

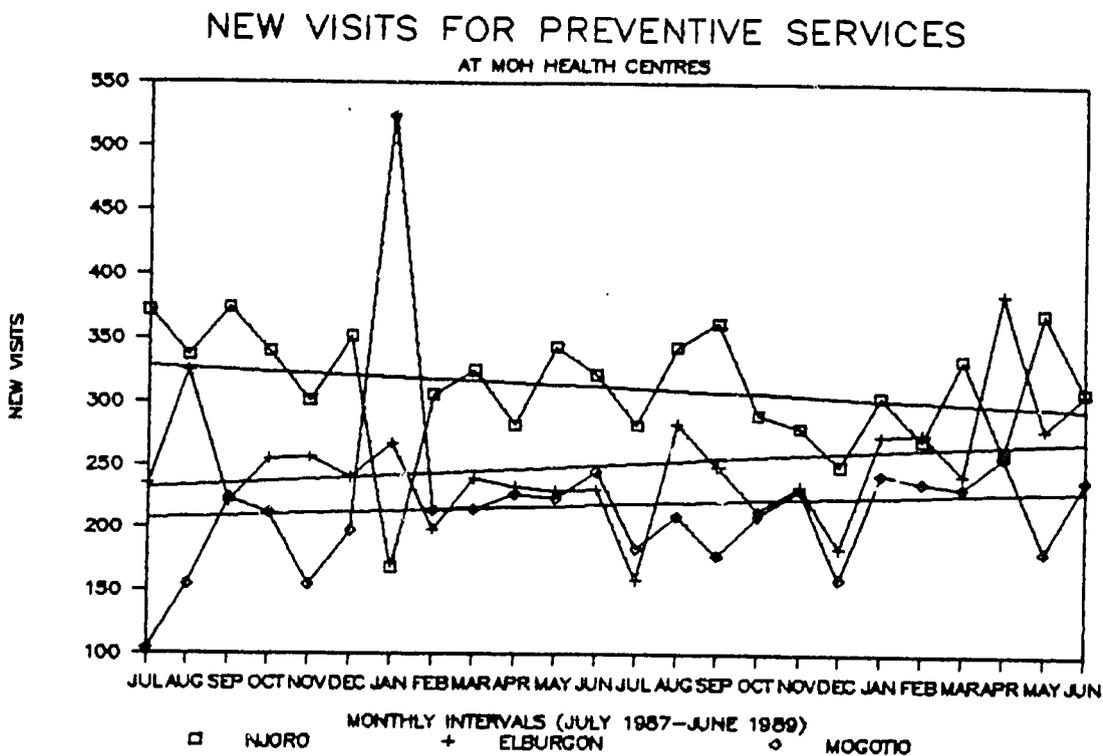


FIGURE 16

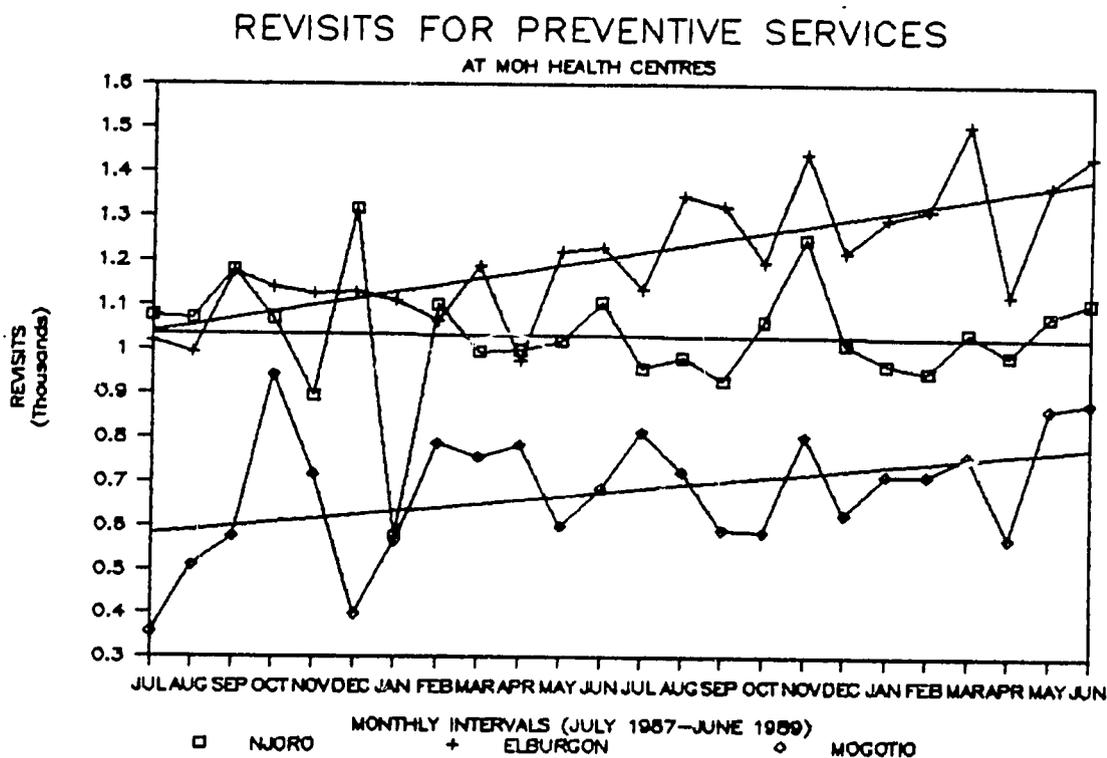


FIGURE 17

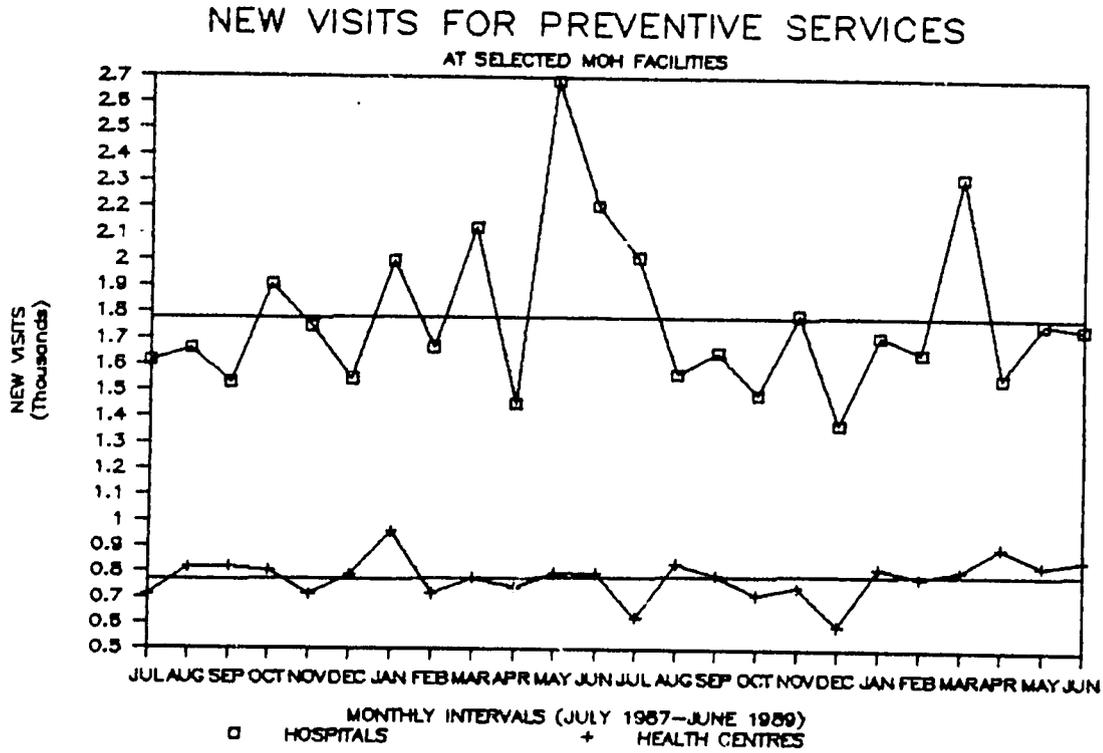


FIGURE 18

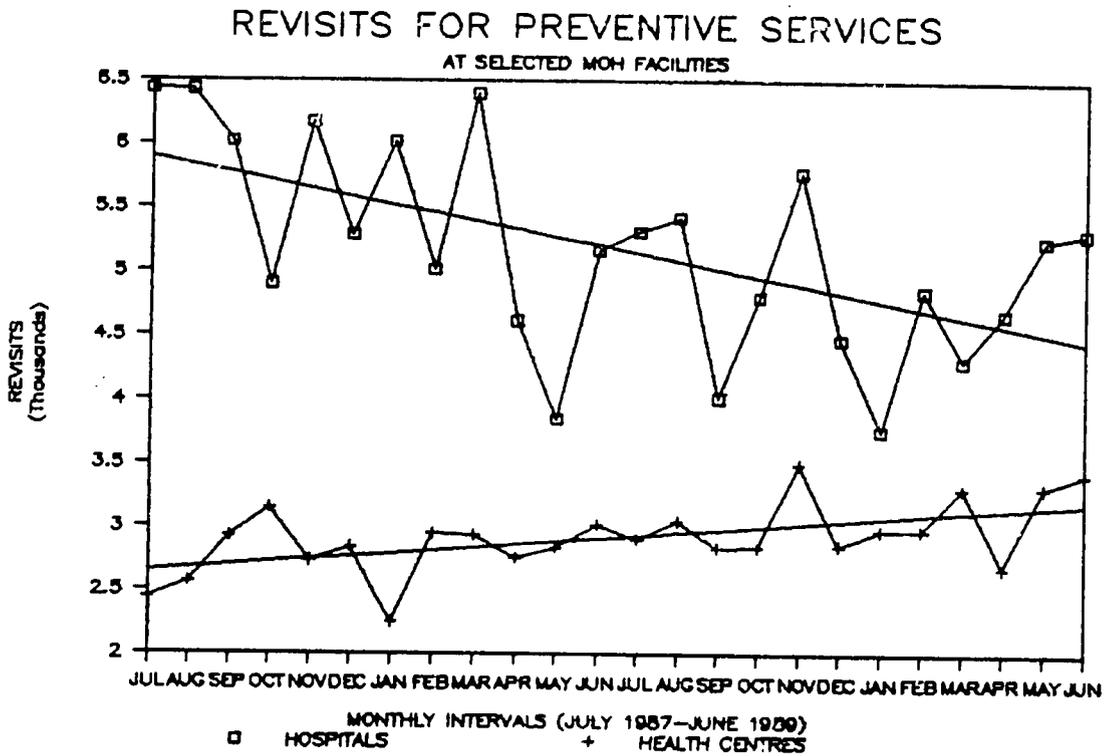


FIGURE 19

NEW VISITS FOR PREVENTIVE SERVICES

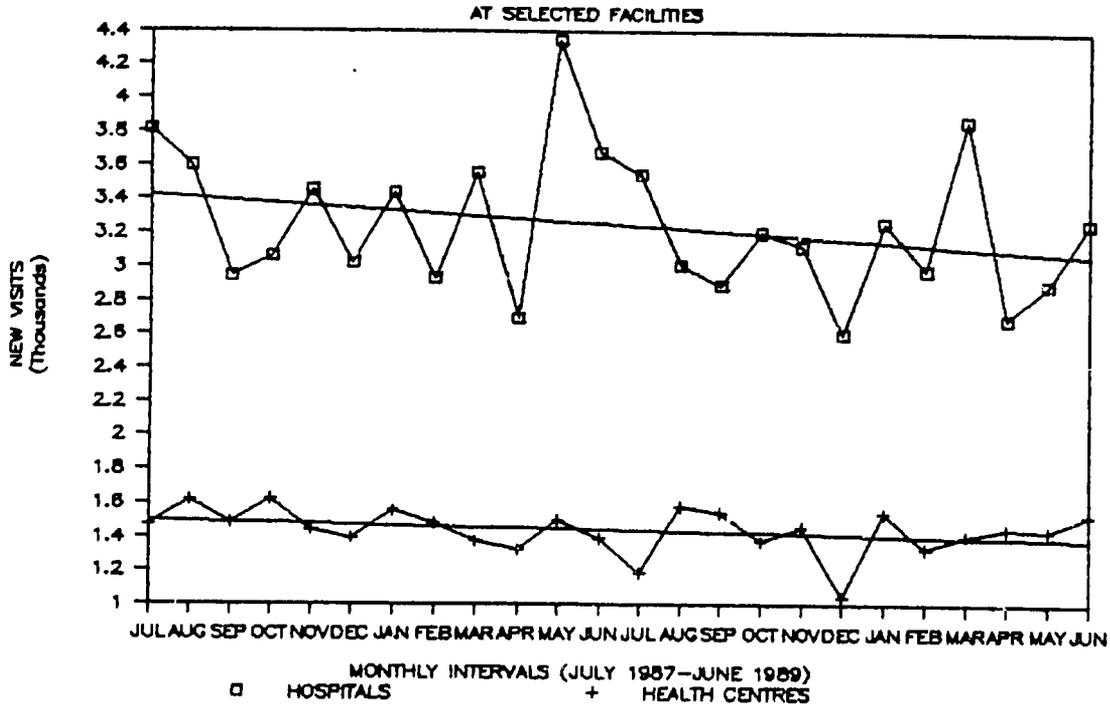
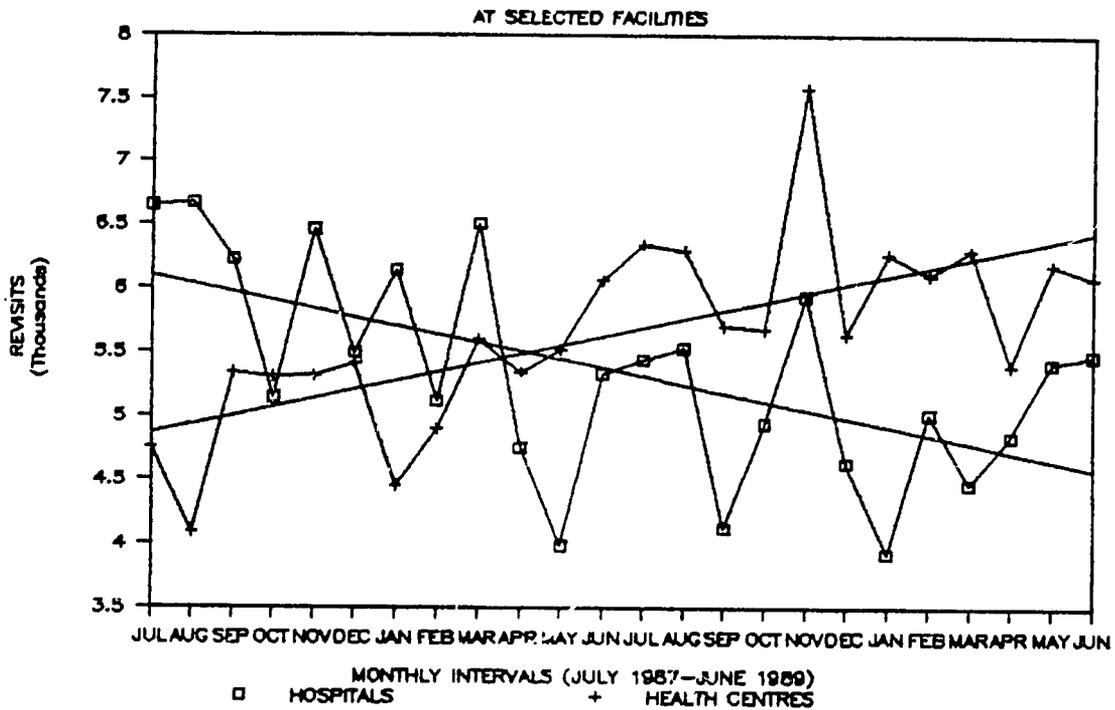


FIGURE 20

REVISITS FOR PREVENTIVE SERVICES



APPENDIX: Analysis of Inpatient Utilisation Statistics
By Ward Groups

**APPENDIX: Analysis of Inpatient Utilisation Statistics
 by Ward Groups**

In order to understand the overall utilisation picture at each facility it is necessary to disaggregate these statistics into comparable ward groups, and to determine how conditions in each ward (group) affect the overall performance of the hospital. Thus, admissions, discharges, length of stay, turnover interval, occupancy rate and throughput have been graphed separately for female wards, male wards, maternity wards and paediatric wards in Figures 1 to 24; this has been done for Nakuru and Naivasha only since female, male and paediatric cases are combined in a general ward at Mercy Hospital. At Nakuru, admissions are declining slightly in female and maternity wards and increasing slightly in male and paediatric wards; meanwhile discharges are declining in all wards, but most noticeably in maternity. The maternity ward at Nakuru historically has been quite congested, but an arrangement with the Bondeni Maternity Unit operated by the Nakuru Municipal Council has relieved some of this congestion and resulted in the decline in maternity discharges depicted here. Meanwhile, admissions and discharges at Naivasha remain stable in all wards. The average length of stay at Nakuru is decreasing slightly in female, male and paediatric wards, and increasing in maternity wards. This increase in length of stay for maternity cases at Nakuru is due to shifting uncomplicated pregnancies to Bondeni Maternity Unit and thus receiving a higher proportion of complicated deliveries. The high overall average length of stay at Nakuru is driven primarily by the exceedingly long stays in male wards. At Naivasha the average length of stay is fairly stable except in the male ward where it is decreasing. Occupancy rates at both Nakuru and Naivasha are declining in all wards, though more so at Nakuru than Naivasha. The decline at Nakuru is welcome since it means reduced congestion and potentially greater efficiency in treatment yielding a shorter average length of stay. Finally, throughput levels in all wards at Nakuru are declining along with occupancy rates; at Naivasha throughputs are stable or declining in female, maternity and paediatric wards, and increasing in male wards as a result of decreased average length of stay.

