INPUT FOR

ANNUAL REPORT 2008

Covering: January – December

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1. General review of the year 2008

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NB: This chapter and the next one on finances needs to be written by KDHCO and Panguma Hospital administration. This draft report focuses mainly on the more medical aspects

2. Finances

3. Hospital activities

This year we have consolidated our regular outpatient services and inpatient services and we have strengthened some of the special programs such as HIV/AIDS control, Lassa, Epilepsy and diabetes care.
In the following chapters we describe in more detail the results of this year.

3.1. Overall utilization of hospital services & trends over time

This year's statistics show us that the hospital primarily has an important function as a second line health facility where serious cases can be treated and if necessary admitted. While our inpatient numbers have risen significantly, all outpatients attendances have slightly decreased compared to 2007.
All wards are now in use (children, male, female, maternity and TB) except for the infectious diseases ward. Suspected Lassa cases are taken care of in the general wards or in separate side-rooms, with great caution and immediately referred when possible to KGH Lassa Ward.

The total number of under fives inpatients has risen from 445 in 2007 to 825 in 2008 and the adult admissions have gone up from 1392 to 1597. In total the number of admissions has increased with 32%.
A closer look at these figures reveals that this is mainly due to the great increase in admissions in children's ward. This could be due to the possibility of blood transfusion which is mainly used in children with severe malaria, the main diagnosis in children.
But also in all the other wards the admissions increased. This can point to a growing trust, recognition and knowledge of the hospital in the area.

The male admissions are the highest in the adult admissions. Partly this is due to the high demand of mainly men for hernia and hydrocele operations. To what extent families may tend to give priority to men over women in health care matters when financial resources are scarce is not known.
Although the past year the admissions in the female ward are increasing.

The increase in admissions in the maternity ward is somehow disappointing. The number of hospital deliveries is still very low. Most of the women deliver at home or with supervision of a traditional midwife and only arrive at the hospital very late with severe complications.

Matron Hawa Rogers has been having meetings with the TBA's and also teaching is done during ante natal consults but it seems only a tip of the iceberg is reached with this information. A poor road system, traditional believes, financial restrains, lack of education can all be factors contributing to the delay. More attention should be paid to this matter in the future together with the government and MCH clinic services in nearer health facilities in order to bring down the high maternal mortality.

Table 1: Comparison inpatients of the years 2007 – 2008

Hospital Ward Admissions	**2008**	**2007**	**Comments**
> 5 male	636	599	6% increase in admissions of adult men
> 5 female	353	283	Female ward admissions: 25% increase
Children	825	445	85% increase in admissions of small children
Maternity	317	290	Maternity ward admissions: 9% increase
TB	287	223	increase in 2008: 29%
Total	**2.422**	**1.840**	**Total increase of inpatients with 32%**

Table 2: Comparison outpatients of the years 2007 – 2008

Hospital OPD attendance January – December	**2008**	**2007**	
UFC (preventive & curative)	4324	4537	5% decrease in underfives attendance
Adults and children > 5	8979	8432	6.5% increase in adult OPD utilization by > 5
ANC	1616	1911	15% decrease in number of ANC attendances
Total	**14919**	**14880**	**Almost the same**

Why the OPD attendances of underfives and pregnant mothers have decreased we do not know. The ANC services are preventive services and we consider them crucial for a safe delivery and healthy newborn child. About 40% of all UFC attendances concern preventive services as well so the overall drop in preventive health seeking behavior in our hospital is a trend that we need to take serious. We hope that some of the underfives and pregnant women attend MCH clinic services in nearer health facilities but we do not know whether this is happening. Given the high maternal and underfives mortality rates in the country and a vaccination coverage that is probably below 80%, we want to reach these vulnerable target groups.

Underfives attendances and ANC clinic attendances increased in the outreach stations, compared to 2007 while attendances of > 5 decreased . Comparison with 2007 is however complicated by the fact the villages covered by the team this year are not fully identical with those in 2007. Children above 5 years and adults are not our target groups so we do not hope for increase in their attendance.

Table 3: comparison of outreach attendances of the years 2007 – 2008

Outreach clinic attendance	**2008**	**2007**	
UFC (preventive & curative)	2813	2221	27% increase
Adults and children > 5	111	130	15% decrease, but not a real target group!
ANC	1244	1088	14% increase in Antenatal attendances.

3.2. Outpatients

In general the OPD attendance stayed about the same compared to 2007, but particularly in the static < 5 and ANC clinic attendances have slightly dropped, as the tables below show. We do not exactly know why this is happening. Whether it is related to the financial accessibility of services or more to the quality of services. Or maybe people use the smaller health units more for primary care. Admissions and outreach attendances increased so the decrease is not an overall decrease in uptake of services.