FIGURE 1

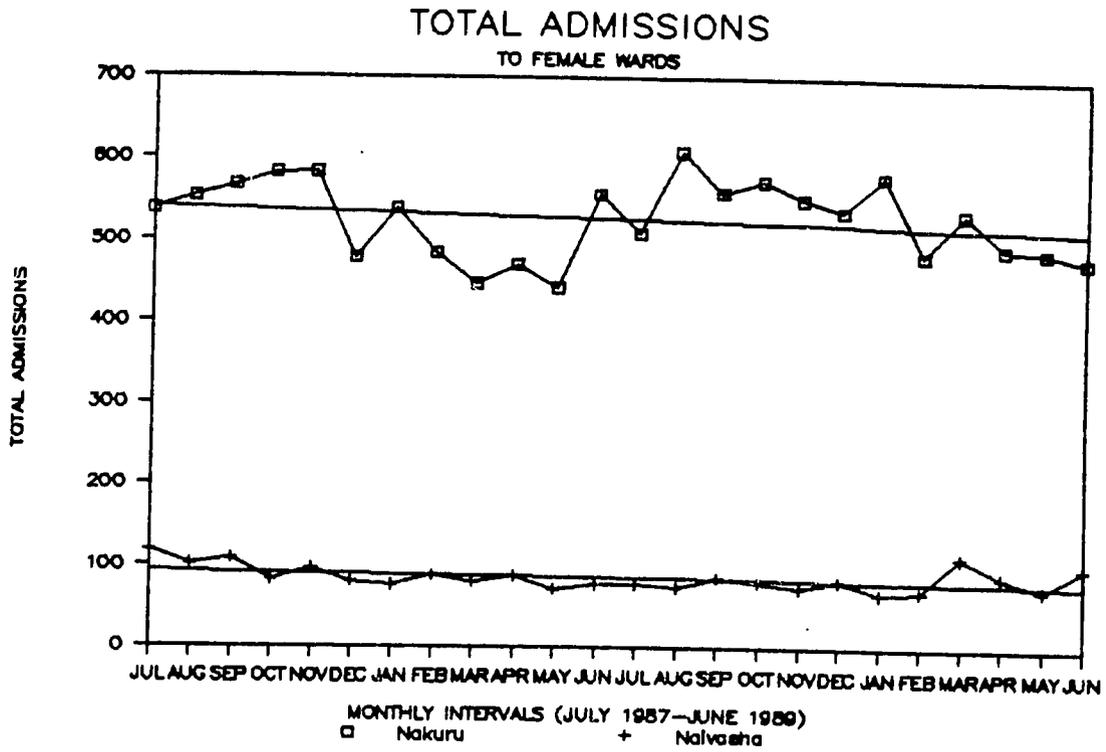


FIGURE 2

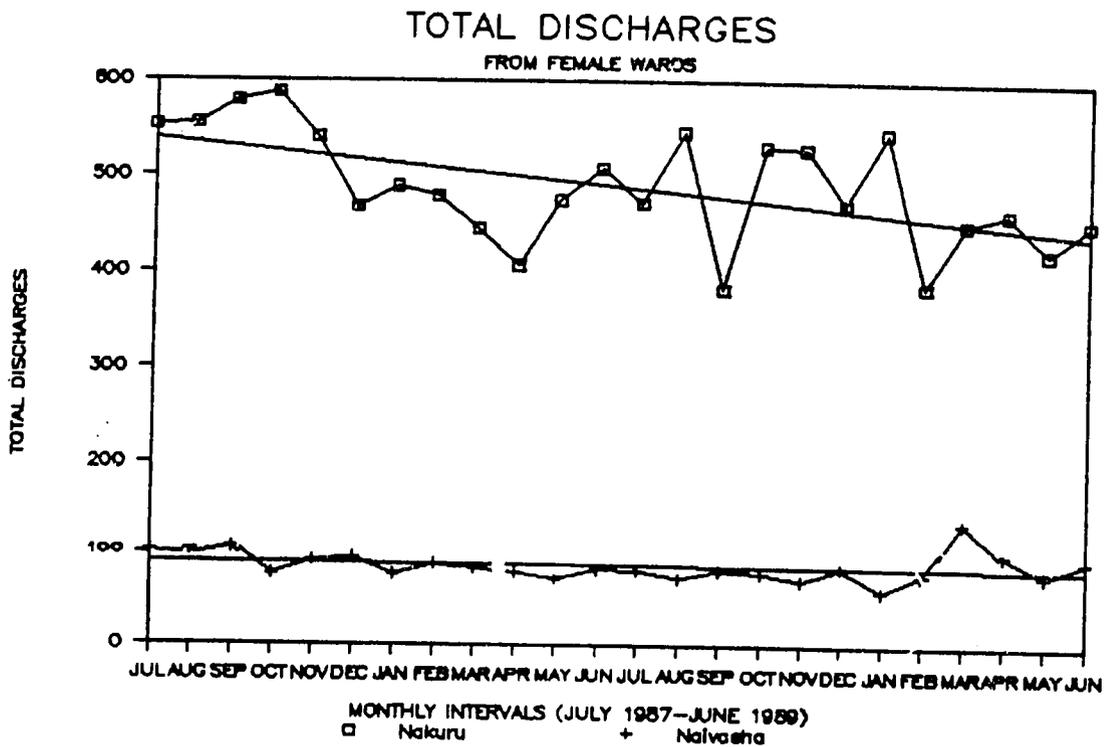


FIGURE 3

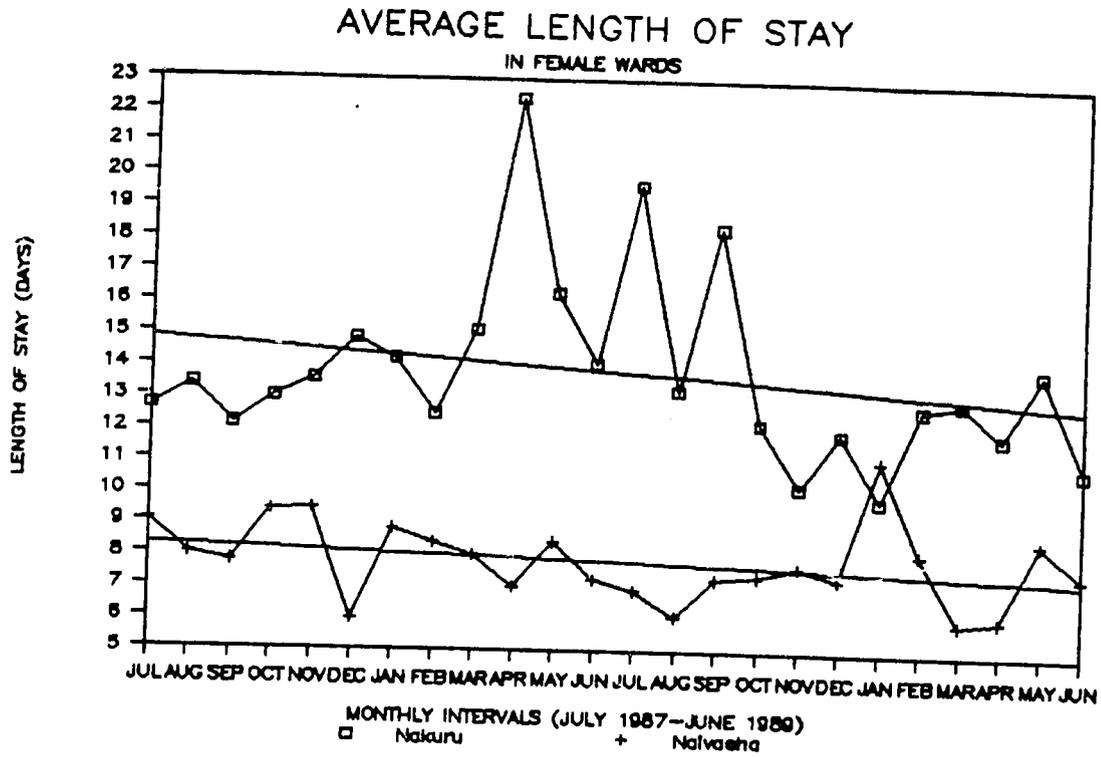


FIGURE 4

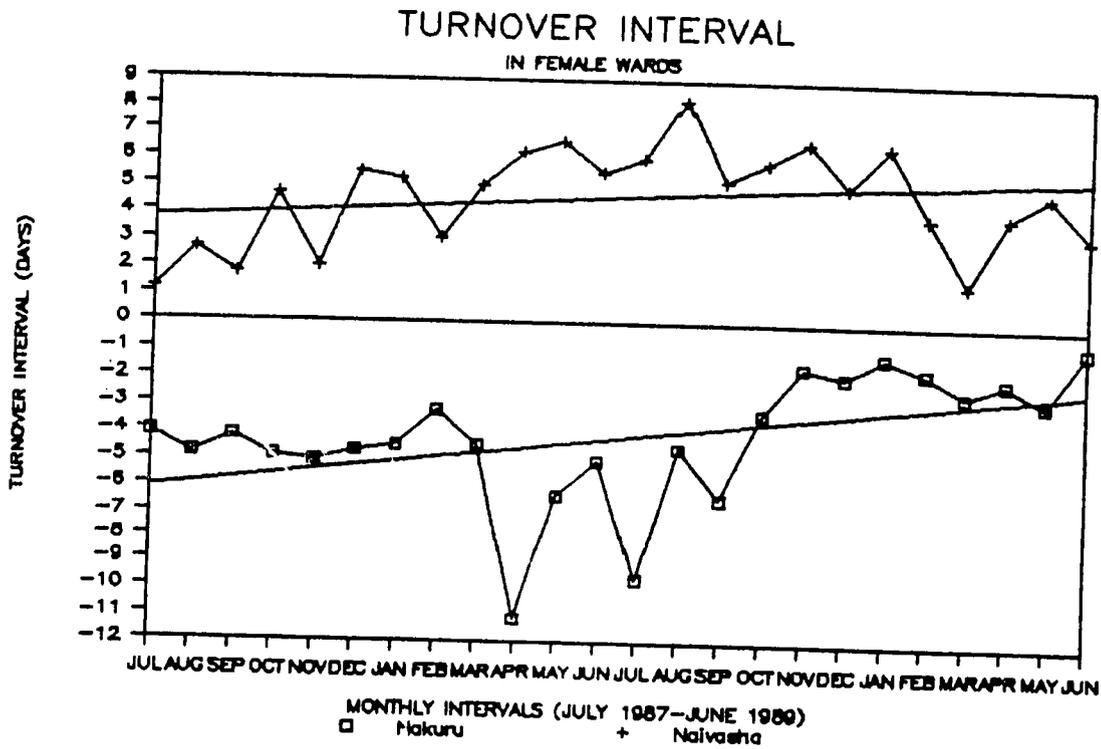


FIGURE 5

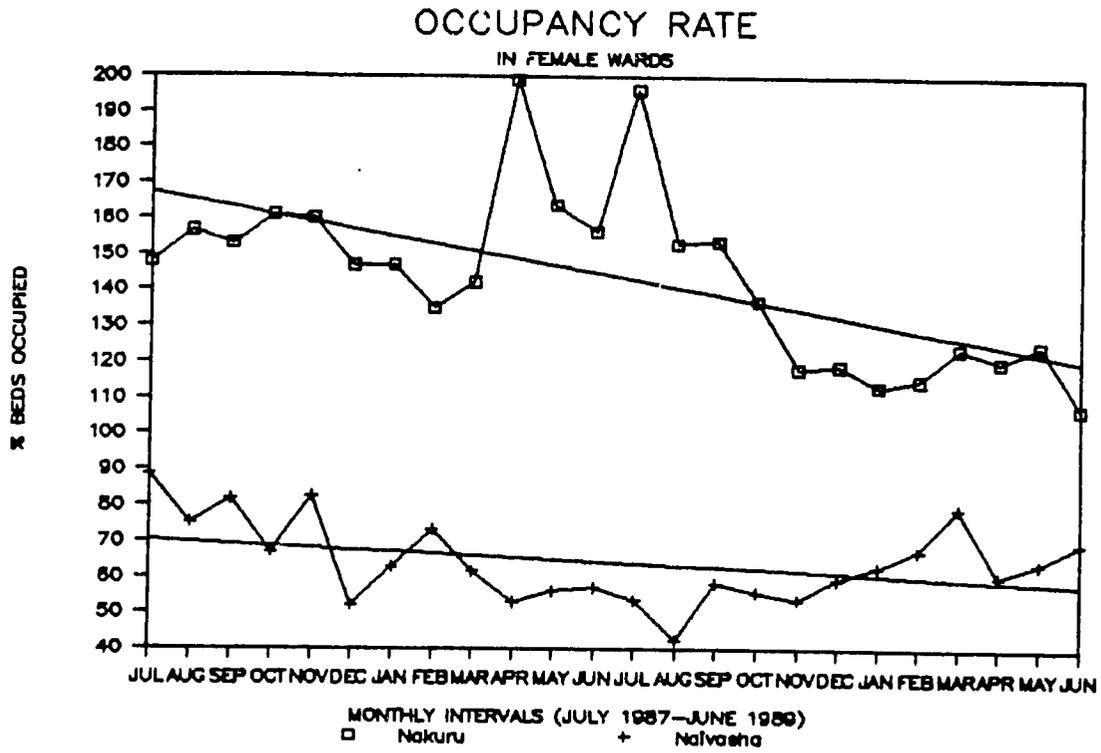


FIGURE 6

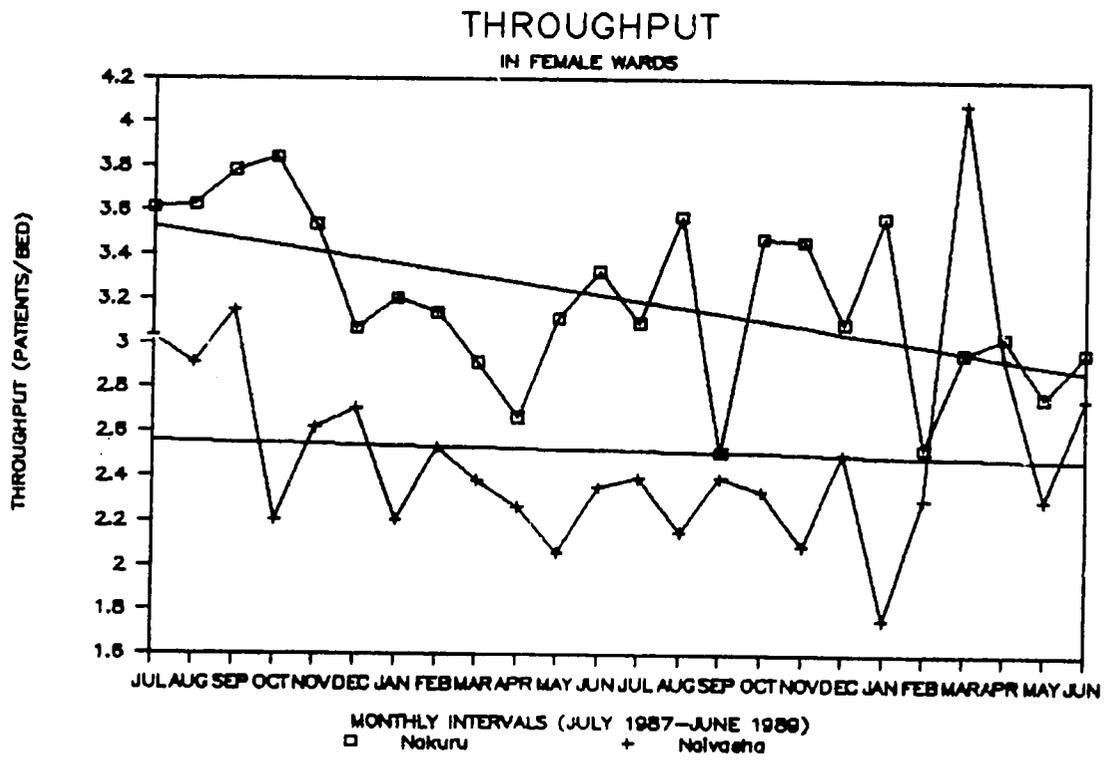


FIGURE 7

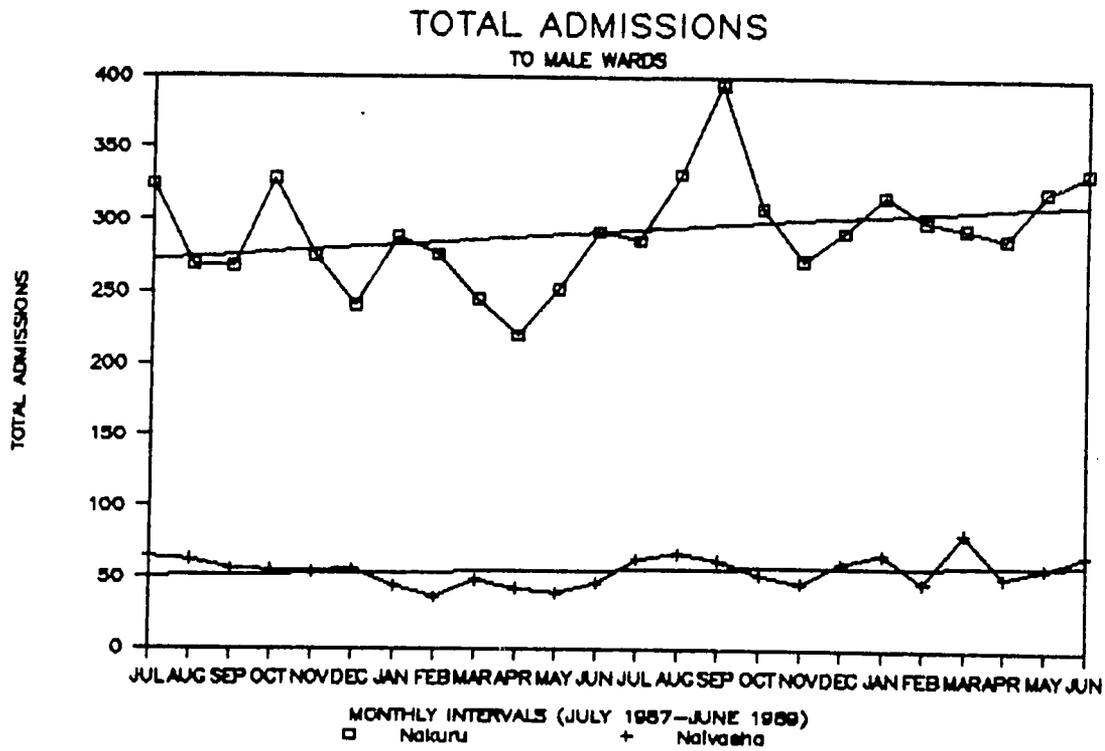


FIGURE 8

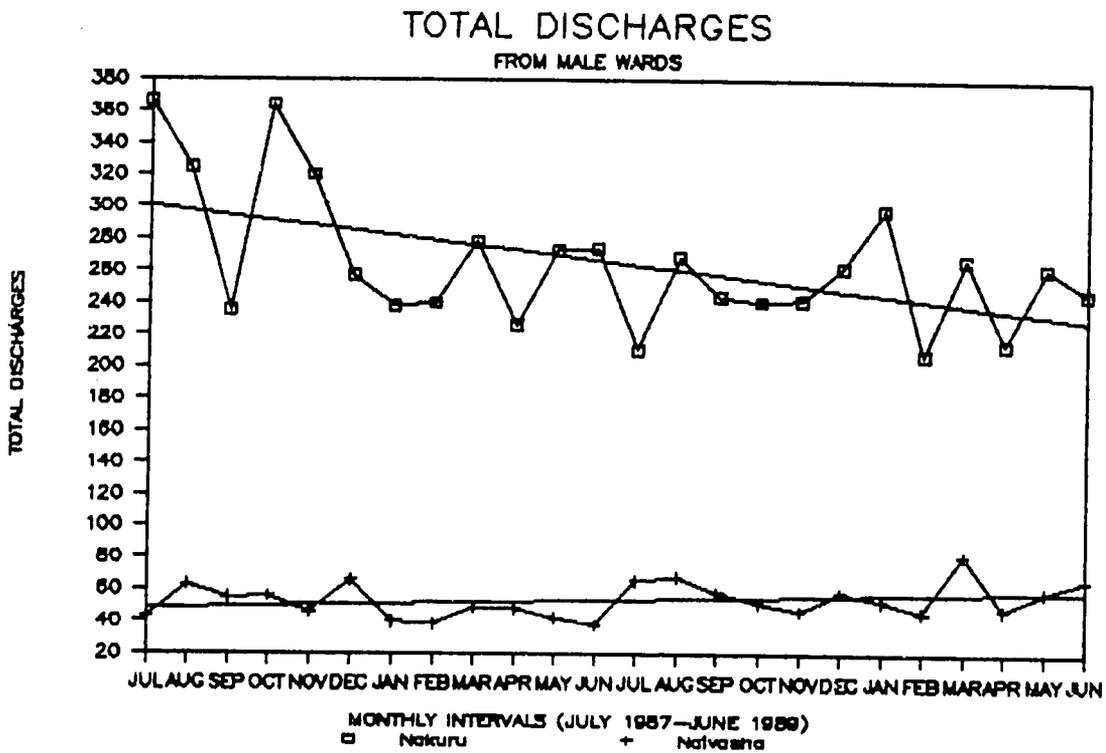


FIGURE 9

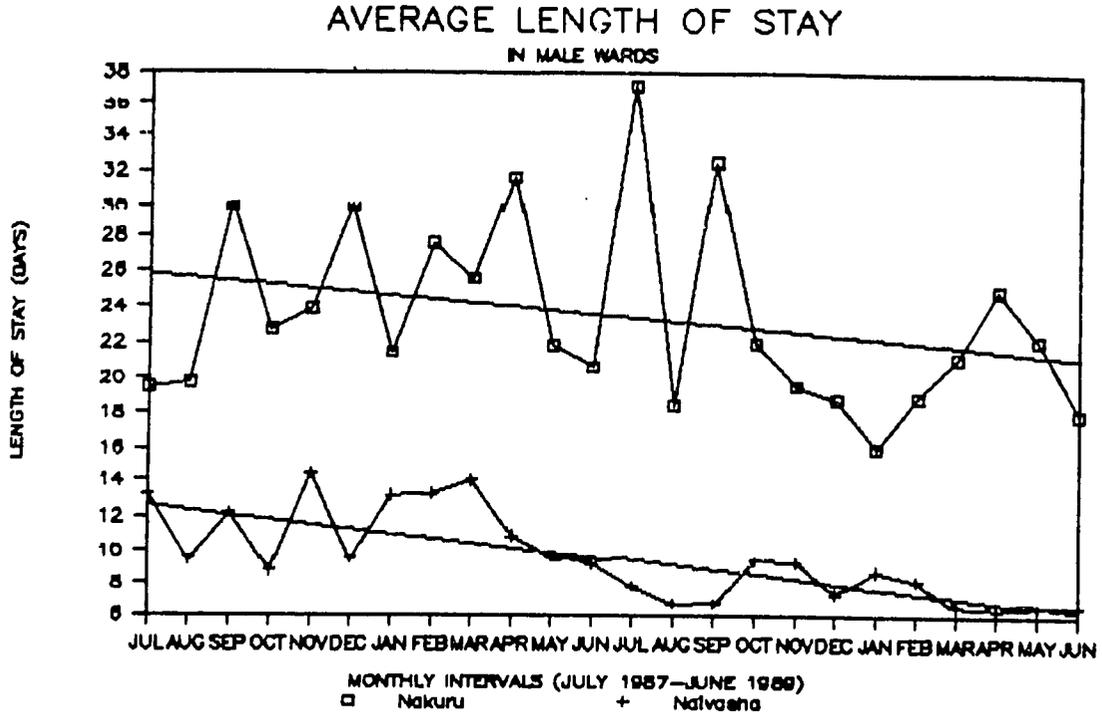


FIGURE 10

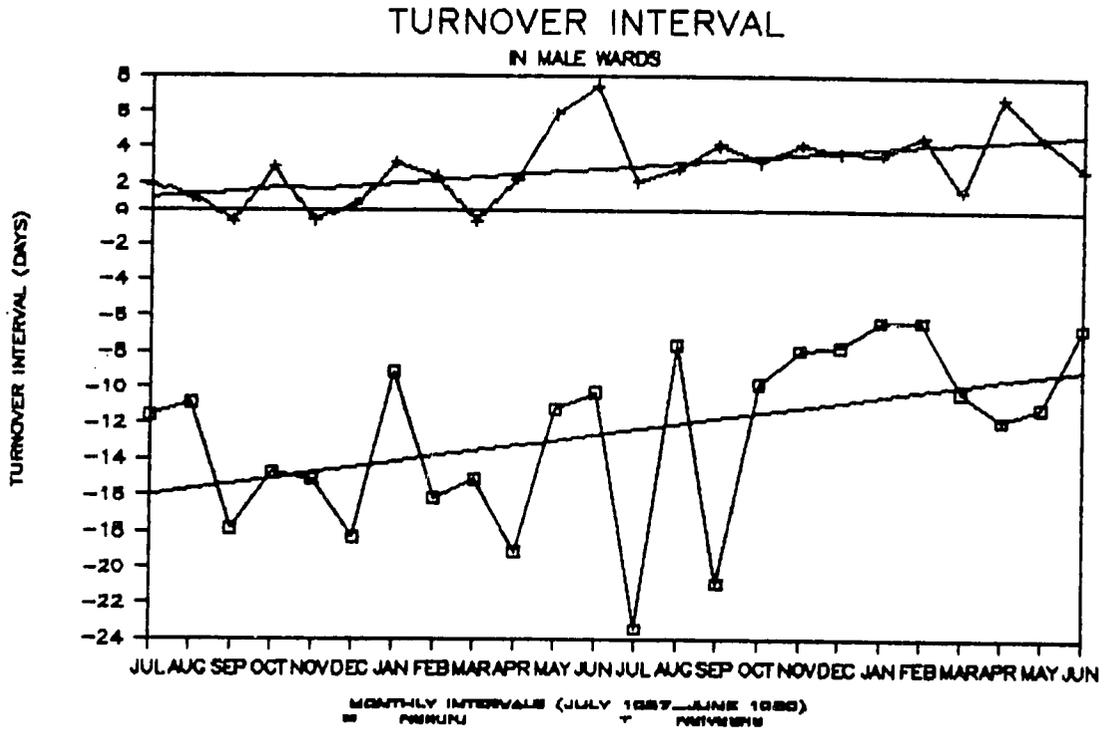


FIGURE 11

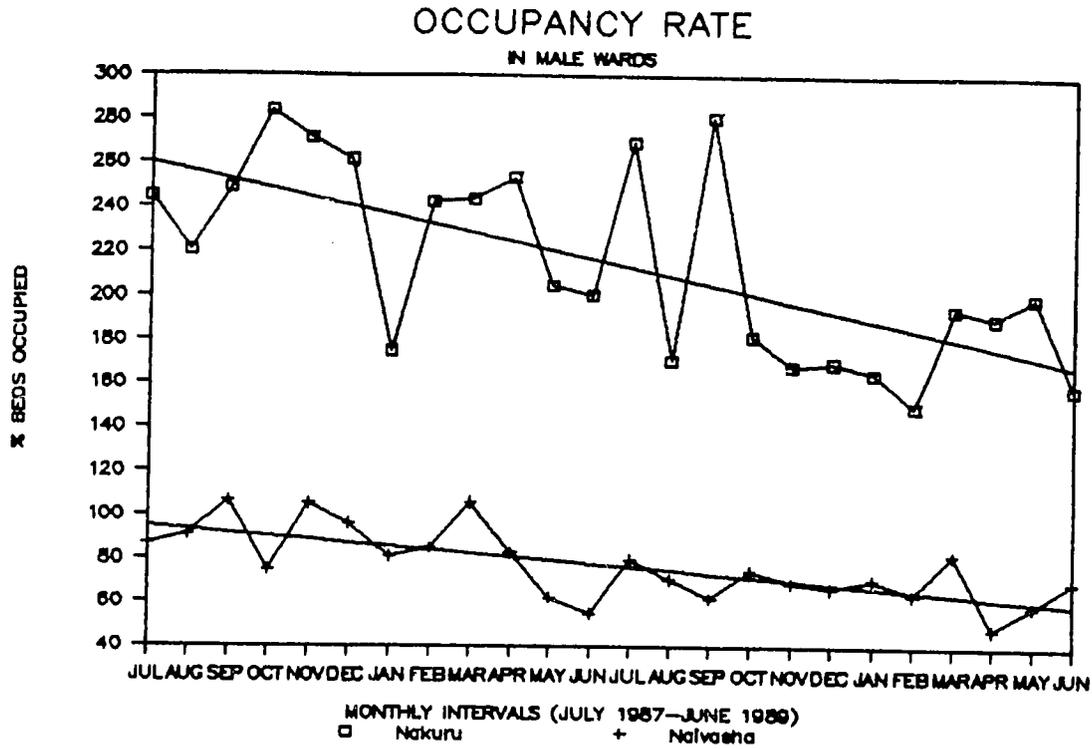


FIGURE 12

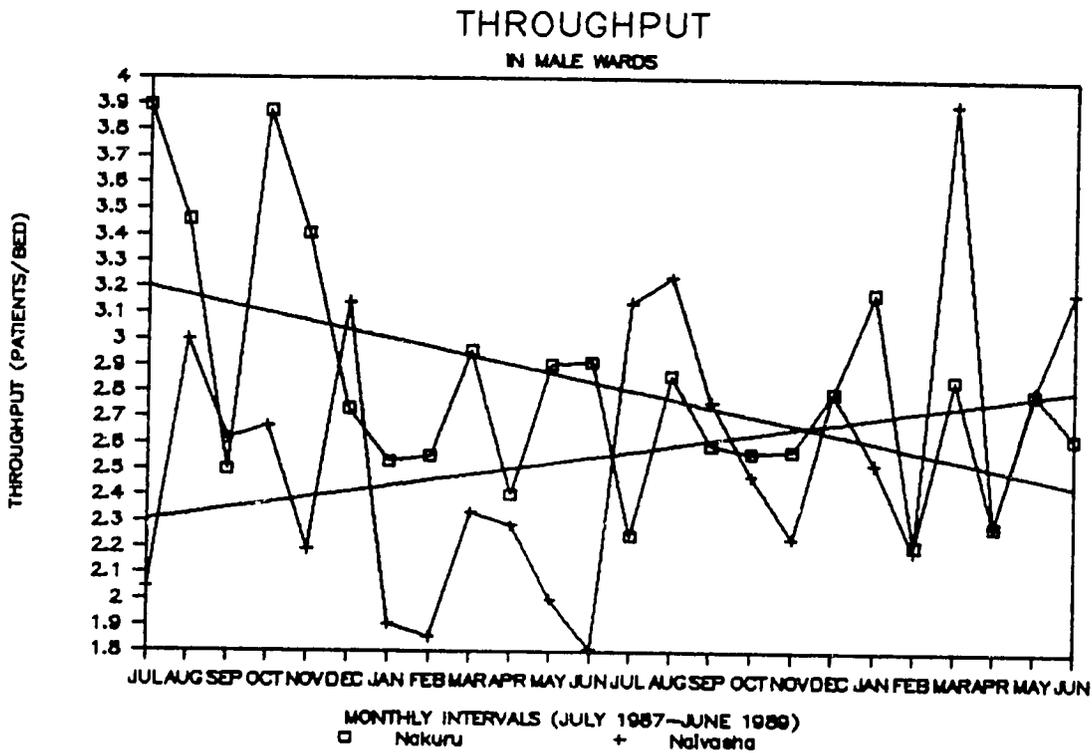


FIGURE 13

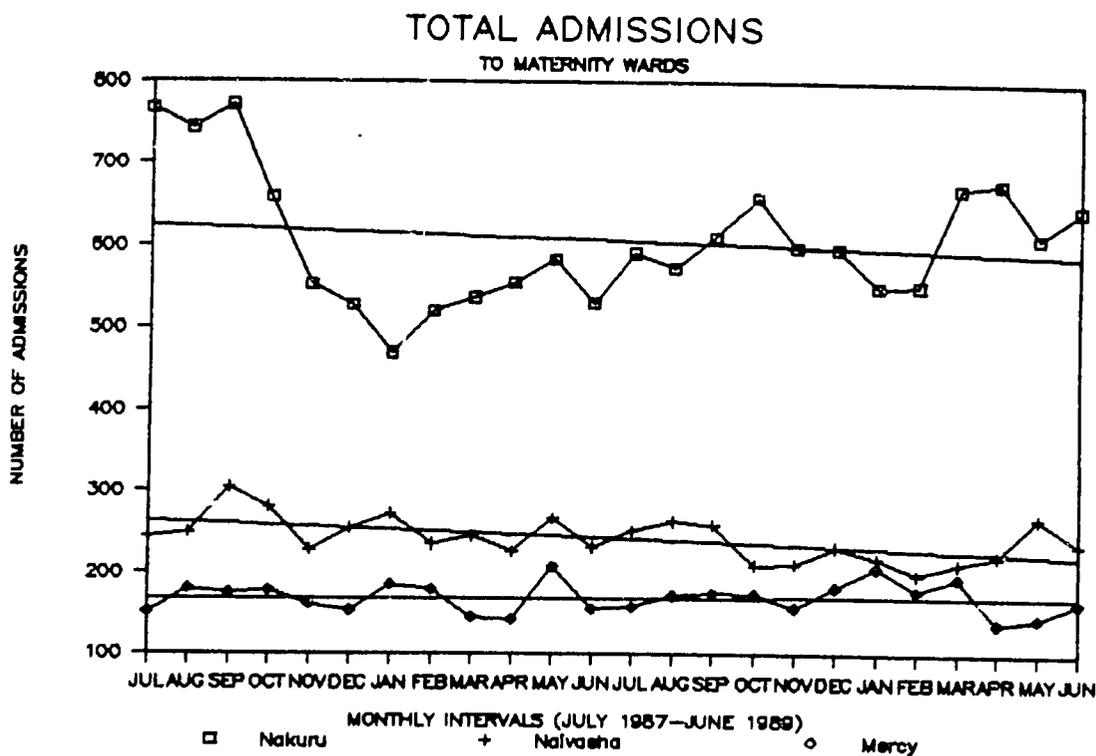


FIGURE 14

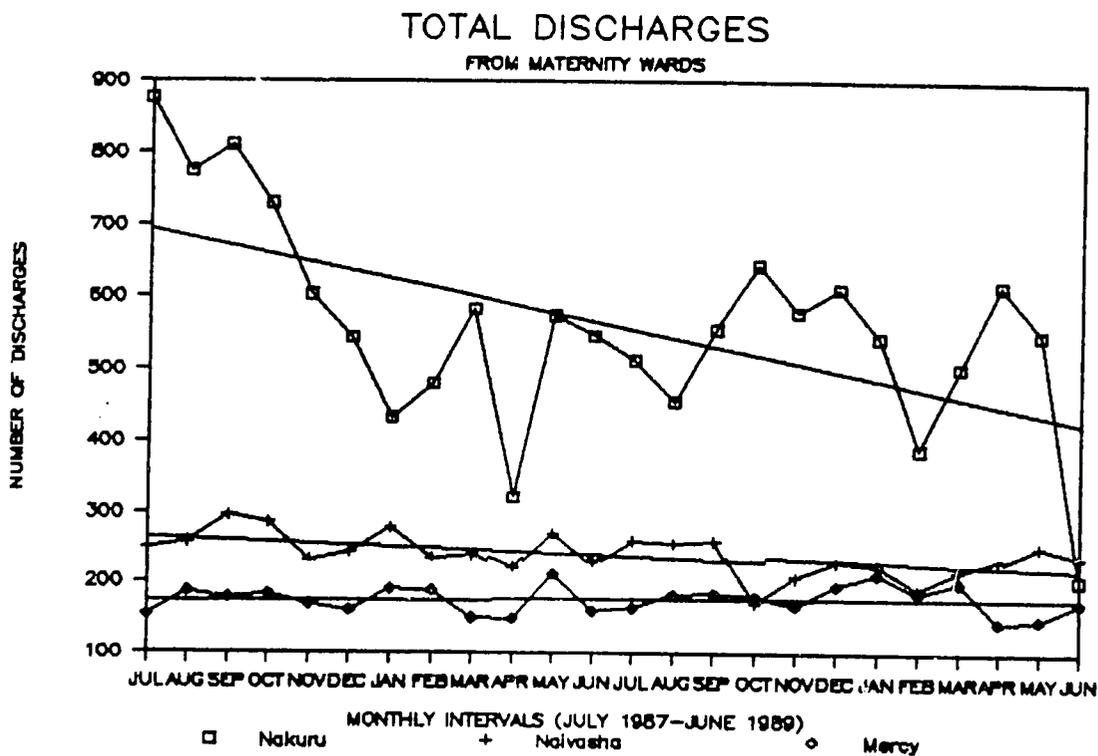


FIGURE 15

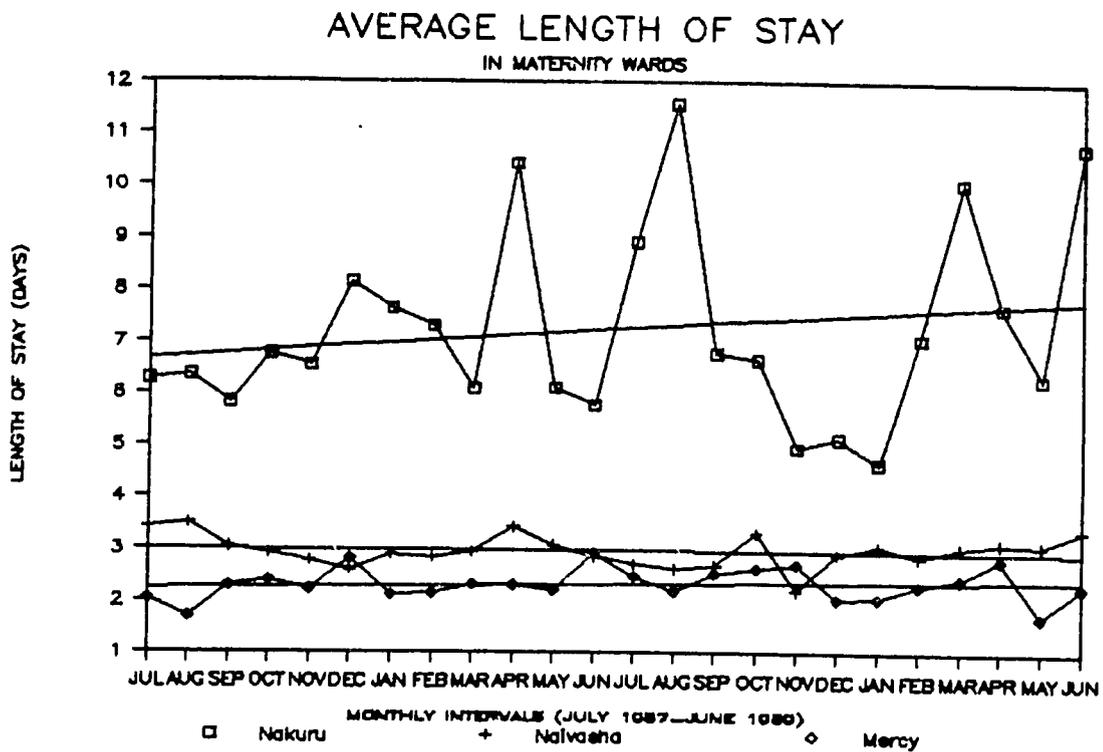


FIGURE 16