*Table 4: Hospital Outpatients **2007***

	Jan	**Feb**	**Mar**	**Apr**	**May**	**June**	**July**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Total**
< 5 years	455	478	484	444	456	466	326	264	348	371	316	158	**4537**
> 5 years & adult	634	692	617	908	1162	1031	782	362	303	699	739	503	**8432**
Antenatal	157	259	247	185	188	146	122	110	116	122	130	129	**1911**
Total	**1246**	**1429**	**1348**	**1537**	**1806**	**1614**	**1230**	**736**	**767**	**1192**	**1185**	**790**	**14880**

*Table 5: Hospital Outpatients **2008***

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
< 5 cur & prev.	309	327	359	343	383	351	334	377	357	550	350	283	**4323**
> 5 years & adult	610	766	826	801	947	764	874	793	729	680	610	579	**8979**
ANC	177	179	176	163	153	133	100	111	109	123	112	80	**1616**
Total	**1096**	**1272**	**1361**	**1307**	**1483**	**1248**	**1308**	**1281**	**1195**	**1353**	**1072**	**942**	**14918**

The figures for underfives attendance (both outreach and static) need some clarification. All underfives are registered in one book irrespective of whether they attend for preventive services (weighing and vaccination) or for curative services because they are ill. When comparing the total number of underfives attending with those who have been treated by the nurse or CHO we see that on average approximately 60% come for treatment (as well).

Table 6: % of attending underfives at static clinic seeking treatment and not (only) preventive services

Static OPD	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
% Treated	*57%*	*56%*	*62%*	*64%*	*53%*	*57%*	*49%*	*48%*	57%	71%	69%	75%	*60%*

The proportion of attending children who are sick and treated is much higher in the outreach clinics than in the static. The outreach team is monitoring the reason for attendance (vaccination only, illness only, both) since May 2008 and we observe that generally over 80% of all underfives is reported sick and treated, mainly for malaria and/or ARI.

*Table 7 : **Outreach** Outpatients 2007*

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
< 5 years	138	256	217	105	348	213	155	56	212	208	181	132	**2221**
> 5 years & adult	7	7	16	8	39	9	11	5	7	8	7	6	**130**
Antenatal	83	155	71	67	126	131	79	37	59	95	91	94	**1088**
Total	**228**	**418**	**304**	**180**	**513**	**353**	**245**	**98**	**278**	**311**	**279**	**232**	**3439**

Table 8 : Outreach Outpatients 2008

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
< 5 years	178	209	224	310	372	236	302	288	147	163	259	125	**2813**
> 5 years & adult	11	10	14	16	16	5	10	13	8	5	2	1	**111**
Antenatal	112	153	162	193	162	79	88	76	49	46	67	57	**1244**
Total	**301**	**372**	**400**	**519**	**550**	**320**	**400**	**377**	**204**	**214**	**328**	**183**	**4168**

The total number of underfives and pregnant women attending outreach services is increasing when comparing 2007 with 2008. This however may be the result of quitting some and adding other outreach villages. So the target population has changed and maybe not so much the health seeking behavior. When we look at individual outreach villages such as Bomie and Kamboma which have been covered since before the war, we observe gradually decreasing numbers of attendance.

Adult and > 5 years Outpatient morbidity

To get a general impression of the morbidity of adults attending the OPD we reviewed all diagnoses made in February 2008. The result is presented below. It may well be that the morbidity figures will be slightly different in other months but the top 10 will probably not change much.

*Table 9: Main diagnoses among **adults** treated at the OPD 2008*

Diagnosis	**February 2008**
1. Malaria	30%
2. Peptic Ulcer Disease (PUD) and gastritis	22%
3. RTI / ARI	8%
4. Schistosomiasis (Mansoni)	7%
5. STI	5%
6. Hypertension	4%
7. Hernia	3%
8. Urinary Tract Infection UTI	3%
9. TB suspect	3%
10. Eye problems	2.5%
Others: - Worms - GE / EH - Onchocerciasis - Cardiac failure - Skin infections - Arthritis - Dental problem	1% - 2% Typhoid only 5 cases (=0.5%)

The high prevalence of gastric problems and peptic ulcer disease among adult Sierra Leonese people is striking. Apart from the Helicobacter Pylori bacteria apparently endemic in this area, the lifestyle and food habits may contribute as well. Cola nuts for instance are very popular in this area while not good for people with gastric problems. The same holds for strong peppers and alcohol. However more study is needed to better understand why peptic ulcers and serious gastric problems are so endemic here. We see also serious complications of PUD such as gastric perforations and bleeding.

The 30% malaria diagnosis also deserves some attention as we do not expect a lot of clinical malaria among adults who grew up in a malaria endemic area. It may be that a history of fever and / or headache is too easily diagnosed as malaria. (see also below)

Underfives morbidity at OPD

Malaria is diagnosed in at least three quarters of all underfives children both in Panguma and in the outstations. The laboratory of the hospital finds malaria parasites in 99% of all blood slides. A positive blood slide however is not a very good indicator for clinical malaria. The entire catchment population may have parasites in the blood. Being ill is not the same. However, a course of ACT (Amodiaquine + Artemisine combined treatment) is not considered harmful for small children who have not yet built up sufficient immunity for malaria, even if the child has no clinical malaria. Treating all ARI as an illness that needs antibiotics however is not always appropriate and may be harmful. We need to strengthen the diagnostic competence of our clinicians so that they better distinguish between a common cold and a serious lower respiratory tract infection such as pneumonia.