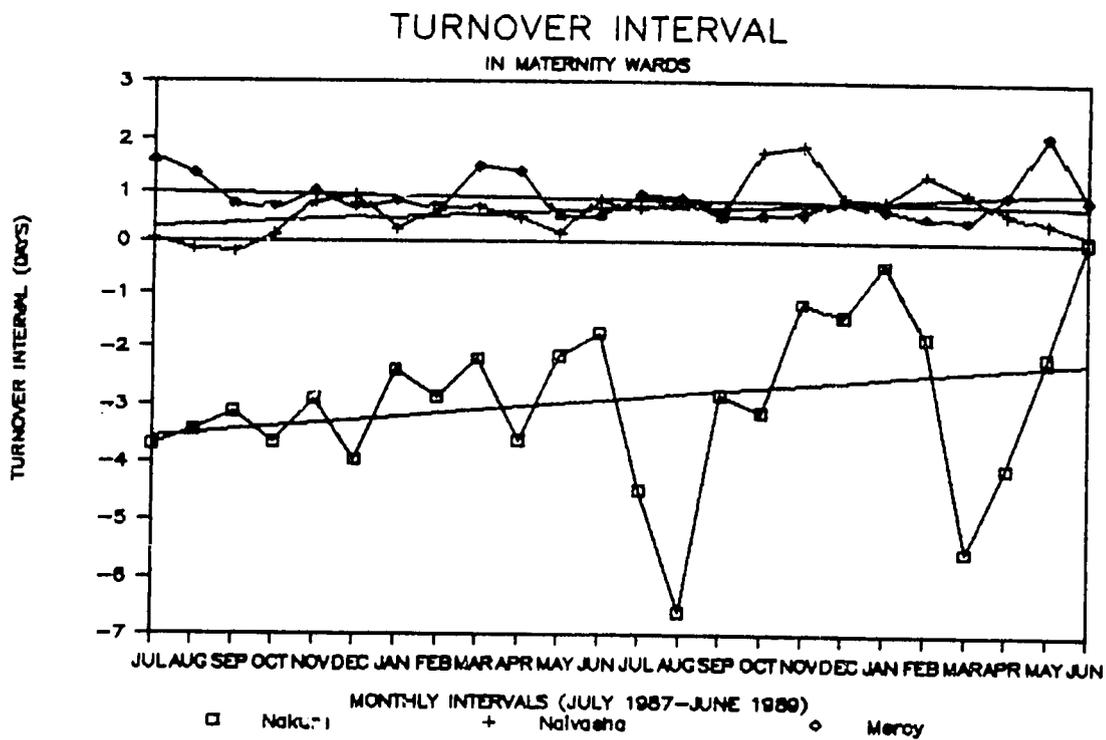


FIGURE 17

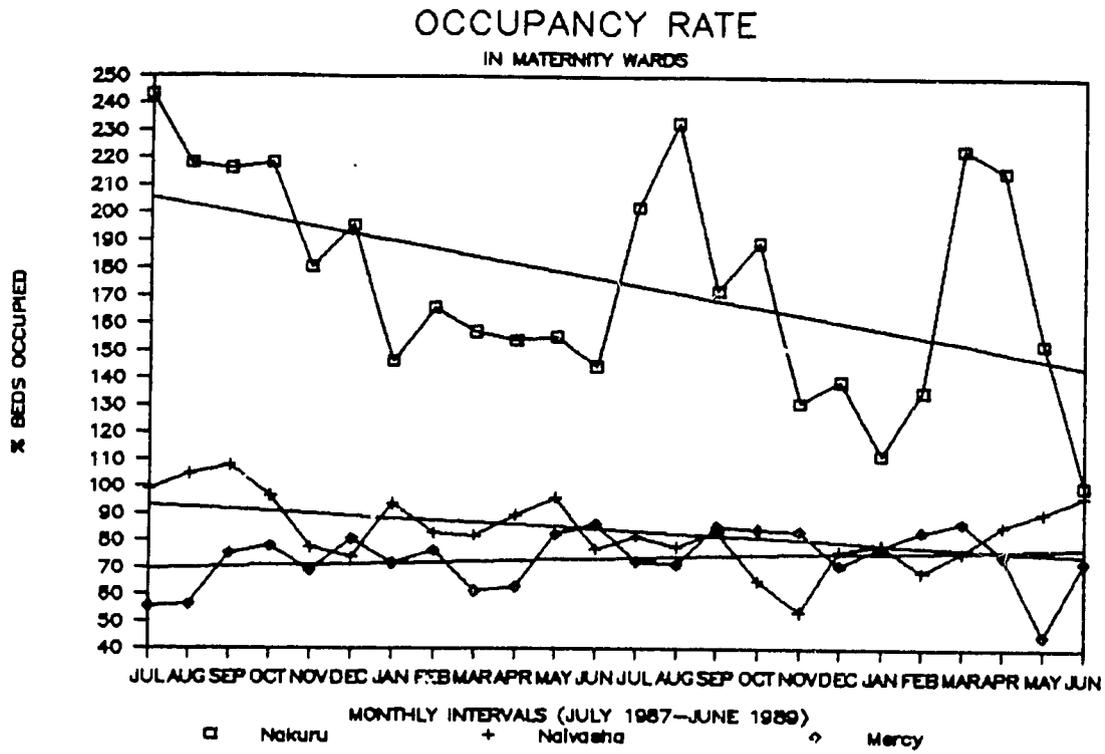


FIGURE 18

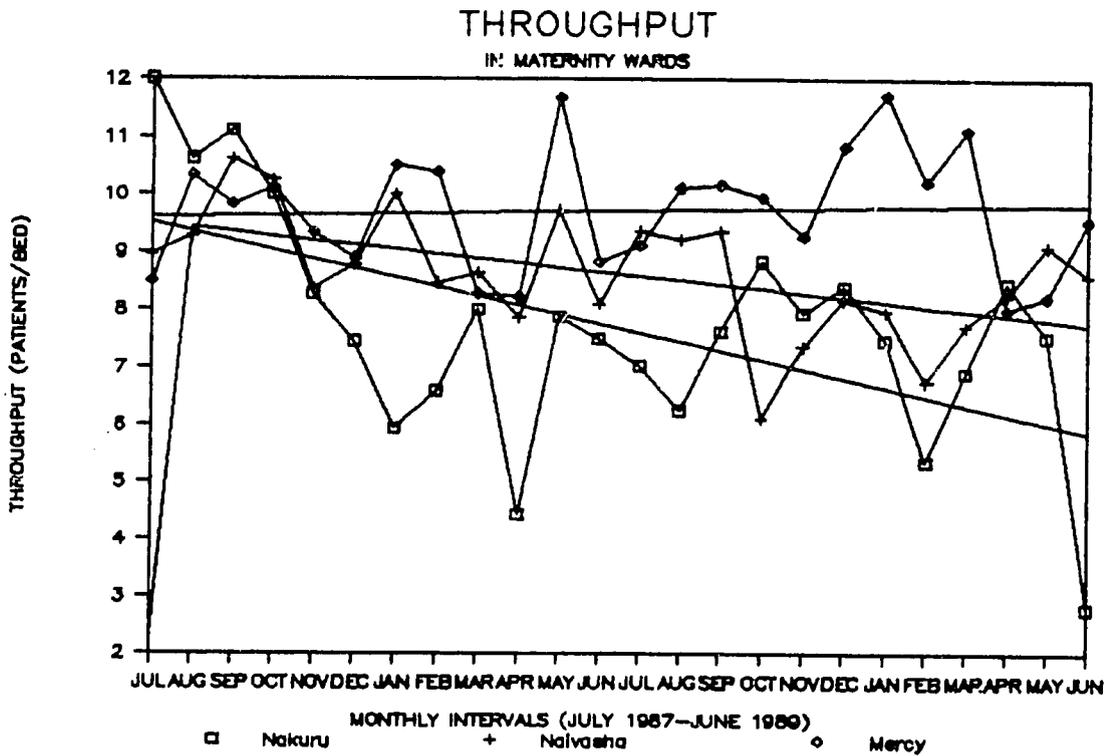


FIGURE 19

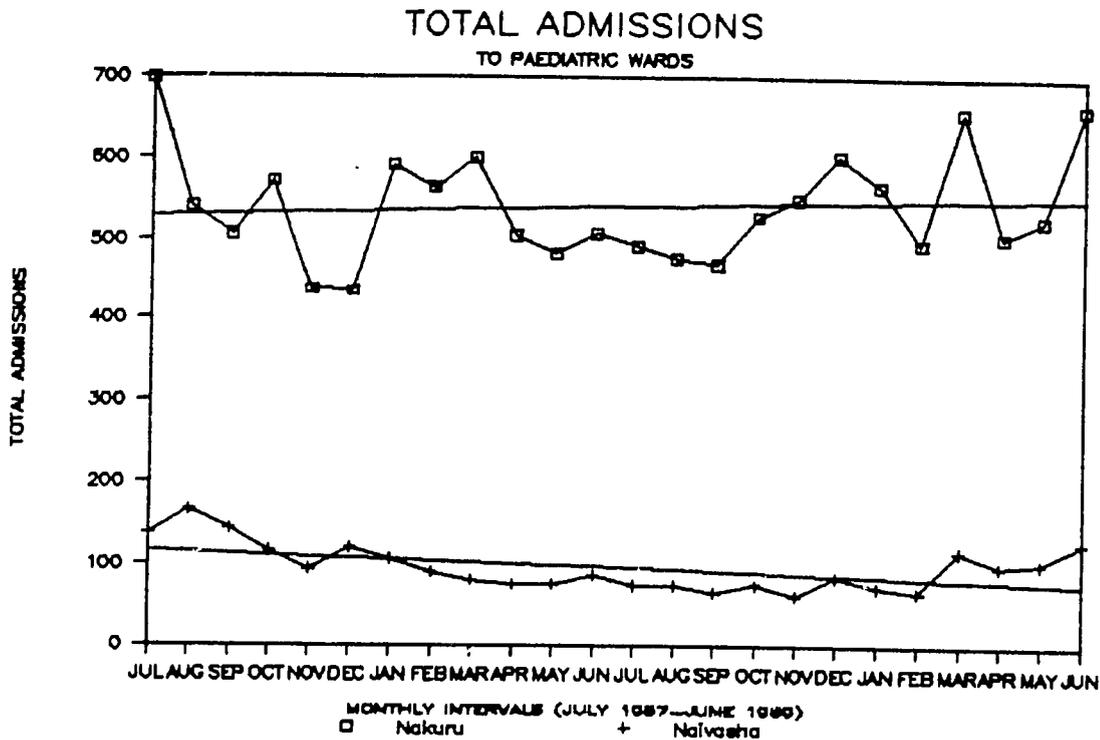


FIGURE 20

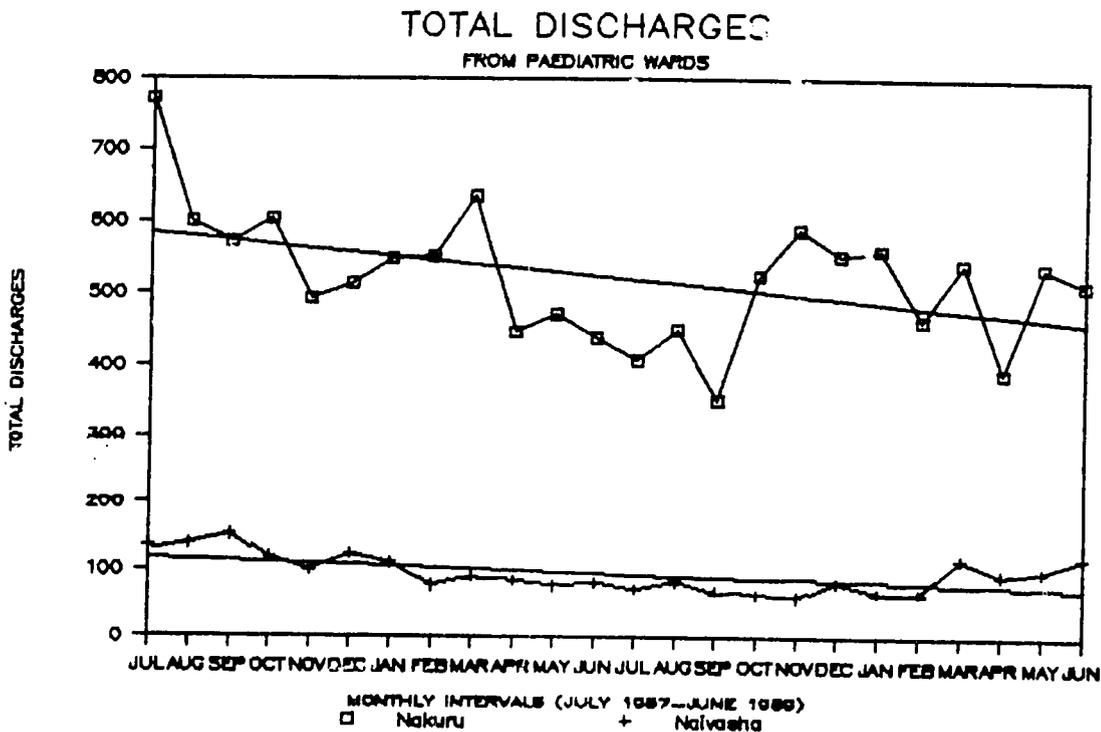


FIGURE 21

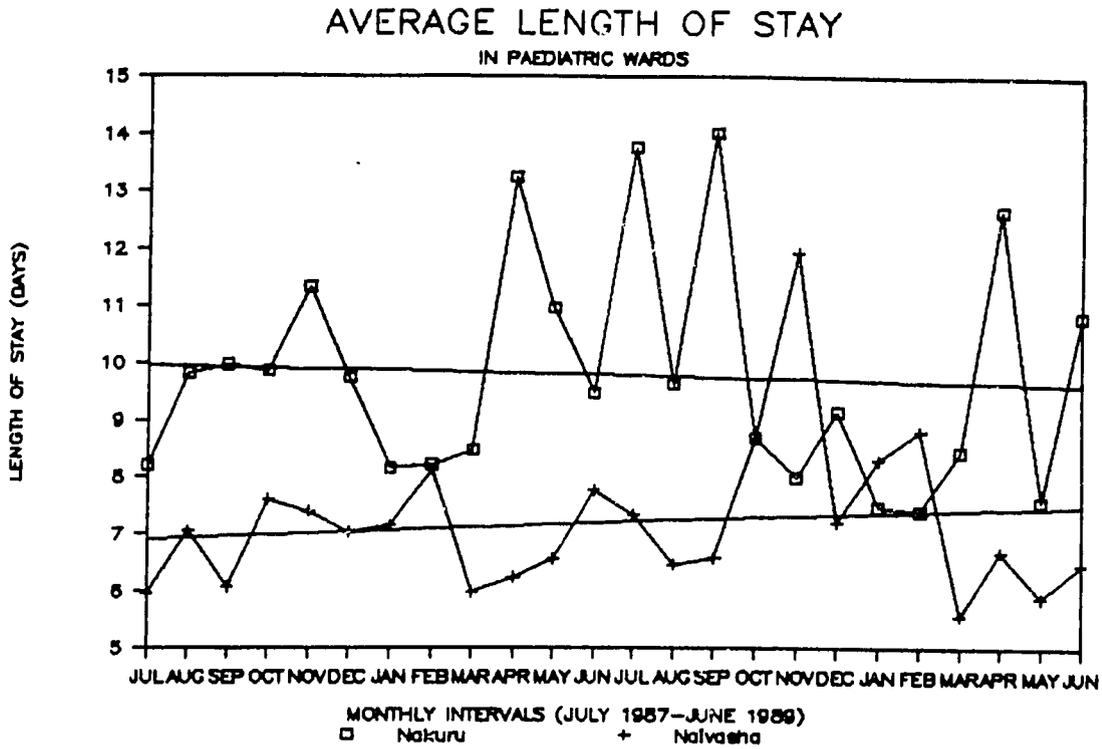


FIGURE 22

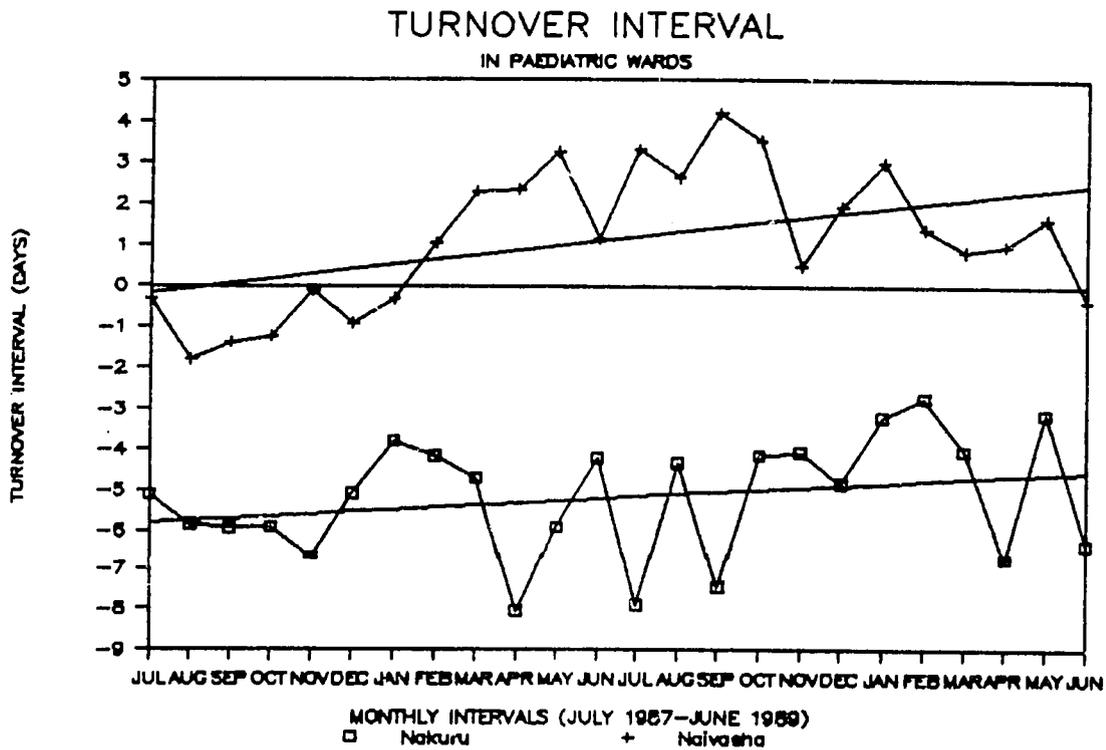


FIGURE 23

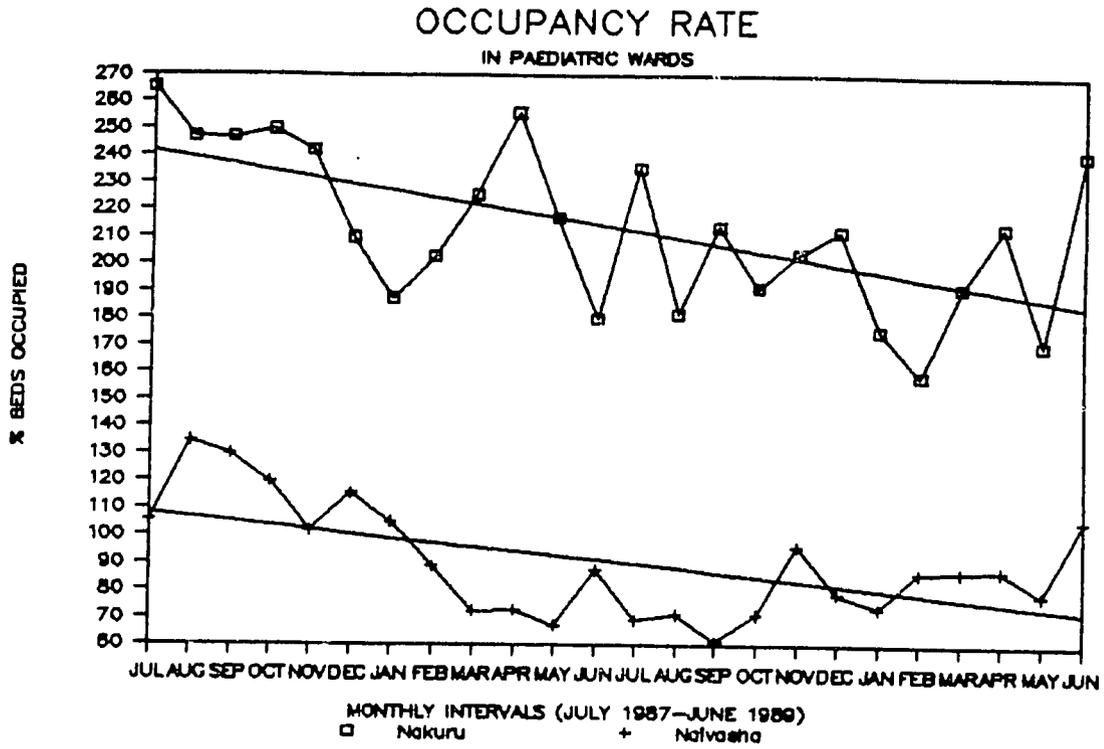