Often the double diagnosis of ARI/malaria is made for children attending outreach and static clinics and as a result many under fives are treated with multiple drugs to address both diagnoses and often other less essential drugs are added such as paracetamol, folic acid or multivitamin.
Special attention should go to the outreach team who seem to treat a high percentage with medication.
It is known that the people also ask for a lot of medication, when you do not prescribe medicine they might think you are not a good health care worker.
There is a need for more education to the outreach team and the people in the villages that antibiotics and other medications are not always necessary and over prescription can be harmful.

*Table 10: Main diagnoses among **underfives** treated at the OPD in 2008*

Disease diagnosed	**Jan 2008**	**June 2008**	**Comments**
Malaria	49%	55%	Malaria: 75% - 80% ---------- ARI: 28% - 33 %
ARI/Malaria	26%	26%	
ARI	7%	2.5%	
GE / DD / EH	19%	3 %	*Difference not only seasonal. Also dependant on who diagnoses.*
Skin infections	6%	20%	*Seasonal?*
Malnutrition	0%	4.5%	*Seasonal related to poverty, earning power?*
Eye infection	2%		
Other observations made on the basis of treatment ledger: *Almost all children receive more than 4 drugs for any disease while many of them are not clinically ill when seen by the nurse or CHO. There is a need for education and coaching on this issue*			

The morbidity pattern of children attending the outreach clinic in the various villages does not really differ from the static clinic figures except that diarrhoeal diseases are far less diagnosed in outreach villages. We do not yet fully understand why, but the access to clean drinking water is probably among the reasons why GE is not a very prevalent problem in the community.

3.3. Inpatients

As said before, the admissions have significantly increased in all wards compared to 2007. The hospital is rendering its inpatient care to more people and the communities express repeatedly their appreciation of the obstetric and surgical care.
Admission figures dropped sharply last year (2007) during the absence of the doctor (July-September) due to his annual leave and elections in Sierra Leone. This year admissions have not decreased in spite of the hard economic times for people in July and August.

Table 11: Inpatients/admissions (all wards) ***2007***

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec	Tot
< 5 children	15	25	48	69	91	83	48	40	29	55	60	36	**599**
> 5 Male	28	19	44	58	47	44	39	20	24	49	40	33	**445**
> 5 Female	30	26	29	34	18	35	19	16	15	24	25	12	**283**
Maternity	21	19	36	37	34	40	20	11	12	24	18	18	**290**
TB & leprosy	26	13	20	14	25	25	17	8	14	23	20	18	**223**
TOTAL	**120**	**102**	**177**	**212**	**215**	**227**	**143**	**95**	**94**	**175**	**163**	**117**	**1840**

Table 12: Inpatients /admissions (all wards) ***2008*** *(January –December)*

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
< 5 children	39	33	57	87	80	85	73	*91*	70	82	67	61	**825**
> 5 Male	44	63	55	61	70	29	57	*71*	50	45	59	32	**636**
> 5 Female	21	21	38	24	21	31	34	*43*	28	27	41	24	**353**
Maternity	27	25	31	31	37	34	23	*20*	21	24	22	22	**317**
TB & leprosy	19	19	22	20	23	25	32	*31*	26	12	33	25	**287**
TOTAL	**150**	**161**	**203**	**223**	**233**	**204**	**217**	***256***	**195**	**190**	**222**	**164**	**2418**

Morbidity among admitted children

Malaria remains the major cause for admission of children as the figures below show. Second most frequently diagnosed health problem among children < 5 years is acute respiratory tract infection (ARI) which are particularly common in the rainy season. This has changed over the years and the percentage has gone down. Malnutrition is common in the months of June-August as people suffer from inadequate financial resources to take properly care of the children. Lassa is on the rise as one of the main diagnoses and causes of death among children but also among adults. Black vomit among small children is another problem increasingly observed among children and often resulting in death (see below in paragraph on death)

Table 13: Morbidity trend over time among admitted children (2006-2007-2008)

2006 Sept-Dec	2007 Jan – Dec	2008 Jan - Dec
Malaria +/- anemia 67%	Malaria 64%	Malaria 67%
Respiratory tract infections 16%	Respiratory tract infections 10%	Respiratory tract infections 6%
Dehydration	Malnutrition 4%	Gastroenteritis/diarrhea 5.3%
Malnutrition 3%	Meningitis	Malnutrition 5%
Gastro enteritis/amoeba/DD 2.5%	Gastroenteritis/amoeba/DD 2%	Lassa 2.4%
Worms	Hypoglycemia	Meningitis 2.2%
	TB	
	Lassa 1%	
	Typhoid	
	Herbal intoxication	

Adult inpatient morbidity

Adults were primarily admitted with gastric problems and peptic ulcer disease. Hernias and to a lesser extent Hydrocele are common among the admitted men. Since our hospital has opened its surgical department in March 2007 a lot of men come from within and far beyond our catchment area to be operated on an often longstanding hernia or Hydrocele. Few hernias were strangulated, most hernia operations were elective and contributed significantly to the income of the hospital.

Morbidity Female Ward Jan-Dec 2008

Malaria	17.6%
Tuberculosis	8.7%
Peptic ulcer disease	8.7%
Cardiac failure	6.2%
Pneumonia	6%
S. Mansoni	4.6%
AIDS	4.3%
Worminfestation	4.3%
Typhoid	3.7%
Anaemia eci	3.5%
Hypertension	3.2%
GE	3.2%
Meningitis	2.1%
Breast abcess	1.6%
Lassa fever	1.4%

Morbidity Male Ward Jan-Dec 2008

Hernia	28%
PUD	14%
Hypertension	8.4%
Tuberculosis	5.5%
Pneumonia	3.6%
Trauma	3.6%
Malaria/anaemia	3.1%
Typhoid fever	2.9%
Anaemia	2.6%
Cancer	2.6%
Tropical ulcer	2.4%
Lassa	2.3%
AIDS	2.3%
Acute abdomen	2.4%

Morbidity Maternity Ward 2008

STI	28%
Malaria in pregnancy	27%
UTI	16%
Abortion	11.6%
Retained placenta	8%
Anaemia	7%
Lassa	2.3%
Hepatitis	3%
Ectopic	6.9%
TB	2.3%

In the future more attention should be paid to the registration system of morbidity in various wards.

Inpatient mortality / deaths

Malaria remains the big killer among small children as long as they have not yet built up sufficient immunity
for malaria. Once they have grown a few years older they no longer get so seriously ill from malaria.

The second cause of death in small children is black vomit. Almost all children who come with this symptom of black vomit die and until now we are not fully sure what is causing the black fluid in the stomach of these children. Initially we thought that the black vomit was caused by the intake of local herbs and in the annual report of 2007 we mentioned intoxication by local herbs among the causes of death. We further investigated other possible causes of the black substance. A few international articles mention black vomit as a symptom of Lassa and of Yellow Fever. Parents of the children who died also informed us about the use of blood syrups (containing ferrous) at home and we considered ferrous intoxication as a possible underlying cause of death. By September 2008 the black vomit symptom was still not fully understood as belonging to one particular disease. More research is needed and consultation of other hospitals in the neighboring districts could possibly shed more light

on the cause(s) of black vomit. Kenema, Segbwema, Gondama, Bo may be approached to see whether they have similar cases. The possibility of yellow fever needs more research as we found few children with black vomit and jaundice in 2008. Maybe yellow fever is endemic in our area. Yellow fever is included in the vaccination package of children under one year but the vaccination status of children in our area is not satisfactory. (See also chapter 4).

Yellow fever

In December 2008, 3 cases of yellow fever in BO area were confirmed. In January 2009 a mass vaccination campaign in this area was organized by the government together with Medicine Sans Frontiere.
Also one positive yellow fever case was found in Panguma. The WHO came to examine the area and will stay in close contact with the hospital. It is only from this time that they are able to test for yellow fever in the Kenema lab in Sierra Leone, the confirmation tests still have to be done in Dakar, Senegal. Since only one case in Kenema district has been confirmed there is no need for mass vaccination yet, but we will now continue to send samples to the Kenema laboratory of jaundiced patients suspect for yellow fever.
Since yellow fever could be one of the causes of black vomit, special attention should be paid to these patients, and isolation is mandatory.

Table 14: Causes of deaths among inpatients 2008 (January – Dec 2008)

Children ward	**# 111**	**%**	**Male ward**	**# 66**	**%**	**Female ward**	**# 39**	**%**	**Maternity**	**# 9**	**%**
Malaria	36	32.4%	TB	8	12%	Lassa	7	25%	Lassa	2	22%
Black vomit	13	12%	Lassa	5	7.6%	Cardiac failure	7	18%	Septic shock	2	22%
Lassa	10	9%	Cardiac Failure	10	15%	AIDS	7	18%	Diabetic coma	1	11%
Pneumonia	8	7%	Gastric Bleeding	4	6%	TB	4	10%	TB	1	11%
Malnutrition	8	7%	Tetanus	3	4.5%	GI bleeding	2	5%	CCF	1	11%
Meningitis	5	5%	Malignancy	3	4.5%	Malignancy	2	5%	Spinal shock	1	11%
Yellow fev	1								Ectopic	1	11%

Death rates among admitted children decreased compared to 2007. The percentage is lower than in 2007 and the coming months of September - December will likely lower the % even more as death rates tend to drop in this period. We hope that the annual death rate for admitted women will also drop but lassa and HIV/AIDS are on the rise and death not easily preventable among the affected ones.

Table 15: death rates 2008 versus 2007

	Children's ward	***Male ward***	***Female Ward***	***Maternity***
2008	*14,7%*	*11.6%*	*12.5%*	*2.8%*
2007	*20%*	*11%*	*12%*	*1.7%*

The table above shows a decrease in deaths among the admitted children which might be due to the possibility of blood transfusions in severely anaemic children with malaria. The other wards show a very slight increase which may be due to the increasing percentage of HIV/AIDS and LASSA. The reason for the rise in maternity is not known, but just a few severe fatal cases more already give a great raise in percentage with small numbers like this.

Bed occupancy and length of stay of inpatients

The average number of beds occupied (bed occupancy) in the hospital in 2008 during the first 7 months was 83 and the average length of stay in the hospital differed per ward with TB patients staying longest (due to national protocol of 2 month directly observed treatment in the intensive treatment phase) and children remain the least number of days. The duration is not only dependant on the seriousness of the illness but unfortunately also on the ability to pay the bill. Quite a few families need to mobilize their extended family during or after recovery.