FIGURE 24

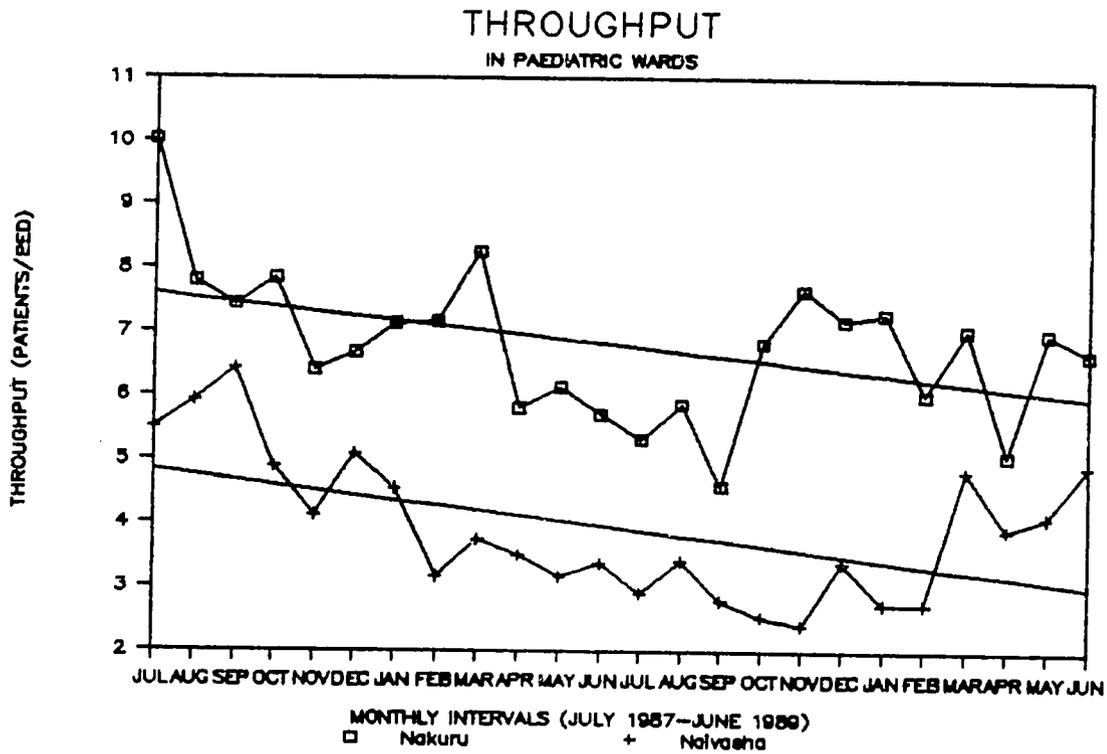


FIGURE 25

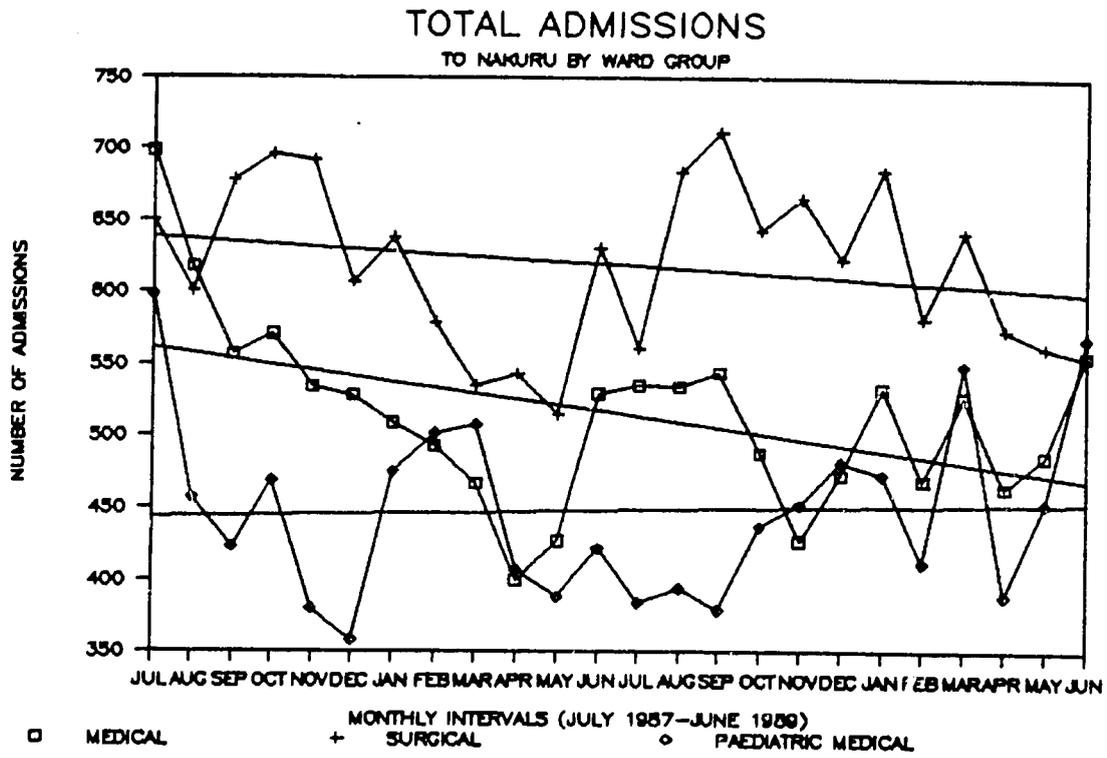


FIGURE 26

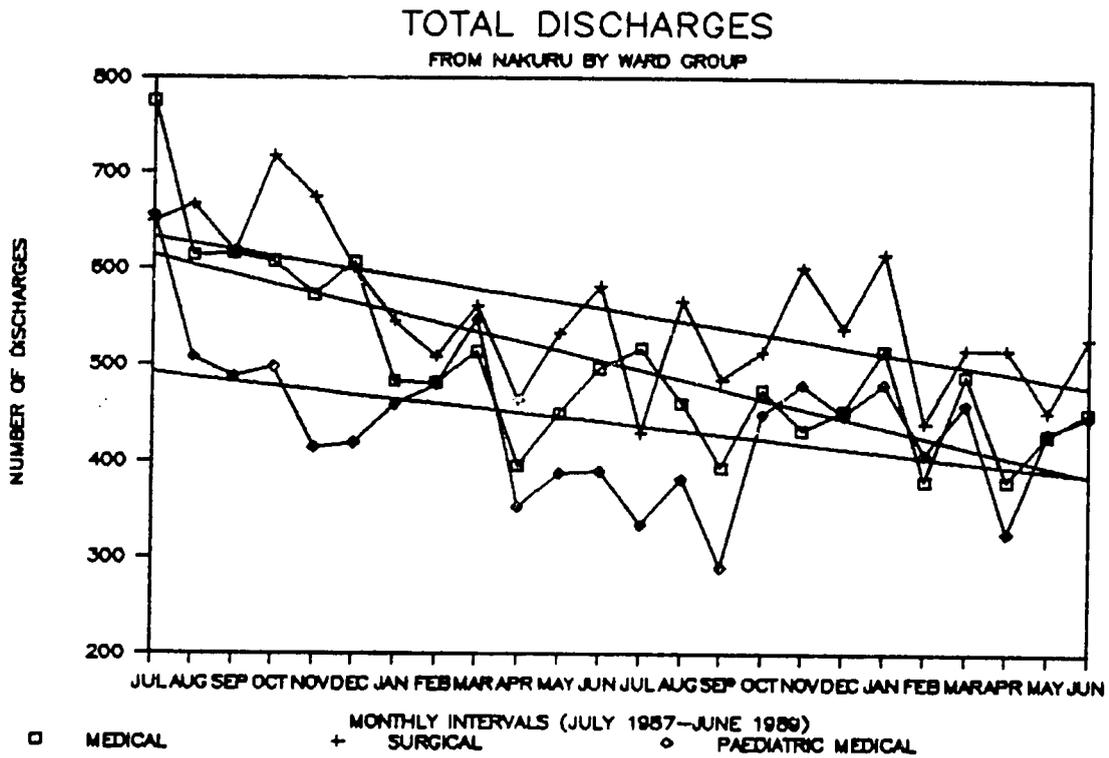


FIGURE 27

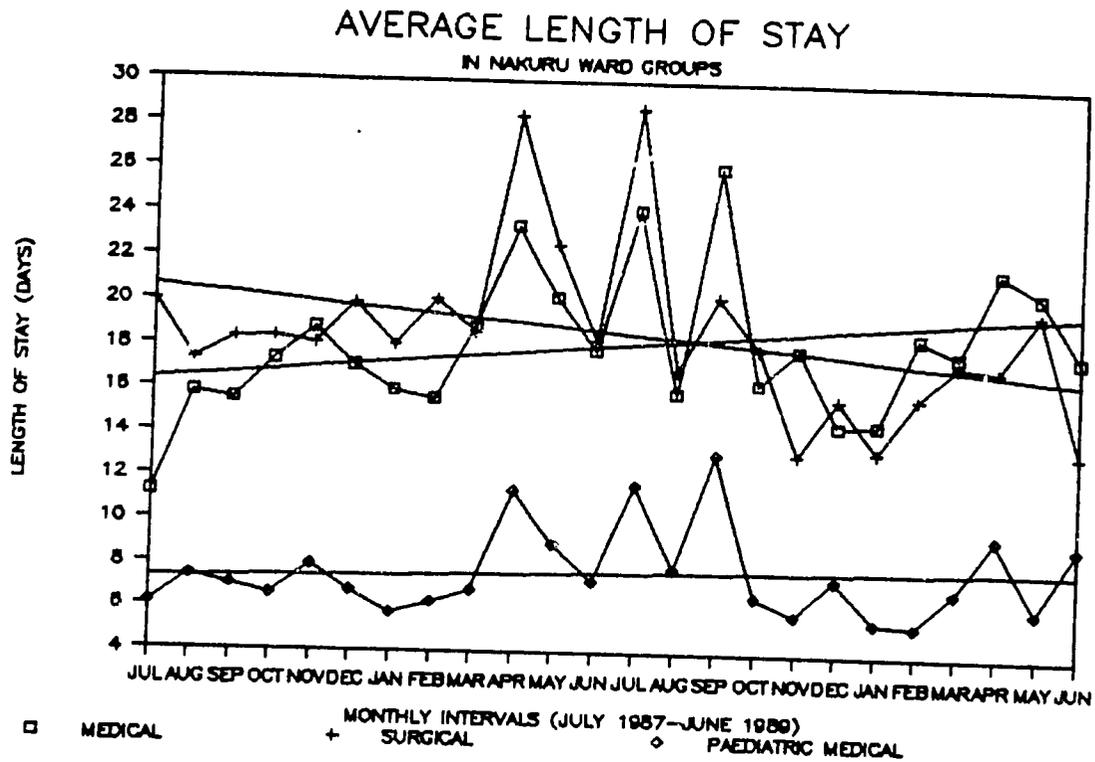


FIGURE 28

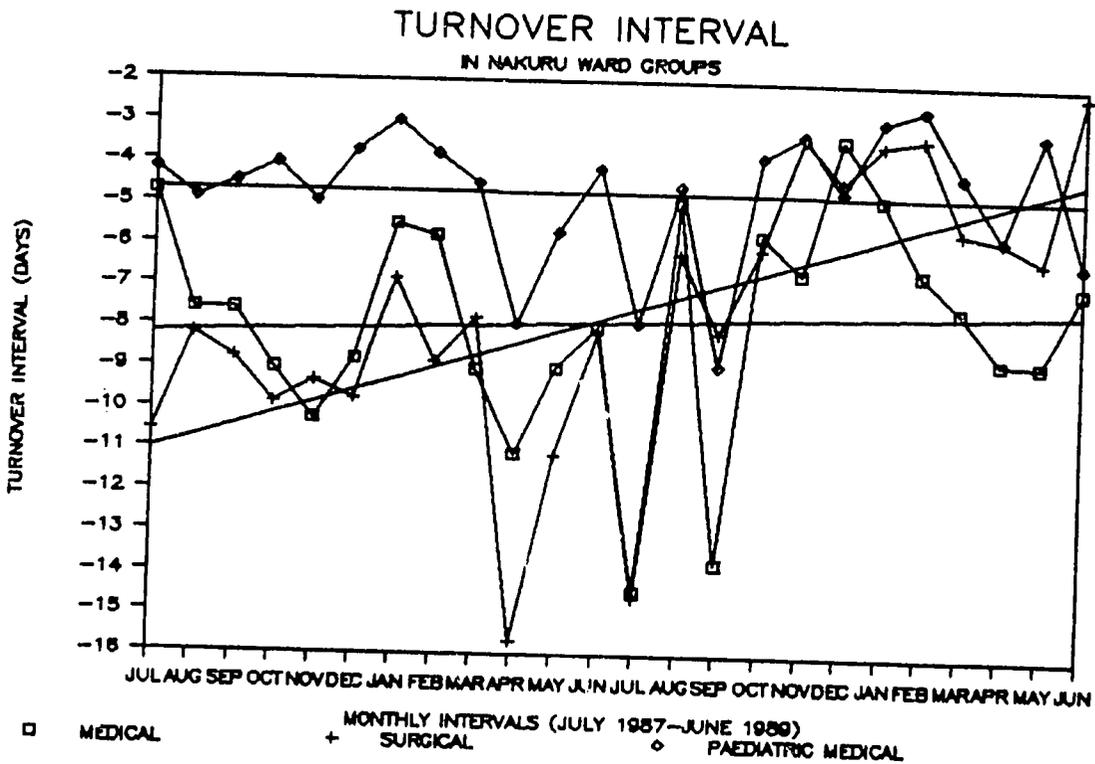


FIGURE 29

OCCUPANCY RATE
IN NAKURU WARD GROUPS

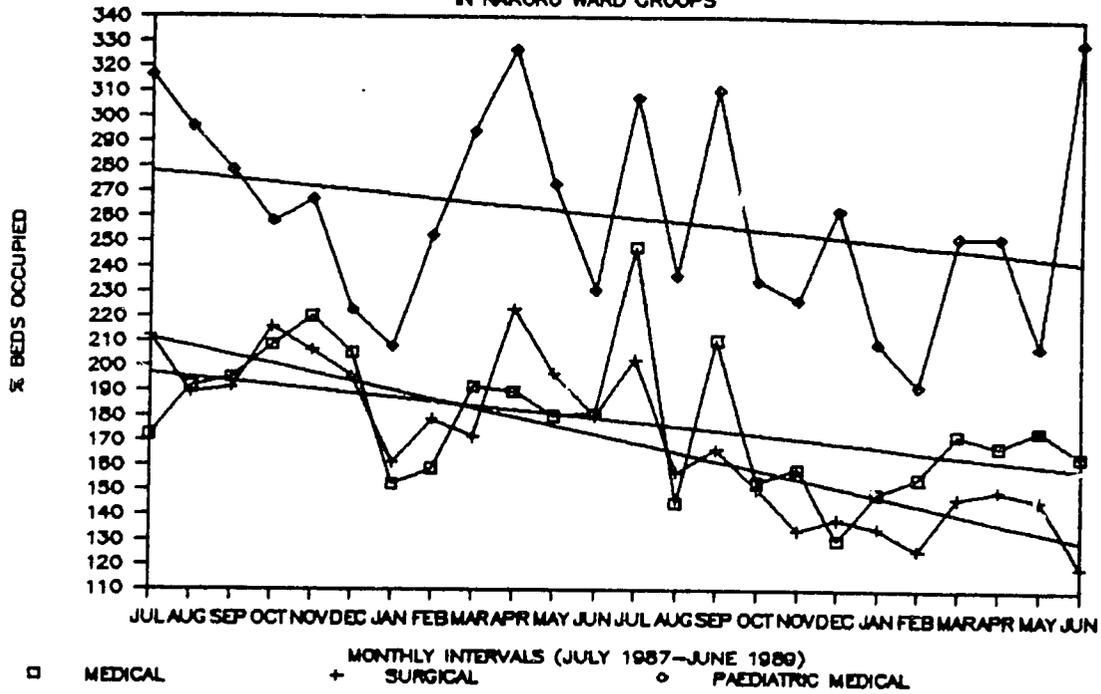
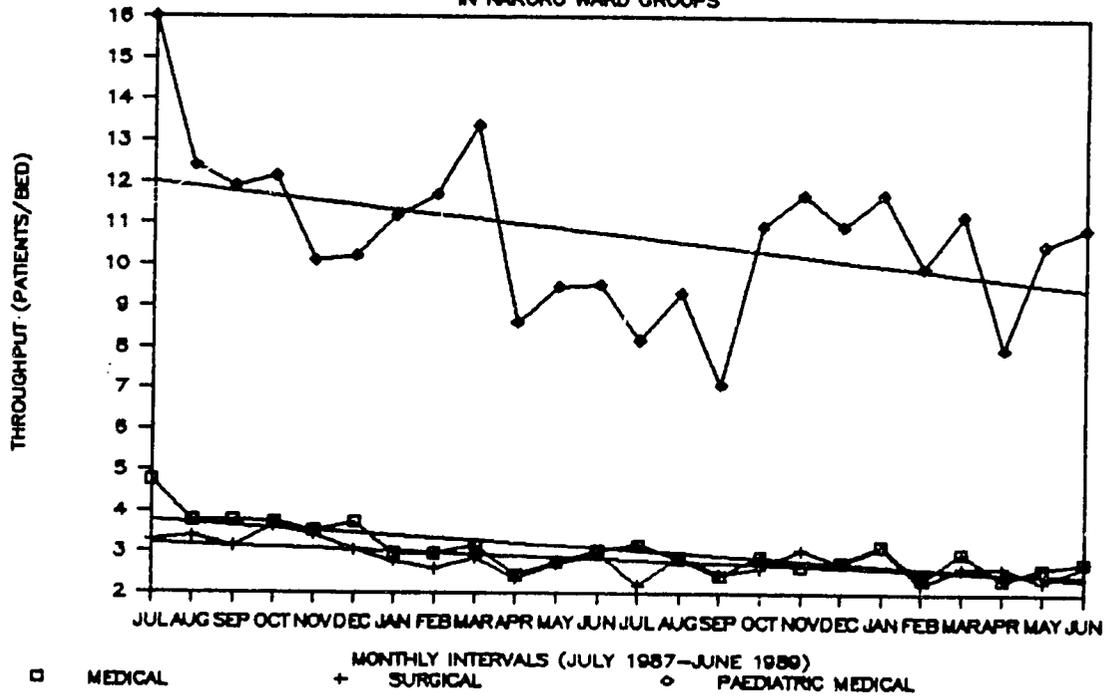