Table 16: Bed occupancy state and average length of stay of inpatients in Panguma Hospital 2008 (Jan-July)

Ward	Total number of beds occupied	Bed occupancy state	Average length of stay
Children ward	3446	16	7,6 days
Male ward	5086	24	13,4 days
Female ward	2506	12	13,2 days
Maternity ward	2027	10	9,8 days
TB ward	4708	22	29,4 days
Total	**17.773**	**84**	

3.4. Laboratory

The laboratory provides services to both inpatients and outpatients. The main work done by the small team of laboratory technicians covers:

1. Blood tests
    a. Blood-grouping (for transfusions)
    b. HIV
    c. Hepatitis B and C
    d. Syphilis
    e. Malaria
    f. Sickle cell
    g. Hemoglobin
    h. White blood cell count
    i. Gramstain
    j. Glucose
2. Stool tests
    a. Schistosomiasis Mansoni
    b. Intestinal worms: Hookworm, Ascaris, Trichuris trichiura
    c. Strongyloides
    d. Amoeba , Lambliae
3 Urine tests (a)
    a. Schistosomiasis haematobium
    b. Sugar
    c. Protein
    d. Sediment/Gramstains
4 Vaginal smear: Trichomonas vaginalis / STI
5 Pregnancy test
6 Skin snipping for detection of oncocerciasis / leprosy
7 Sputum tests for pulmonary TB. Results are crosschecked in Freetown for those on DOTS
8 Lassa blood tests are done in Kenema (blood sent there)

The laboratory adheres to the national safe blood services protocol of the MoHS and monthly reports are sent to the MoHS on blood screening, donations and transfusions.

Results
The main laboratory test results are found in an appendix to this report.
Main results were as follows

Table 17: laboratory results for main tests done in 2008 (January – July)

Test		2008 (7/12)	2007 (12/12)
Blood slide for MPS	Malaria+	99%	98.5%
Blood transfusions	To maternal cases	12%	8%
	To children	75%	64%
	To adults (F/M)	13%	28%
Blood donors (tested 343)	HIV+	2%	1.8%
	Hepatitis B	5%	2.6%
	Hepatitis C	1.7%	4%
	Syphilis	< 0.2%	0%
TB screening (461 tested)	Pulmonary (sputum) +	19%	?
	Pulmonary (sputum) -	81%	?
Skin snip (247 tested)	Oncocerciasis +	7.3%	9.4%
Stool tests	Schistosomiasis Mansoni	17%	25%
	Hookworm	4.8%	7%
	Other intestinal parasites	< 1%	

3.5. Theatre

The theatre is fully functional since April 2007. The theatre team was trained, the theatre itself equipped and a competent doctor most of the time available to conduct emergency obstetric and surgical procedures as well as elective procedures. The table below illustrates the increase in patient load since 2007 and 2008.

Table 18a: Comparison patient load theatre over period 2007 - 2008

Major surgery	**2007**	**2008**
	April-June +Sept-Dec	Jan – Dec
Laparatomy (obstruction)	1	3
Hernia	47	131
Strangulated hernia + bowel resection	0	3
Hernia irreducible	4	10
Hydrocele	11	11
Repair scrotum after Fournier	0	2
Supra Pubic Catheter	1	6
Caesarean Section	5	18
Ruptured Uterus	0	3
Ectopic	2	6
BTL (tube ligation)	0	3
Ovary Cyst	0	1
Major wound	3	4
Skin Grafting	0	2
Cyst /Lipoma/Abscess	13	11
Amputation	0	3
Eye removal	0	1
Orchidectomy	0	2
Total	**87**	**217**

The minor theatre procedures increased also according to the staff. In 2007 reporting on minor and major theatre procedures was not very consistently done but dressings were monitored and they increased by almost 50%.
In 2008 approximately 2538 minor theatre procedures were done. Dressings make up a large proportion of this work (89%) Tooth extractions, incisions & drainage and removal of foreign bodies are common also.

Table 18b: Minor procedures during the year 2008

Minor Surgery 2008	**Total**
Aspiration	30
Urethral dilatation	12
Circumcision	2
D & C	6
Debridement	17
Dressing	2259
Ear Syringe	6
Foreign body	14
I & D	105
Suturing	18
Tongue tie	3
Tooth Extraction	66
Total	**2538**

4. Outreach program

The past year 2007 has taught us that the number of attendance in some of our outreach villages does not fully justify the investment of sending an entire team of 4-5 qualified staff twice per month. So we considered it necessary to assess the catchment population and then to reconsider the relevance of going on a two weekly basis to the outreach sites.

In 2008 a household census was done in the villages visited by the outreach team. In Yorgoima 535 people were counted in a total of 58 households. This illustrates the particular context of this area: an average of 9 people in one household is not common and is even more unexpected in an area of high child mortality. Extended families probably live in one household.
Among the 535 people only 51 children < 5 were identified during the house to house census while one would expect 106 underfives (20% of total population) and 21 under-one year (4% of total population). So the outreach will simply never reach more than 10 children for vaccinations and weighing because the year group of < 1 year is not bigger unless many children from neighboring communities will attend.