FIGURE 30

THROUGHPUT
IN NAKURU WARD GROUPS



INPATIENT MORBIDITY CLASSIFICATION FOR NAKURU PROVINCIAL HOSPITAL

Inpatient Morbidity Classification by Disease Groups	Inpatient Ward										TOTAL	
	Female				Male				Paediatric			
	#	%	#	%	#	%	#	%	#	%	#	%
0 Cardiovascular System												
4 angina pectoris	1	0.2			1	0.1					2	0.1
4 hypertension	21	3.8			22	2.9					43	1.4
4 pulmonary oedema					12	1.6					12	0.4
4 RHD	6	1.1			5	0.7					11	0.4
4 shock							1	0.1			1	0.0
4 thyrotoxic heart	1	0.2									1	0.0
5 cardiomyopathy	3	0.5									3	0.1
5 coronary cardiac failure	34	6.1	1	0.2	33	4.3					68	2.2
5 hypertensive stroke	3	0.5			5	0.7					8	0.3
0 Respiratory System												
3 pharyngitis	1	0.2			1	0.1					2	0.1
4 asthma (inc. bronchial)	56	10.0			72	9.4					128	4.2
4 bronchial spasms	1	0.2									1	0.0
4 bronchitis	2	0.4			2	0.3					4	0.1
4 collapsed lungs							1	0.1			1	0.0
0 Gastrointestinal Tract												
1 abdominal pain					1	0.1	2	0.3			3	0.1
1 diarrhoea and vomiting	3	0.5			2	0.3					5	0.2
1 enterocolitis							1	0.1			1	0.0
1 gastritis					8	1.0					8	0.3
1 gastroenteritis	22	3.9			22	2.9	2	0.3			46	1.5
2 dehydration	4	0.7									4	0.1
3 duodenal ulcer	31	5.5	16	3.7	28	3.7	17	2.5			92	3.0
3 hepatitis	6	1.1	1	0.2	4	0.5					11	0.4
3 rectal prolapse							2	0.3	3	0.5	5	0.2
4 anal fistula							5	0.7			5	0.2
4 hepatosplenomegally	4	0.7			10	1.3	1	0.1			15	0.5
4 jaundice	1	0.2			5	0.7	2	0.3	2	0.3	10	0.3
5 ascites	5	0.9			4	0.5					9	0.3
5 cyrrhosis					1	0.1					1	0.0
5 hirshpring disease									2	0.3	2	0.1
5 oedema	2	0.4			1	0.1	1	0.1			4	0.1
0 Gynaecological												
3 rape			1	0.2							1	0.0
3 salpingitis	1	0.2	13	3.0							14	0.5
4 dysfunctional uterine bleeding	3	0.5									3	0.1
0 Obstetric												
4 postpartum haemorrhage			5	1.1							5	0.2

(continued)

TABLE 1 (cont.)

INPATIENT MORBIDITY CLASSIFICATION FOR NAKURU PROVINCIAL HOSPITAL (continued)

Inpatient Morbidity Classification by Disease Groups	Inpatient Ward										TOTAL	
	Female		Male		Paediatric		Surgical		Surgical			
	#	%	#	%	#	%	#	%	#	%	#	%
0 Infectious												
2 amoebic colitis	2	0.4					1	0.1			3	0.1
2 malaria	80	14.3			78	10.2					158	5.2
2 tapeworm									3	0.5	3	0.1
3 angina (Ludwings)							1	0.1	2	0.3	3	0.1
3 balanitis									3	0.5	3	0.1
3 cellulitis	2	0.4	16	3.7			33	4.9	25	4.2	76	2.5
3 cerebral malaria	24	4.3			54	7.0					78	2.6
3 dysentery	6	1.1			16	2.1					22	0.7
3 lymphangitis							1	0.1	1	0.2	2	0.1
3 otitis media (ear infection)							1	0.1	1	0.2	2	0.1
3 pneumonia	35	6.3			76	9.9			1	0.2	112	3.7
3 tonsillitis			7	1.6			6	0.9	1	0.2	14	0.5
3 upper respiratory tract	4	0.7			6	0.8	1	0.1	4	0.7	15	0.5
3 urinary tract infection	2	0.4	2	0.5	7	0.9	4	0.6	1	0.2	16	0.5
4 broncho pneumonia							2	0.3			2	0.1
4 meningitis					4	0.5					4	0.1
4 orchitis					2	0.3	7	1.0			9	0.3
4 typhoid	1	0.2			2	0.3					3	0.1
5 HIV	1	0.2			4	0.5					5	0.2
5 KOCHS	1	0.2			5	0.7					6	0.2
5 osteomyelitis			11	2.5			1	0.1	13	2.2	25	0.8
5 pleural effusion	2	0.4			2	0.3	1	0.1			5	0.2
5 pulmonary tuberculosis	12	2.1	1	0.2	27	3.5					40	1.3
5 pyrexia unknown origin							1	0.1			1	0.0
5 septic sores							2	0.3			2	0.1
5 septicaemia					1	0.1					1	0.0
5 tetanus	1	0.2			2	0.3	1	0.1			4	0.1
0 Malignancies												
4 bilateral nose polyps							7	1.0			7	0.2
4 breast lumps	1	0.2					1	0.1			2	0.1
4 goitre	2	0.4	4	0.9			1	0.1			7	0.2
4 haemorrhoids	2	0.4	3	0.7			4	0.6			9	0.3
4 hepatoma					4	0.5	2	0.3			6	0.2
5 acute lymphocitic leukemia					3	0.4					3	0.1
5 anaplastoma							1	0.1			1	0.0
5 bone tumour	1	0.2			1	0.1	2	0.3			4	0.1
5 cancer			21	4.8	8	1.0	46	6.8			75	2.5
5 chronic myeloid leukemia					2	0.3					2	0.1
5 lymphadenopathy					1	0.1			4	0.7	5	0.2
5 lymphoma	1	0.2			4	0.5			1	0.2	6	0.2
5 space occupying lesion			2	0.5	2	0.3	2	0.3	1	0.2	7	0.2

(continued)

TABLE 1 (cont.)

INPATIENT MORBIDITY CLASSIFICATION FOR NAKURU PROVINCIAL HOSPITAL (continued)

Inpatient Morbidity Classification by Disease Groups	Inpatient Ward											
	Female				Male				Paediatric		TOTAL	
	Medical	Surgical	Medical	Surgical	Medical	Surgical	Surgical	Surgical	#	%	#	%
0 Operations												
4 abscess	20	3.6	72	16.4	1	0.1	19	2.8	40	7.3	155	5.1
4 foreign body			12	2.7			25	3.7	34	5.8	71	2.3
4 kikuyu bursa			2	0.5							2	0.1
4 lipoma							10	1.5	1	0.2	11	0.4
4 paraphymosis							5	0.7	13	2.2	18	0.6
4 urethral stricture							24	3.5			24	0.8
5 abdominal mass					1	0.1	10	1.5			11	0.4
5 acute abdomen							2	0.3			2	0.1
5 amputation			1	0.2			1	0.1			2	0.1
5 ano stenosis									3	0.5	3	0.1
5 appendicitis	2	0.4	11	2.5			17	2.5			30	1.0
5 benign prostate hypertrophy					1	0.1	41	6.0			42	1.4
5 colostomy			1	0.2			2	0.3			3	0.1
5 endometrial polyp			1	0.2							1	0.0
5 hernia			1	0.2			35	5.2	21	3.6	57	1.9
5 hydrocele							7	1.0	1	0.2	8	0.3
5 obstruction (inc. intestinal)			16	3.7	4	0.5	30	4.4	27	4.6	77	2.5
5 peritonitis			4	0.9			2	0.3			6	0.2
5 pyloric stenosis			1	0.2	1	0.1			1	0.2	3	0.1
5 undescended testes							4	0.6	1	0.2	5	0.2
0 Psychological Neurological												
3 facial palsy	2	0.4									2	0.1
3 hysteria	8	1.4			1	0.1	1	0.1			10	0.3
4 anxiety	5	0.9									5	0.2
4 depression			1	0.2	2	0.3					3	0.1
4 epilepsy	5	0.9			18	2.3	2	0.3			25	0.8
4 febrile convulsions	1	0.2			3	0.4					4	0.1
5 decerebrate rigidity	1	0.2			1	0.1					2	0.1
5 duchene dystrophy					1	0.1					1	0.0
5 hypotian acute brain syndrome					2	0.3			2	0.3	4	0.1
5 menigocele									5	0.8	5	0.2
5 muscular dystrophy					1	0.1					1	0.0
5 narcosis					1	0.1					1	0.0
5 paralysis					1	0.1					1	0.0
5 psychosis	12	2.1			5	0.7					17	0.6
5 schitzophrenia	4	0.7									4	0.1
5 spinal bifida							1	0.1	6	1.0	7	0.2
5 trauma coma	1	0.2	2	0.5	7	0.9	2	0.3	1	0.2	13	0.4
5 upper motor neurone lesion					8	1.0					8	0.3

(continued)

TABLE 1 (cont.)

INPATIENT MORBIDITY CLASSIFICATION FOR NAKURU PROVINCIAL HOSPITAL (continued)

Inpatient Morbidity Classification by Disease Groups	Inpatient Ward										TOTAL	
	Female				Male				Paediatric			
	#	%	#	%	#	%	#	%	#	%	#	%
3 Injuries and Wounds			49	11.2	4	0.5	109	16.1	29	4.9	191	6.3
3 bites			15	3.4	1	0.1	7	1.0	5	0.8	28	0.9
3 cut							9	1.3	8	1.4	17	0.6
3 electric shock	1	0.2			3	0.4	1	0.1			5	0.2
3 laceration							2	0.3			2	0.1
3 soft tissue infection			22	5.0	2	0.3	30	4.4	8	1.4	62	2.0
4 dislocation							4	0.6	12	2.0	16	0.5
5 burns			2	0.5			33	4.9	225	38.2	260	8.6
5 fracture (#)			74	16.9			35	5.2	60	10.2	169	5.6
5 road traffic accidents			16	3.7			6	0.9	1	0.2	23	0.8
0 Blood Disorders												
3 epispadia							2	0.3			2	0.1
3 epistaxis			7	1.6			5	0.7	3	0.5	15	0.5
3 haematoma					1	0.1			2	0.3	3	0.1
4 anaemia	21	3.8	2	0.5	17	2.2	1	0.1			41	1.4
5 haematemesis	5	0.9			4	0.5	1	0.1	2	0.3	12	0.4
5 haematuria							2	0.3			2	0.1
5 leukemia	1	0.2			1	0.1					2	0.1
5 sickle cell disease	2	0.4			3	0.4					5	0.2
0 Musculoskeletal and Skin System												
2 fibrosis			14	3.2			1	0.1			15	0.5
2 neuritis					1	0.1					1	0.0
2 rheumatism	3	0.5									3	0.1
2 scabies					1	0.1					1	0.0
2 sciatica					1	0.1					1	0.0
4 polymyositis							1	0.1			1	0.0
5 arthritis	1	0.2	6	1.4	6	0.8	1	0.1	4	0.7	18	0.6
3 Poisoning	19	3.4			25	3.3					44	1.5
2 alcoholic					3	0.4	1	0.1			4	0.1
3 drug					1	0.1					1	0.0
3 foreign substance	1	0.2									1	0.0
3 penicillin reaction allergy	1	0.2			2	0.3					3	0.1
0 Endocrine Disorders												
2 hypoglycaemia	1	0.2			15	2.0	1	0.1			17	0.6
5 diabetes mellitus	42	7.5			45	5.9	1	0.1			88	2.9
5 diabetic ketoacidosis	2	0.4			6	0.8					8	0.3

(continued)

TABLE 1 (cont.)

INPATIENT MORBIDITY CLASSIFICATION FOR NAKURU PROVINCIAL HOSPITAL (continued)

Inpatient Morbidity Classification by Disease Groups	Inpatient Ward											
	Female				Male				Paediatric		TOTAL	
	Medical	Surgical	Medical	Surgical	Medical	Surgical	Surgical	Surgical	#	%	#	%
0 Renal Urological Disorders												
3 pyelonephritis	2	0.4									2	0.1
3 renal colic			2	0.5	3	0.4	1	0.1			6	0.2
3 urine retention							16	2.4	2	0.3	18	0.6
4 acute glomerulonephritis					1	0.1					1	0.0
4 liver carcinoma	1	0.2					1	0.1			2	0.1
4 nephrotic syndrome	2	0.4			5	0.7					7	0.2
4 peptic urea	1	0.2					1	0.1			2	0.1
5 renal failure					1	0.1					1	0.0
5 urethral fistula					1	0.1	1	0.1			2	0.1
5 urinary incontinence							1	0.1			1	0.0
0 Nutritional Disorders												
3 pellagra					2	0.3					2	0.1
5 protein calorie malnutrition	2	0.4			2	0.3			1	0.2	5	0.2
Total Number of Cases	560		438		766		678		589		3031	
Row Percent	18.4		14.4		25.3		22.4		19.4		100.	
Casemix Indexes	3.54		3.98		3.58		4.03		4.47		3.90	
			3.73				3.79					

NOTE: The column labelled "#" is the number of cases of the disease; the column labelled "%" is the percent of cases in the ward with that disease, where "0.0" means less than 0.10%. The number in the left margin before each disease name is the weight attached to that disease, on a scale of 1 (low cost) to 5 (high cost). The "Casemix Index" is the average case weight. Based on admission diagnoses during the period January 1989 to June 1989.

TABLE 2

INPATIENT MORBIDITY CLASSIFICATION FOR NAIVASHA DISTRICT HOSPITAL

Inpatient Morbidity Classification by Disease Groups	Inpatient Ward							
	Female		Male		Paediatric		Total	
	#	%	#	%	#	%	#	%
0 Cardiovascular System								
1 rheumatic chorea					1	0.1	1	0.0
3 bradycardia	1	0.1					1	0.0
4 hypertension	18	2.2	15	2.5			33	1.4
4 shock	1	0.1	1	0.2			2	0.1
5 cardiomyopathy			1	0.2			1	0.0
5 coronary cardiac failure	18	2.2	11	1.8	3	0.3	32	1.3
0 Respiratory System								
3 pharyngitis					1	0.1	1	0.0
4 asthma (inc. bronchial)	6	0.7	13	2.1	4	0.4	23	1.0
4 bronchial spasms	1	0.1					1	0.0
4 bronchitis	10	1.2	3	0.5	45	4.8	58	2.4
4 obstructed airway disease					5	0.5	5	0.2
0 Gastrointestinal Tract								
1 abdominal pain			4	0.7	1	0.1	5	0.2
1 constipation			5	0.8			5	0.2
1 diarrhoea and vomiting			1	0.2	20	2.2	21	0.9
1 enterocolitis	2	0.2					2	0.1
1 gastritis	11	1.3	7	1.2			18	0.8
1 gastroenteritis	1	0.1	5	0.8	64	6.9	70	3.0
1 hyperemesis	3	0.4					3	0.1
2 dehydration	3	0.4			33	3.5	36	1.5
3 duodenal ulcer	1	0.1	16	2.6	1	0.1	18	0.8
3 dyspepsia			2	0.3			2	0.1
3 hepatitis			4	0.7	4	0.4	8	0.3
3 rectal prolapse					4	0.4	4	0.2
4 hepatosplenomegally			1	0.2			1	0.0
4 jaundice	1	0.1	1	0.2			2	0.1
4 malabsorption			1	0.2			1	0.0
5 ascites	3	0.4	2	0.3			5	0.2
5 cyrrhosis			2	0.3			2	0.1
5 oedema			1	0.2			1	0.0
0 Gynaecological								
3 dysmenorrhoea	1	0.1					1	0.0
3 salpingitis	57	6.8					57	2.4
4 abortion	231	27.7					231	9.7
4 bleeding fibroid	1	0.1					1	0.0
4 broken episiotomy	1	0.1					1	0.0
4 D&C	4	0.5					4	0.2
4 dysfunctional uterine bleeding	14	1.7					14	0.6
4 infertility	1	0.1					1	0.0
4 lost coil	1	0.1					1	0.0
4 polymenorrhoea	4	0.5					4	0.2
5 cervical cancer	2	0.2					2	0.1

(continued)

TABLE 2 (cont.)

INPATIENT MORBIDITY CLASSIFICATION FOR NAIVASHA DISTRICT HOSPITAL (Continued)

Inpatient Morbidity Classification by Disease Groups	Inpatient Ward							
	Female		Male		Paediatric		Total	
	#	%	#	%	#	%	#	%
0 Obstetric								
3 premature labor	5	0.6					5	0.2
4 multiparity	10	1.2					10	0.4
4 postpartum haemorrhage	1	0.1					1	0.0
4 retained placenta	1	0.1					1	0.0
5 pre-eclampsia	1	0.1					1	0.0
0 Infectious								
2 eye infection			1	1.6	1	0.1	11	0.5
2 malaria	83	10.0	37	6.1	27	2.9	147	6.2
3 aritaminiasis	2	0.2					2	0.1
3 cellulitis	16	1.9	11	1.8	6	0.6	33	1.4
3 cerebral malaria	10	1.2	13	2.1	7	0.8	30	1.3
3 dysentery			1	0.2			1	0.0
3 herpes			1	0.2			1	0.0
3 impetigo					5	0.5	5	0.2
3 lobar pneumonia	7	0.8	24	4.0			31	1.3
3 lymphangitis					2	0.2	2	0.1
3 oral sepsis			1	0.2			1	0.0
3 pneumonia	20	2.4					20	0.8
3 pyelitis			1	0.2			1	0.0
3 tonsillitis	5	0.6			4	0.4	9	0.4
3 upper respiratory tract	4	0.5	3	0.5	25	2.7	32	1.3
3 urinary tract infection	5	0.6	1	0.2			6	0.3
3 warts					1	0.1	1	0.0
4 broncho pneumonia			14	2.3	287	30.9	301	12.7
4 measles			1	0.2	33	3.5	34	1.4
4 meningitis					14	1.5	14	0.6
4 orchitis			1	0.2			1	0.0
4 typhoid	1	0.1	1	0.2			2	0.1
4 whooping cough					1	0.1	1	0.0
5 neonatal sepsis					5	0.5	5	0.2
5 osteomyelitis	5	0.6					5	0.2
5 pulmonary tuberculosis	12	1.4	18	3.0	2	0.2	32	1.3
5 rabies			1	0.2			1	0.0
5 septic sores	1	0.1					1	0.0
5 septicaemia					1	0.1	1	0.0
5 tetanus	1	0.1	1	0.2	1	0.1	3	0.1
0 Malignancies								
4 breast lumps	1	0.1					1	0.0
5 cancer	4	0.5	2	0.3			6	0.3
0 Endocrine Disorders								
2 hypoglycaemia			8	1.3			8	0.3
5 diabetes mellitus			20	3.3			20	0.8

(continued)

TABLE 2 (cont.)