In response to the small numbers of attendances in several outreach villages and the high demand of underfives for curative services, we changed our approach this year. We want to pay more attention to prevention and decided to visit each village once per month for immunization and curative care and once per month for health education. We have to see whether this approach will raise the attendance during immunization sessions to such a level that we can also provide BCG, measles and yellow fever vaccinations (one vial for 10 children).

Table 19: Population figures outreach communities based on local census 2008

Village	# households	Total population counted	< 5 years counted	< 1 year 20% of < 5 years 4 % of total pop	Pregnant women 4% of total pop
Bomie (7)	85	1144	299 (26%)	46 60 (20% of counted)	46
Kamboma (7)	*No data available yet*	-	-	-	-
Njagor (5)	42	282	49 (17%)	11 10 (20% of counted)	11
Foyah (11)	*No data available yet*	-	-	-	-
Baoma (11)	15	107	27 (25%)	4.3 5.5 (20% of counted)	4
Vaama (14)	*No data available yet*	-	-	-	-
Yorgoima (16)	58	535	52 (10%)	21 10 (20% of counted)	21

Table 20 shows the average attendance of underfives, pregnant women and > 5 people and the figures underscore the low attendance rates in some of the villages and the increase/decrease in some of them compared to 2007

If we look at the table we see that for instance in Foyah on average per month (2 visits) 18 pregnant women attend, so 9 per clinic day and 12 underfives per clinic day. Too small numbers to open a vial of BCG, measles or yellow fever. In Bomie and Kamboma average numbers are considerably higher and all immunizations can be given there.

Table 20: Average monthly attendance MCH care

Village	**2007 (whole year)**			**2008 (Jan – July)**		
	UFC	***> 5 years****	**ANC**	**UFC**	***> 5 years***	**ANC**
Bomie	58	*3*	35	53	*2.5*	30
Kamboma	53	*2*	28	46	*2*	30
Njagor	20	*2.5*	8	15	*1*	5
Foyah	14	*0.5*	8	24	*1*	18
Baoma	19	*1*	5.5	29	*0.5*	18
Yorgoima	n.a.	n.a.	n.a.			
Vaama	n.a.	n.a.	n.a.			

** The category > 5 is NOT a target group of outreach program but reporting includes this info.*

The attendance increased in Foyah and Baoma, while in the villages that have been covered ever since before the war the attendance slightly dropped or remained equal.
In Baoma and Yorgoima children and pregnant women from neighboring villages attend as the expected target group of < 1 year and of pregnant women is smaller. The under one year group and pregnant women target group for instance in Baoma, based on house to house census in 2008, is approximately 5 (4% of total population) while on average in 2007 18 pregnant women attended and 29 underfives of whom the majority under 1 year

The majority of attending children – up to 80% in some villages – are seen by the nurse or CHO in the outreach team in order to get treatment for malaria, ARI, skin infections, etc. Relatively few children attend primarily for preventive services. The vaccination coverage of the children in our catchment area is not known but our experience with Road to Health Cards teaches us that there is much room for improvement! There is a clear gap between those who got their BCG vaccination and those who received all vaccinations.

Table 21: Total vaccinations given during 2007 and 2008

Vaccination	**2007**	**2008**
BCG	1102	1142
Pentavalent 1	341	456
Pentavalent 2	250	406
Pentavalent 3	393	462
Measles	654	595
Yellow Fever	578	551
TT pregnant women	1438	1244
TT non-pregnant women	160	245
Total	**4916**	**5101**

If we want to fully vaccinate the under-one year group in our catchment area we expect to give out approximately the same quantity of vaccinations in a year. However, the total number of BCG is in both years almost twice as much as measles and yellow fever. Maybe children attend other health facilities for immunization but why would they come for BCG then to our hospital.
Partly these are the children born in the hospital; before they go home they get BCG vaccination. But since this is a small percentage it can not explain the great difference.
The ratio BCG/Yellow fever has slightly changed: 46% in the first 6 months of 2008 versus 52% in 2007. Yellow fever vaccine as well as measles and BCG are only provided in those outreach sites where the attendance justifies the opening of a new vial for 10 doses. So Njagor, Foyah and Baoma will not benefit much from the vaccination program. Mothers still have to come to Panguma or go to another health facility to have access to measles, yellow fever and BCG. As we saw several children dying of/after black vomit which is a symptom of yellow fever, we will have to put more effort in ensuring yellow fever vaccination coverage! We need to find out more about the vaccination status of

the underfives around us. Are they covered by national immunization days/campaigns? Are many of them only partially vaccinated though already above one year?

Morbidity of UFC and pregnant women in outreach villages

Of all attending underfives the vast majority (approximately 80%) is treated for some (minor) illness and far fewer children attend for vaccinations. In August 2008 only 14% of attending children came for a preventive service (vaccination/weighing). Over 85% were treated. Mothers are busy planting and chasing birds in the rice fields. They do not give priority to preventive health services in this busy season. Over 80% - 90% of sick children are diagnosed as cases of malaria and/or ARI and treated accordingly. Other health problems seen are intestinal pathogens (diarrhea and worms infestation) and skin problems. Few cases of malnutrition and anemia. Among pregnant women respiratory infections (2%) and sexually transmitted diseases (up to 8% in some clinics) were diagnosed most though still among a very small % of the pregnant women. Most pregnant women are healthy and primarily visit the clinic for regular check up and intermittent prophylactic malaria treatment with Fansidar.