INPATIENT MORBIDITY CLASSIFICATION FOR NAIVASHA DISTRICT HOSPITAL (Continued)

Inpatient Morbidity Classification by Disease Groups	Inpatient Ward							
	Female		Male		Paediatric		Total	
	#	%	#	%	#	%	#	%
0 Operations								
4 abscess	19	2.3	8	1.3	10	1.1	37	1.6
4 bilateral tubal ligation	42	5.0					42	1.8
4 foreign body	1	0.1	1	0.2	1	0.1	3	0.1
4 lipoma	2	0.2	1	0.2			3	0.1
4 paraphymosis					2	0.2	2	0.1
4 short frenulum					1	0.1	1	0.0
4 urethral stricture			1	0.2			1	0.0
5 acute abdomen	1	0.1					1	0.0
5 appendicitis	12	1.4	4	0.7			16	0.7
5 benign prostate hypertrophy			6	1.0			6	0.3
5 endometrial polyp	1	0.1					1	0.0
5 hernia			16	2.6			16	0.7
5 hydrocele			2	0.3			2	0.1
5 obstruction (inc. intestinal)	2	0.2	7	1.2	10	1.1	19	0.8
5 peritonitis			1	0.2			1	0.0
5 prostetectomy			1	0.2			1	0.0
5 pyloric stenosis	1	0.1	1	0.2			2	0.1
5 ectopic, tubal pregnancy	5	0.6					5	0.2
0 Psychological/Neurological								
3 attempted suicide	1	0.1					1	0.0
3 hysteria	22	2.6	5	0.8			27	1.1
3 psychotic episode	3	0.4					3	0.1
4 anxiety			1	0.2			1	0.0
4 confusion			1	0.2			1	0.0
4 epilepsy	4	0.5	10	1.6	4	0.4	18	0.8
4 febrile convulsions					26	2.8	26	1.1
4 puerperal psychosis	3	0.4					3	0.1
5 decerebrate rigidity					1	0.1	1	0.0
5 hypotian acute brain syndrome	1	0.1					1	0.0
5 mental retardation	1	0.1					1	0.0
5 paralysis			1	0.2			1	0.0
5 peripheral neuropathy	1	0.1					1	0.0
5 psychosis	1	0.1	6	1.0	1	0.1	8	0.3
5 schitzophrenia			1	0.2			1	0.0
5 spinal bifida					1	0.1	1	0.0
5 trauma/coma			2	0.3			2	0.1
3 Injuries and Wounds								
3 bites	4	0.5	2	0.3	4	0.4	10	0.4
3 cut	3	0.4					3	0.1
3 electric shock			2	0.3			2	0.1
3 soft tissue infection	3	0.4	17	2.8	1	0.1	21	0.9
4 dislocation	1	0.1					1	0.0
5 battered baby syndrome					1	0.1	1	0.0
5 burns	9	1.1	12	2.0	96	10.3	117	4.9
5 fracture (#)	23	2.8	69	11.4	19	2.0	111	4.7
5 road traffic accidents	31	3.7	118	19.4	5	0.5	54	2.3

(continued)

TABLE 2 (cont.)

INPATIENT MORBIDITY CLASSIFICATION FOR NAIVASHA DISTRICT HOSPITAL (Continued)

Inpatient Morbidity Classification by Disease Groups	Inpatient Ward							
	Female		Male		Paediatric		Total	
	#	%	#	%	#	%	#	%
0 Blood Disorders								
3 epistaxis			2	0.3	1	0.1	3	0.1
3 haematoma	1	0.1					1	0.0
4 anaemia	19	2.3	3	0.5	24	2.6	46	1.9
5 leukemia	1	0.1					1	0.0
5 sickle cell disease	1	0.1			3	0.3	4	0.2
0 Musculoskeletal and Skin Systems								
2 dermatitis			3	0.5	1	0.1	4	0.2
2 fibrosis			1	0.2			1	0.0
2 myalgia	1	0.1					1	0.0
2 rheumatism			1	0.2			1	0.0
2 scabies					1	0.1	1	0.0
2 sciatica			3	0.5			3	0.1
2 umbilical hernia					3	0.3	3	0.1
4 myositis			2	0.3	1	0.1	3	0.1
5 arthritis	1	0.1	4	0.7	3	0.3	8	0.3
3 Poisoning	13	1.6	21	3.5	16	1.7	50	2.1
2 alcoholic			8	1.3			8	0.3
3 penicillin reaction/allergy	3	0.4					3	0.1
0 Renal/Urological Disorders								
3 urine retention			4	0.7			4	0.2
4 acute glomerulonephritis			2	0.3	2	0.2	4	0.2
4 nephritis			2	0.3	5	0.5	7	0.3
4 nephrotic syndrome			2	0.3			2	0.1
0 Nutritional Disorders								
4 vitamin deficiency	1	0.1					1	0.0
5 kwashiorkor					21	2.3	21	0.9
5 marasmus					8	0.9	8	0.3
5 protein calorie malnutrition					17	1.8	17	0.7
5 starvation	1	0.1	7	1.2			8	0.3
5 wasting					4	0.4	4	0.2
0 Neonatal Disorders								
4 opthalmic neonatus					1	0.1	1	0.0
4 rhiabo incompatibility					1	0.1	1	0.0
5 prematurity					11	1.2	11	0.5
Total Number of Cases, Row Percent	834	35.2	607	25.6	930	39.2	2371	100.
Casemix Index	3.67		3.67		3.70	0.0	3.68	

NOTE: The column labelled "#" is the number of cases of the disease; the column labelled "%" is the percent of cases in the ward with that disease, where "0.0" means less than 0.10%. The number in the left margin before each disease name is the weight attached to that disease, on a scale of 1 (low cost) to 5 (high cost). The "Casemix Index" is the average case weight. Based on admission diagnoses during the period July 1988 to June 1989.

TABLE 3

INPATIENT MORBIDITY CLASSIFICATION FOR MERCY MISSION HOSPITAL

Inpatient Morbidity Classification	Inpatient Ward			
	Female	Male	Paediatric	Total
0 Cardiovascular System				
1 rheumatic chorea	1 0.2			1 0.1
4 hypertension	4 0.6	3 0.9		7 0.4
4 RHD	2 0.3		2 0.2	4 0.2
5 coronary cardiac failure	4 0.6	1 0.3	2 0.2	7 0.4
0 Respiratory System				
2 sinusitis	2 0.3		1 0.1	3 0.2
3 bronchiolitis			7 0.8	7 0.4
3 pharyngitis	1 0.2			1 0.1
4 asthma (inc. bronchial)	11 1.8	11 3.3	8 0.9	30 1.6
4 bronchitis	7 1.1	2 0.6	8 0.9	17 0.9
0 Gastrointestinal Tract				
1 abdominal pain	4 0.6	5 1.5	1 0.1	10 0.5
1 constipation	1 0.2	1 0.3		2 0.1
1 diarrhoea and vomiting	1 0.2	1 0.3	8 0.9	10 0.5
1 gastritis	18 2.9	9 2.7	1 0.1	28 1.5
1 gastroenteritis	9 1.4	10 3	51 5.9	70 3.8
1 hyperemesis	2 0.3			2 0.1
2 dehydration			3 0.3	3 0.2
3 duodenal ulcer	9 1.4	7 2.1	4 0.5	20 1.1
3 hepatitis		1 0.3	1 0.1	2 0.1
3 rectal prolapse			2 0.2	2 0.1
4 hepatosplenomegally	3 0.5			3 0.2
4 jaundice		1 0.3		1 0.1
0 Gynaecological				
2 trichomonas	2 0.3			2 0.1
3 salpingitis	16 2.5		1 0.1	17 0.9
4 abortion	91 14.5			91 5.0
4 dysfunctional uterine bleeding	6 1			6 0.3
4 infertility	1 0.2			1 0.1
5 cervical cancer	1 0.2			1 0.1
5 puerperal sepsis	19 3			19 1.0
0 Obstetric				
3 premature labor	1 0.2			1 0.1
4 postpartum haemorrhage	6 1			6 0.3
4 retained placenta	4 0.6			4 0.2

(continued)

TABLE 3 (cont.)

INPATIENT MORBIDITY CLASSIFICATION FOR MERCY MISSION HOSPITAL (continued)

Inpatient Morbidity Classification	Inpatient Ward			
	Female	Male	Paediatric	Total
0 Infectious				
2 amoebiasis	5 0.8	3 0.9	1 0.1	9 0.5
2 amoebic colitis	1 0.2			1 0.1
2 malaria	181 28.8	91 27	272 31.3	544 29.6
2 rubella	1 0.2			1 0.1
2 tapeworm		1 0.3		1 0.1
3 balanitis			1 0.1	1 0.1
3 cellulitis	7 1.1	4 1.2	9 1	20 1.1
3 cerebral malaria	8 1.3	19 5.6	10 1.1	37 2.0
3 dysentery	1 0.2	2 0.6	1 0.1	4 0.2
3 giardiasis	4 0.6		2 0.2	6 0.3
3 impetigo	2 0.3			2 0.1
3 mastoiditis			1 0.1	1 0.1
3 otitis media (ear infection)			7 0.8	7 0.4
3 pneumonia	14 2.2	12 3.6	111 12.8	137 7.5
3 tonsillitis	1 0.2		2 0.2	3 0.2
3 upper respiratory tract	11 1.8	6 1.8	68 7.8	85 4.6
3 urinary tract infection	15 2.4	1 0.3	2 0.2	18 1.0
4 broncho pneumonia	5 0.8	7 2.1	24 2.8	36 2.0
4 lymphogranuloma venerum		1 0.3		1 0.1
4 measles	1 0.2	4 1.2	82 9.4	87 4.7
4 meningitis			2 0.2	2 0.1
4 orchitis	1 0.2	1 0.3		2 0.1
4 whooping cough			5 0.6	5 0.3
5 kalazar			2 0.2	2 0.1
5 neonatal sepsis			4 0.5	4 0.2
5 osteomyelitis		1 0.3	2 0.2	3 0.2
5 pulmonary tuberculosis	7 1.1	15 4.5	6 0.7	28 1.5
5 septic sores			1 0.1	1 0.1
5 tetanus		1 0.3		1 0.1
0 Malignancies				
4 bilateral nose polyps	1 0.2			1 0.1
4 haemorrhoids		1 0.3		1 0.1
4 myeloma	1 0.2			1 0.1
5 cancer	5 0.8	2 0.6	2 0.2	9 0.5
5 lymphoma	1 0.2			1 0.1

(continued)

TABLE 3 (cont.)

INPATIENT MORBIDITY CLASSIFICATION FOR MERCY MISSION HOSPITAL (continued)

Inpatient Morbidity Classification	Inpatient Ward			
	Female	Male	Paediatric	Total
0 Operations				
4 abscess	18 2.9	5 1.5	9 1	32 1.7
4 foreign body	1 0.2		1 0.1	2 0.1
5 abdominal mass	2 0.3			2 0.1
5 amputation	1 0.2	3 0.9		4 0.2
5 ano stenosis			1 0.1	1 0.1
5 obstruction (inc. intestinal)	1 0.2	1 0.3		2 0.1
5 ectopic, tubal pregnancy	5 0.8			5 0.3
0 Psychological/Neurological				
3 hysteria	4 0.6	1 0.3	1 0.1	6 0.3
3 psychosomatic	2 0.3	2 0.6		4 0.2
3 psychotic episode	3 0.5	2 0.6		5 0.3
4 anxiety	1 0.2	1 0.3	3 0.3	5 0.3
4 epilepsy	4 0.6	4 1.2	5 0.6	13 0.7
4 febrile convulsions		1 0.3	28 3.2	29 1.6
4 perurperal psychosis	3 0.5			3 0.2
5 psychosis	7 1.1	6 1.8		13 0.7
5 trauma/coma			1 0.1	1 0.1
3 Injuries and Wounds				
3 bites	15 2.4	26 7.7	6 0.7	47 2.6
3 soft tissue infection	3 0.5		4 0.5	7 0.4
3 stings	2 0.3	3 0.9	2 0.2	7 0.4
3 burns	1 0.2			1 0.1
5 fractures (#)	7 1.1	3 0.9	27 3.1	37 2.0
5 road traffic accidents	6 1	7 2.1	5 0.6	18 1.0
5	7 1.1	8 2.4	3 0.3	18 1.0
0 Blood Disorders				
3 epistaxis	2 0.3	4 1.2		6 0.3
3 haematoma		2 0.6		2 0.1
4 anaemia	13 2.1	10 3	30 3.4	53 2.9
5 haematemesis		2 0.6		2 0.1
5 sickle cell disease	1 0.2			1 0.1
0 Musculoskeletal and Skin Systems				
2 scabies		1 0.3	3 0.3	4 0.2
2 sciatica	1 0.2			1 0.1
4 eczema		1 0.3		1 0.1
5 arthritis	6 1	2 0.6	3 0.3	11 0.6
5 hyperketonic		1 0.3		1 0.1

(continued)

TABLE 3 (cont.)

INPATIENT MORBIDITY CLASSIFICATION FOR MERCY MISSION HOSPITAL (continued)

Inpatient Morbidity Classification	Inpatient Ward			
	Female	Male	Paediatric	Total
3 Poisoning	5 0.8	3 0.9	2 0.2	10 0.5
2 alcoholic	2 0.3	4 1.2		6 0.3
3 drug	2 0.3	2 0.6	1 0.1	5 0.3
3 penicillin reaction/allergy		1 0.3		1 0.1
0 Renal/Urological Disorders				
3 urine retention		4 1.2		4 0.2
4 liver carcinoma	4 0.6			4 0.2
4 nephritis		1 0.3		1 0.1
4 nephrotic syndrome			1 0.1	1 0.1
0 Endocrine Disorders				
5 diabetes mellitus		2 0.6		2 0.1
0 Neonatal Disorders				
4 ophthalmic neonatus			1 0.1	1 0.1
0 Nutritional Disorders				
3 pellagra			3 0.3	3 0.2
5 kwashiorkor			1 0.1	1 0.1
5 marasmus			4 0.5	4 0.2
5 protein calorie malnutrition			8 0.9	8 0.4
Total Number of Cases, Row Percent	628 34.2	337 18.2	870 47.0	1835 100.
Casemix Index	3.13	3.04	2.94	3.02

NOTE: The column labelled "#" is the number of cases of the disease; the column labelled "%" is the percent of cases in the ward with that disease, where "0.0" means less than 0.10%. The number in the left margin before each disease name is the weight attached to that disease, on a scale of 1 (low cost) to 5 (high cost). The "Casemix Index" is the average case weight. Based on discharge diagnoses for the following months (years): July, October (1987); January, April, July, October (1988); and January, April (1989).

APPENDIX: Socio-Economic Characterisitcs of Nakuru Population

APPENDIX: Socio-Economic Characteristics of Nakuru Population

This section presents a socio-economic profile of the people of Nakuru District in Kenya. The main sources of data for developing this profile are publications by the Central Bureau of Statistics (C.B.S.), and unpublished CBS tabulations of household budget surveys.

BASIC INDICATORS

Household Size and Composition:

Table 1 shows that about ten percent of Nakuru households were single-person households and 25 percent had two or three members. About 20 percent of households had four or five members and another 25 percent had six or seven members. Households with eight or nine members totaled 13 percent, and only about six percent had ten members or more. The pattern for Nakuru District was not significantly different from that of the whole of Kenya.

TABLE 1

PERCENT OF HOUSEHOLDS BY SIZE GROUP, 1981/82

Household Size Group	Percent	
	Nakuru District	Kenya (rural)
1	11	11
2 to 3	25	19
4 to 5	21	24
6 to 7	24	23
8 to 9	13	13
10 +	6	10
ALL	100	100

Note: Mean household size, Nakuru District, 1981/82: 4.97
 Mean household size, Nakuru District, 1979 Census: 4.56
 Mean household size, Rural Kenya, 1981/82: 5.45
 Mean household size, Rural Kenya, 1979 Census: 5.18

Sources: (1) C.B.S., 1981/82: Rural Household Budget Survey.
 (2) C.B.S., 1981: Kenya Population Census 1979, Volume I

The average household size was reported as 4.97, which is lower than the national figure of 5.45 in 1981/82. The District's average household size in 1979 was about 4.56.

It was not possible to obtain reliable data on the marital status of the population in general. However, data on the marital status of the heads of households indicates that 82 percent of heads-of-household in Nakuru District are married. Ten percent are widowed, 4 percent are single, and 4 percent are separated or divorced. There is no significant difference between these marital status patterns in Nakuru District and all of Kenya. In general, about one fifth of the households could be considered potentially economically disadvantaged in that they were headed by individuals who were either unmarried, widowed, divorced or separated.

TABLE 2

GENDER OF HOUSEHOLD HEADS (PERCENTAGES)

		1981/82	
Sex	Nakuru District (Household Heads)	Kenya (Household Heads)	
Male	60	67	
Female	40	33	
All	100	100	

- Source: (1) C.B.S., 1981/82: Rural Household Budget Survey
 (2) C.B.S., 1981 : Kenya Population Census, 1979, Volume I

According to the 1979 census, both males and females were about equally represented in the population. Table 2 indicates that 40 percent of the households in Nakuru were headed by females in 1981/82 and 60 percent were headed by males. For Kenya as a whole, about two-thirds were headed by males and 30 percent by females. To the extent that female household heads have lower incomes and fewer opportunities for gainful employment, a significant proportion of Kenyan households may be economically disadvantaged.

Kenya's population is relatively youthful. The same applies to that of Nakuru District. According to the 1979 population census, about half of the population in both Nakuru District and Kenya were young (i.e., at most 14 years old), about two-fifths (or 37 percent) were between 15 and 39 years old, one-tenth were between 40 and 59 years old, while only four percent were 60 years old or more. Age characteristics of households heads are presented in Table 3. Only about two percent of all household heads in Nakuru in 1981/82 were in their teens. About 44 percent were between 20 and 40 years old, and 37 percent were between 41 and 60 years old. Close to one fifth (17 percent) were at least 60 years old. Similar patterns prevailed among the whole of Kenya.

TABLE 3

AGE OF HOUSEHOLD HEAD (PERCENTAGE)

	1 9 8 1 / 8 2	
Age Group: (years)	Nakuru District (Household Heads)	Kenya (Household Heads)
0 -4	-	-
5 -9	-	-
10-14	-	-
15-19	2	1
20-24	20	16
25-29	11	13
30-34	13	13
35-39	9	10
40-44	10	12
45-49	9	10
50-54	9	9
60-64	-	-
65-69	17	16
70-74	-	-
75+	-	-
ALL	100	100

- Sources:
- (1) C.B.S., 1981/82; Rural Household Budget Survey.
 - (2) C.B.S., 1981: Kenya Population Census, 1979, Volume I

Household Education Levels:

Half of Kenya's population (51 percent) had never been to school by 1979. In Nakuru, the percentage was 46. About two-fifths had up to eight years of education, only about seven percent had high school education (up to Form IV), while only one per cent had had post-high school education (including university) (see Table 4). By 1981/82, about 55 percent of all household heads in Nakuru District (53 percent in the case of the whole country) had never been to school. About 40 percent had had primary school education (up to standard 8), about five percent had gone up to Form IV, while only a negligible proportion had gone beyond Form IV. While the illiteracy rates are falling fast, primary school illiteracy remains a problem for the population of Nakuru District.

TABLE 4

EDUCATIONAL ATTAINMENT OF HOUSEHOLD HEAD (PERCENTAGES)				
Education Level	Nakuru District (Household Heads)	Kenya (Household Heads)	Nakuru District (all people)	Kenya (all People)
None	55	53	46	51
Std. 1-4	19	19	14	13
Std. 5-8	20	21	20	17
Form I-II	2	3	8	7
Form III-IV	3	4	8	7
Form V-VI	0	0	1	1
University	0	0	1	1
Not known	1	0	1	1
ALL	100	100	100	100

Sources:

- (1) C.B.S., 1981/82: Rural Household Budget survey
- (2) C.B.S., 1981; Kenya Population Census, 1979; Volume I

Occupation

Seventy percent of heads of households in Nakuru District reported agriculture as their primary occupation compared to 74 percent for Kenya as a whole. Other occupations had small percentages as Table 5 shows. For example, only two percent were in professional occupations, such as teachers, health personnel, engineers, and so on. Another two percent were in sales, five percent were in general service industries such as hair dressing, hotels, etc.). The pattern of professional categories for Nakuru District was not significantly different from that of the country as a whole.

TABLE 5

PRIMARY OCCUPATION OF HOUSEHOLD HEAD, 1981/82 (PERCENTAGES)

<u>:Professional</u> <u>:Category</u>	<u>: Nakuru</u> <u>: District</u>	<u>: Kenya</u> <u>: (rural):</u>
<u>:Professional</u>	<u>: 2</u>	<u>: 4</u>
<u>:Administrative</u>	<u>: 2</u>	<u>: 2</u>
<u>:Sales</u>	<u>: 4</u>	<u>: 3</u>
<u>:Services</u>	<u>: 5</u>	<u>: 3</u>
<u>:Agriculture</u>	<u>: 71</u>	<u>: 74</u>
<u>:Production</u>	<u>: 2</u>	<u>: 2</u>
<u>:Transport</u>	<u>: 1</u>	<u>: 1</u>
<u>:General labour</u>	<u>: 11</u>	<u>: 7</u>
<u>:Not specified</u>	<u>: 2</u>	<u>: 2</u>
<u>:ALL</u>	<u>: 100</u>	<u>: 100</u>

Source: C.B.S., 1981/82; Rural Household Budget Survey.

INDICATORS OF ECONOMIC STATUS

Landholding Size:

Table 6 shows that about 15 percent of Nakuru households in 1981/82 were landless. The corresponding proportion for rural Kenya was about 12 percent. However, among those with landholdings 60 percent owned less than 3 acres. Thus, 75 percent of the households

either had no land or had at most three acres. Only one percent of Nakuru District households had 20 or more acres of land. Since the majority of household heads in Nakuru District were engaged in agriculture, and those who were mainly farmers had landholdings that were so small as to be almost not viable economically, such households may tend to have low incomes.

TABLE 6

SIZE OF LANDHOLDING BY PERCENT
OF HOUSEHOLDS, 1981\82

Holding Size (acres)	Nakuru District	Kenya (rural)
0	15	12
0.1-0.9	7	5
1.0-1.9	17	13
2.0-2.9	35	15
3.0-3.9	12	12
4.0-4.9	4	8
5.0-6.9	7	12
7.0-9.9	0	8
10.0-19.9	2	10
20.0+	1	5
TOTAL	100	100

Note: Mean holding size, Nakuru District: 3.4 acres Mean holding size, Rural Kenya: 5.7 acres

Source: C.B.S., 1981/82; Rural Household Budget Survey

Rural Kenya in general tended to have a more even spread of landholding sizes by percent of households compared to Nakuru District. For example, 12 percent of the households had no land, while only about 33 percent had small holdings of at most three acres (compared to 59 percent for Nakuru District). Indeed, while Nakuru District had only ten percent of households with landholdings exceeding two acres in size, rural Kenya had about 35 percent.

House Construction and Types of Dwellings:

Most dwellings in Nakuru District and rural Kenya in 1981/82 were either traditional or semi-permanent (about 95 percent). Thus most of the people (more than half) live in structures that are not durable. Most of these dwellings have thatched roofs and mud walls, indicators of poverty and low incomes. The type of roof used in house construction can be a good indicator of the economic status of a given

population. In Kenya the poor tend to have thatched roofs since in most cases thatching material is obtained at little or no money cost. The moderately well-to-do tend to use corrugated iron sheets to roof their houses while those well-off tend to live under roofs made of tiles, asbestos or other expensive materials. In Nakuru, 64 percent of households have thatched roofs, 34 percent have corrugated iron sheets, and 2 percent had tiles or other expensive material. Therefore, a thatched roof is an indicator of low-income status. The majority of the people in Nakuru District were of low-income status.

Type of Wall Material

The materials used to construct walls of dwellings can also indicate the income status of a household. This is because the poor and low-income households often use mud or wood to construct walls, since these tend to be obtained at little or no money cost. In Nakuru District, 77 percent of dwellings have mud walls and 18 percent have wood walls. These indices of economic status show that between 75 and 80 percent of the population in Nakuru District may be low income. Only a mere one percent of the dwellings in Nakuru District had piped water in 1981/82. In rural Kenya this proportion was about two percent. To the extent that use of untreated water is a major cause of disease and ill-health, therefore, it can be expected that most people in Nakuru District are exposed to water-borne diseases and general ill-health resulting from lack of access to piped water. This compounds their poverty and difficult life. The mean value of traditional dwelling structures in Nakuru District in 1981/82 was about Kshs. 800. In Kenya it was about Kshs. 400. The mean value of semi-permanent dwelling structures was about Kshs. 3,500 in Nakuru District and about Kshs. 2,700 in rural Kenya as a whole, while that of permanent structures was about Kshs. 6,100 in Nakuru District and Kshs. 20,600 in rural Kenya in general.

Household Income

On average, a household in Nakuru District had a monthly income of about Kshs. 798 compared to Kshs. 966 for rural Kenya. Table 7 indicates how this income was distributed among the households. Twenty percent of the households in Nakuru District had a mean monthly income of less than Kshs. 300. This was also the case in rural Kenya. If incomes less than Kshs. 600 per month are considered the poverty line, about half of the households in Nakuru District (as well as rural Kenya as a whole) were very poor. Table 7 shows that the pattern of income distribution in Nakuru District in 1981/82 was not significantly different from that in rural Kenya over the same period. In general, household income levels were very low, and incomes were inequitably distributed. For example, close to 70 percent of households in Nakuru District had less than the average income for all households, while only 30 percent had more than this average household income.

TABLE 7

HOUSEHOLD MONTHLY INCOME DISTRIBUTION
OF 1981\82 (PERCENTAGES)

: Income : Group : (Kshs/month)	:	Nakuru District	:	Kenya (rural)	:
: up to 299	:	21	:	19	:
: 300 to 599	:	28	:	28	:
: 600 to 899	:	21	:	20	:
: 900 to 1,499	:	17	:	17	:
: 1,500 +	:	13	:	16	:
: TOTAL	:	100	:	100	:

Note: Mean gross monthly household income, Nakuru District:
Kshs. 798.00

Mean gross monthly household income, Rural Kenya: Kshs.
966.00

Source: C.B.S. 1981/82: Rural Household Budget Survey.

APPENDIX: Analysis of Outpatient Willingness to Pay and
Client Characteristics

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 Client Characteristics

This analysis is based on the data collected from outpatient clients concerning their willingness to pay user fees in order to ensure that the quality of services are improved at the facility. In Section 4.5 the percentages of respondents willing to pay various amounts have been discussed. In this appendix the relationship between willingness to pay and demographic, socioeconomic and health care characteristics of clients is explored. While crosstabulations of willingness to pay by each of these characteristics begin to get at this relationship, a more powerful method is required to examine the relative effect of each of these characteristics, controlling for the others; this method known as multiple regression analysis. Because the phenomenon that is to be predicted is simply the willingness to pay an amount (yes or no), and not an actual amount (in Ksh), the appropriate model is a "probit" model, which is specifically designed to cater for binary outcome variables. The following client characteristics have been used to predict willingness to pay:

1.0 Demographic

- 1.1 age (in years)
- 1.2 male gender
- 1.3 married
- 1.4 household size

2.0 Socioeconomic

- 2.1 Education (of head of household in years)
- 2.2 Income (household)

3.0 Healthcare

- 3.1 Travel fare to facility
- 3.2 Travel time to facility
- 3.3 Past visits to any facility
- 3.4 High rating of quality of service at facility
- 3.5 Household membership in a health insurance programme

There were several questions about willingness to pay. The first simply asked if the client would be willing to pay something, to ensure that the quality of services were improved. If the clients responded 'yes' then they were asked if they would pay Ksh. 10 per visit, Ksh. 20 per visit and Ksh. 30 per visit. The relationship between the client characteristics listed above and each of the willingness to pay items is presented in Tables 1 and 2. Table 1 provides descriptive information about each of these variables separated by whether or not clients are willing to pay. Table 2 presents the actual results of the probit analyses of each willingness

to pay item. The interpretation of these results involves the following considerations. First, under the column labelled "coeff" are the estimated coefficients for each independent variable (client characteristic); they measure the relative effect of the variable on willingness to pay, controlling for the remaining variables. Thus, the estimate for the effect of Travel fare on willingness to pay something is $-.001$, which indicates a negligible reduction in the probability that the client would be willing to pay as travel fare increase; conversely, the estimate for Travel time of $.002$ indicates a minor positive relationship whereby willingness to pay increases with Travel time, other things being equal. Associated with each estimated coefficient is a "t statistic" under the column labelled "t-stat"; the t statistic indicates whether the estimated coefficient is significantly different from zero, which is generally true when the absolute value of the t statistic is greater than 2.0. Such cases have been marked with an asterisk. Regardless of whether an estimated coefficient is significant it is still useful to review the signs for each estimate in order to determine the general direction of the relationship between each variable and each willingness to pay item. Thus, statistical significance simply increases the amount of confidence to be attached to the direction and magnitude of each relationship.

From Table 2 it is clear that gender (male) and age have a negative effect on willingness to pay something, meaning that males and older clients are less willing to pay than females and younger people. Meanwhile, education and income have a positive effect. This is important because it indicates that willingness to pay is in part determined by income so that those who would not be willing to pay have lower incomes. Past visits to a facility reduce willingness to pay probably because clients have come to expect and depend on "free" services. Possession of health insurance also reduces willingness to pay, which may reflect an expectation that fees would be passed on to members in the form of higher insurance premiums. Finally, clients who rated the overall quality of services at the facility as "good" would be less willing to pay than those who rated the services as "fair" or "bad" or "don't know". This means that those who perceive the quality as low would be willing to pay to improve the quality of services.

There were 807 (67 percent) respondents who said they would be willing to pay something to improve services. Of these, 91% would pay Ksh. 10 per visit, 51% would pay Ksh. 20 per visit and only 28% would be willing to pay Ksh. 30 per visit. Looking at Table 2 it can be seen that education and income are the key predictors of willingness to pay Ksh. 10 per visit, and income is the only significant determinant of willingness to pay Ksh. 20 per visit. One striking result is the clients who perceive quality as good are more likely to be willing to pay Ksh. 10 per visit than those who perceive quality as bad. This means that when it comes to actual fees rather than just "something" the relationship between perceived quality and willingness to pay is reversed.

Respondents who said they would be willing to pay something to improve services were also asked if they would be willing to pay an additional amount for drugs. Of these, 65 percent said they would pay Ksh. 10 per visit, 31 percent would pay Ksh. 20 per visit and only 13 percent would pay Ksh. 30 per visit for drugs. The same probit model as above was used to estimate willingness to pay extra for drugs; the results are presented in Tables 3 and 4. Income emerges as the only consistently significant determinant of willingness to pay any amount, while possession of health insurance is a significant predictor of willingness to pay Ksh. 10 per visit for drugs, but in a negative sense. That is, possession of insurance reduces the probability that a client is willing to pay for drugs, possibly because they expect the cost to be passed on in the form of higher premiums.

There are two major policy implications of these results. First, the positive effect of income on willingness to pay indicates that lower income clients may suffer a reduction in access to affordable health care. Second, clients who currently perceive the quality of service as good would pay Ksh. 10 per visit to ensure that services are improved while those who disapprove of the current quality of services display a lack of confidence in the promise to improve quality with user fees, and they may not be willing to patronise government facilities until they believe that they are getting better quality for the money they would be required to pay. Income and perceived quality are thus the principal determinants of willingness to pay Ksh. 10 per visit. It is important for MOH policy makers to understand the relative effect of these two factors, holding other things constant. An examination of the "elasticity" of willingness to pay with respect to income and perceived quality indicates that a magnitude of the effect of income is somewhat lower than the magnitude of the effect perceived high quality. This means that a higher priority should be attached to visible improvements in perceived quality, while a lower priority should be assigned to ensuring access to affordable health care.

The above models have not been controlled for the type of facility where the clients were interviewed. This may be important since the sample included clients at both MOH and non-MOH hospitals and health centres as well as MOH dispensaries. In order to determine if the type of facility is related to willingness to pay, an indicator variable distinguishing between health centres and hospitals was included in the above models. Only MOH hospitals and health centres were included. In no case was this type of facility indicator found to be a significant determinant of willingness to pay, nor did it's presence change any of the major results cited above.

Monetary income has been used to measure ability to pay, however, this is likely to underestimate true income since many rural households engage in non-market subsistence food and craft production. This problem is compounded by the fact that many patients would depend on extended family for help paying fees, so that the appropriate

income for the purpose of measuring ability to pay should include information about extended family members. Furthermore, the opportunity cost of travel and waiting time has not been estimated, thus, the full effect of travel and waiting time has not been measured. Finally, estimation of the elasticity (or relative responsiveness) of each independent variable with respect to willingness to pay has not been presented due to difficulties in deriving an appropriate formulation for a discrete dependent variable which is a probability (in the interval $[0,1]$).

TABLE 1
 MEANS OF INDEPENDENT VARIABLES BY OUTPATIENT WILLINGNESS TO PAY

Variable	Something		Ksh 10/visit		Ksh 20/visit		Ksh 30/visit	
	no	yes	no	yes	no	yes	no	yes
Travel fare	5.62	4.87	3.91	4.96	4.75	4.98	4.58	5.62
Travel time	33.69	35.23	30.84	35.67	35.26	35.19	35.00	35.82
Sex	0.45	0.36	0.33	0.36	0.37	0.36	0.37	0.35
Age	20.74	16.51	21.33	16.01	16.66	16.36	16.21	17.30
Married	0.52	0.56	0.45	0.57	0.57	0.56	0.58	0.52
Household size	5.64	5.23	4.83	5.27	5.23	5.23	5.26	5.16
Education	6.36	7.54	6.47	7.65	7.24	7.84	7.35	8.06
Income	1259.88	1683.63	908.05	1763.09	1409.80	1948.77	1566.09	1993.36
Past visits	1.96	1.88	1.96	1.87	1.92	1.84	1.92	1.77
High quality	0.78	0.76	0.65	0.77	0.76	0.77	0.76	0.77
Insurance	0.21	0.24	0.24	0.24	0.22	0.26	0.22	0.29
Number of cases	392	807	75	732	397	410	585	222
% willing to pay		67%		91%		51%		28%

TABLE 2
PROBIT ANALYSIS OF OUTPATIENT WILLINGNESS TO PAY

Variable	Something		Ksh 10/visit		Ksh 20/visit		Ksh 30/visit	
	coeff.	t-stat	coeff.	t-stat	coeff.	t-stat	coeff.	t-stat
Constant	0.596	3.039	0.422	1.293	-0.209	-0.902	-0.803	-3.193
Travel fare	-0.001	-0.364	0.008	0.714	0.001	0.233	0.006	1.036
Travel time	0.002	1.698	0.003	1.268	0.000	0.138	0.001	0.382
Sex	-0.219	-2.788*	0.074	0.538	-0.031	-0.328	-0.064	-0.633
Age	-0.009	-3.027*	-0.009	-1.639	-0.001	-0.235	0.002	0.416
Married	-0.076	-0.729	0.110	0.653	-0.034	-0.280	-0.071	-0.542
Household size	-0.016	-1.119	0.033	1.213	0.005	0.271	-0.003	-0.178
Education	0.032	3.102*	0.039	2.210*	0.017	1.385	0.018	1.371
Income	0.000	2.007*	0.000	2.716*	0.000	2.440*	0.000	1.603
Past visits	-0.009	-0.379	-0.011	-0.255	-0.019	-0.649	-0.049	-1.328
High quality	-0.095	-1.032	0.358	2.497*	0.073	0.688	0.090	0.790
Insurance	-0.027	-0.282	-0.153	-0.952	0.080	0.723	0.166	1.420

NOTE: The column labelled "coeff." is the estimated coefficient; the column labelled "t-stat" is the t-statistic; an asterisk next to a t-statistic indicates significance probability less than 1%.

TABLE 3

MEANS OF INDEPENDENT VARIABLES BY OUTPATIENT WILLINGNESS TO PAY FOR DRUGS

Variable	Ksh 10/visit		Ksh 20/visit		Ksh 30/visit	
	no	yes	no	yes	no	yes
Travel fare	4.16	5.24	4.55	5.58	4.53	6.46
Travel time	36.64	34.51	34.96	35.90	34.94	36.69
Sex	0.40	0.34	0.37	0.34	0.37	0.32
Age	17.52	15.95	16.72	15.99	16.31	17.37
Married	0.55	0.57	0.56	0.56	0.57	0.51
Household size	5.03	5.34	5.18	5.33	5.24	5.20
Education	7.58	7.52	7.44	7.78	7.46	7.92
Income	1323.14	1877.98	1525.71	2044.15	1519.64	2459.55
Past visits	1.97	1.83	1.94	1.73	1.92	1.70
High quality	0.74	0.78	0.75	0.79	0.76	0.79
Insurance	0.30	0.21	0.25	0.22	0.23	0.29
Number of cases	280	526	558	248	664	142
% willing to pay		65%		31%		18%

TABLE 4

PROBIT ANALYSIS OF OUTPATIENT WILLINGNESS TO PAY FOR DRUGS

Variable	Ksh 10/visit		Ksh 20/visit		Ksh 30/visit	
	coeff.	t-stat	coeff.	t-stat	coeff.	t-stat
Constant	0.417	1.754	-0.671	-2.710	-1.047	-3.735
Travel fare	0.013	1.792	0.006	1.154	0.009	1.603
Travel time	-0.002	-1.636	0.000	0.232	0.001	0.383
Sex	-0.147	-1.516	-0.091	-0.917	-0.119	-1.048
Age	-0.007	-1.541	-0.003	-0.691	0.000	-0.012
Married	-0.081	-0.636	-0.062	-0.478	-0.144	-0.973
Household size	0.027	1.453	0.013	0.723	-0.004	-0.216
Education	0.007	0.539	0.016	1.257	0.003	0.230
Income	0.000	2.663*	0.000	2.109*	0.000	3.181*
Past visits	-0.026	-0.867	-0.060	-1.632	-0.059	-1.364
High quality	0.095	0.874	0.168	1.478	0.163	1.259
Insurance	-0.324	-2.855*	-0.121	-1.023	0.169	1.312

NOTE: The column labelled "coeff." is the estimated coefficient; the column labelled "t-stat" is the t-statistic; an asterisk next to a t-statistic indicates significance probability less than 1%.