5. Lassa

In the course of the **first 8 months of this year** (2008) a total of 18 admitted patients (all ages) died of (suspected) Lassa in our hospital and 13 of the 26 referred cases died in Kenema in the Lassa Ward. Not all because of Lassa as explained below.

Case fatality

Of the 26 suspected Lassa cases referred:
- 13 were tested positive for Lassa and 5 of them died in KGH (4 due to lassa, one to GE)
- 8 were tested negative for Lassa and 3 of them died in KGH
- 5 were not tested or no test results were received and 2 of them died

So in total 10/26 referred suspected lassa patients died while the remaining 16 recovered.

In addition to the 10 deaths (5 confirmed Lassa; 3 Lassa negative and 2 unknown) in Kenema Government Hospital's special Lassa Ward, 18 patients with Lassa (or suspected Lassa) died in Panguma hospital before we could send them for treatment in Kenema. 10 of the 18 who died had a confirmed positive Lassa test while 8 were diagnosed as Lassa cases by our medical personnel on clinical grounds.

The case fatality proves much higher in Panguma hospital: all 10 confirmed Lassa patients died while in the Lassa ward 5/13 Lassa positive patients died. The Lassa ward can treat Lassa, we can do little except referring but for children it is often too late!!

Age

Of the 26 referred suspected lassa cases: 2 were < 5 years of age; 4 between 5 -15 years; 20 > 15 years.
Of the 18 Lassa deaths in our hospital 11 were children < 8 years of age and 7 were adults > 18 years.
Of the 10 lassa deaths among the 26 referred cases 3 were children < 8 years and 7 were adults.
Children often came in a late stage, too late for referral and treatment in Kenema. Many adults could be referred though 7 died in Panguma. 77% of all referred cases were adults.

Access to treatment

The vast majority of all admitted lassa patients in KGH are referred cases from Panguma. In 2008 our referred cases represent apparently over 90% of all admissions (approximately 35 till now) in the Kenema Ward. This underscores the need for direct access to – at least initial - treatment here in Panguma. Patients die unnecessarily because they cannot be treated here with the antiviral drug **Ribavirin** which is the only effective treatment for Lassa fever if given early on in the course of clinical illness. Referral to Kenema is time and resources consuming.

We are on a continuous basis in contact with the district Kenema and with the Ministry of Health and Sanitation about access to initial doses of Rivabirin and about early referral and transport with the Lassa ambulance.

Our hospital is not only committed to effective and timely referral and treatment of lassa patients but also to the prevention of lassa. We have been educating relatives of infected lassa patients, went to several schools to teach about lassa prevention and control and we promote cats because they can kill the rats who carry the lassa virus. We sensitize people about the harmful risk of eating rats and the benefit of not eating cats. We encourage people to come timely for treatment when there is prolonged fever without clinical symptoms of malaria.

In **2007** a total number of 17 patients referred by our hospital were admitted in the Lassa Ward in Kenema according to figures given by the Lassa Program. By then we were not yet monitoring our lassa information so well as we do now. Of the 17 patients, 2 were < 5 years of age, 4 between 5 -15 years and 11 older than 15, so the majority (65%) of referred patients were adults. Of the 17 admitted patients in KGH 7 died and 10 were discharged resulting in a case fatality rate 2007 of 41%
Lassa program staff visit our area regularly for follow up of previous patients, of data collected by our hospital and for sharing ideas on improved lassa control..

6. HIV/AIDS

Different target groups were tested for HIV in our hospital for different reasons.

- First of all potential blood donors are screened for HIV, Hepatitis-B and Hepatitis-C as well as for syphilis in order to donate safe blood to patients who need blood.
- A second large group are the pregnant women coming to our hospital for antenatal care. According to the national Program on Mother To Child Transmission (PMTCT) all pregnant women are tested for HIV after pre-test counseling. In practice only 20% (393 pregnant women) was actually tested as the available tests were often not sufficient and time not always available due to limited staff capacity. The coordinator of the PMTCT program is also in charge of the maternity ward. A monthly report is sent to the district on the results of this program.
- A third target group for HIV testing are TB patients who according to the national protocol need to be tested all and for the same reason of time and test supply constraints only part of them were actually tested for HIV.
- A fourth group are those coming for voluntary counseling and testing. The matron is responsible for this service and was trained together with a few other staff members of the hospital on VCT. The test results indicate that many of those who accessed the VCT services were highly at risk to be found HIV positive because 25% was tested HIV+ , un unusual high percentage. We may need to monitor more clearly who the VCT users are in order to better understand test results.
- The fifth group are patients are suspected of having AIDS or being HIV positive on clinical grounds. They are referred to the laboratory by the medical staff of the hospital. In **2007** a HIV prevalence rate of 11% was found in this group against 1.8% among blood donors.

Our hospital now has the capacity and resources to treat those HIV patients who are eligible for ARV treatment (CD count below 350). However we do not have the laboratory facility for CD4-counting. This is done in Kenema Government Hospital. Most of the AIDS patients who accessed ART this year died within 1-2 weeks because they arrive in a late stage, usually from another town where they had been living.

Table 22: HIV test results 2008 (first 7 months)

Target group	**Blood donors**	**Patients** tested at request of medical staff e.g. TB patients and others suspected of HIV	**Pregnant women** PMTCT program	**VCCT users** Relatives of AIDS patients, people who suspect themselves to be HIV+ and some hospital staff
Period covered	Jan – August 2008 (8 months)	Jan – August 2008 (8 months)	Sept 07 – Aug 08 = one full year	Oct 07 – Sept 08 11 months
# tested	343	164	**393**	**79** 41 women - 39 men
# HIV+	**7** 2 men and 5 women	**22** 6 men and 16 women	**12** 6: HIV-1 1: HIV-2 5: HIV-1+2	**25** 21: HIV-1 3: HIV-2 1: HIV-1+2
% HIV+	**2%**	**13.4%**	HIV+: **3%**	**32%!!** 41% of female users 21% of male users male
Age of HIV+			15 – 19: 2 20 – 29: 6 30 – 39: 4	15-19: 1 20-29: 9 30-39: 8 > 40: 7

So 2% of blood donors were HIV positive, 13.4% of patients sent for testing (suspects) by medical staff were tested HIV+; 3% of the pregnant women and 32% of those voluntarily tested (but probably

suspecting to be positive).

In **2007** the HIV prevalence among 349 potential blood donors – a rather representative sample of the general population – was fortunately quite low. Of the 225 men tested 6 (= 2.4%) were found HIV+ and of the 129 women tested, only one woman (= 0.77%) was found positive. So 2% of potential blood donors were HIV+ in 2007

33 patients (inpatients suspected of AIDS and some TB patients) were tested for HIV. Of this group 11 (=33%) were found positive. Of these HIV+ patients, 8 were women and 3 were men. The HIV prevalence among these 33 patients is of course higher than among the blood donors because these 33 patients were more likely to be HIV positive (association TB-HIV and some suspected of AIDS on clinical grounds)

In **2008 in the period January – August (7 months)** a total number of **7** people were found HIV+ among the 343 potential blood donors. This makes 2%, the same as in 2007.
164 patients (TB and AIDS suspects) were tested for HIV. The HIV prevalence among them was 13.4%, so high because of the fact that suspects were among the tested ones.
AIDS was among the main causes of death in the female ward in the first 8 months of 2008.

7. Epilepsy and diabetes

Epilepsy

In the course of 2007 and 2008 one of the senior nurses was trained in diagnosis and treatment of epilepsy. Since then we sensitized our own staff as well as some of the outreach communities and visited several homes of epileptics. Much emphasis is laid on awareness raising. Epilepsy is not contagious and fits can be controlled by medication. In that sense the message is simple but people have strong beliefs that epilepsy cannot be treated by health facilities and that the frothy saliva is very contagious!

As a result of successful treatment of several patients others come to the hospital now as well and the figures below show that local communities have started to have confidence in the treatment offered by Panguma.

Total registered epileptic people since November 2006: 60
- *Seen as outpatient:* *56*
- *Seen as inpatient* *4*

Number of epileptics compliant to treatment by Panguma hospital 34
Number of epileptics referred to health facility nearer to their homes: 8 (Kenema, Bo, Kono)
Number of defaulters or not put on maintenance dose after admission 18 = 30%

So 57 % of all registered epileptics are treated on a regular basis by Panguma Hospital staff. 13% of epileptics have been referred to other health facilities in places near their homes and most of them are compliant according to informal reporting.
18 epileptics are no longer coming for their monthly maintenance dose. It needs follow up to see why they dropped out and whether we can motivate them to seek treatment again.

17/60 cases are younger than 16 years old and 37/60 are male and 23/60 are female. So the majority of registered epileptics are adult males.

Diabetes

Currently 11 young male and female diabetic patients are treated with insulin injections which they administer themselves. Unfortunately it is very difficult to find insulin in Sierra Leone so we get it from abroad, partly as a Austrian donation from an NGO "*Insulin zum Leben*", partly through the Charity Fund. Other diabetic patients are put on an oral maintenance medication. One of the senior nurses has been trained on the job to treat these patients and do the follow up if necessary.

8. Appendices 2008 first 7 months of the year 2008

1. Basic statistics January – July (7 months)
2. Minor and major theatre procedures 2008
3. Comparison outpatients attendances 2007 – 2008
4. Causes of death among inpatients 2008
5. Laboratory results, comparison 1991, 2007 and 2008

Appendix 1. Annual report statistics 2008 January- July (7months)
Corresponds to electronic database for monthly reports

Attendance static +outreach	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**	**TOTAL**
Under Fives outpatients static and outreach	487	536	583	653	755	587	627	665	561	586	613	420	**7073**
Above Fives outpatients static and outreach	621	776	840	817	963	769	884	806	795	735	659	580	**9245**
In Patients (all wards incl TB)	150	161	203	223	208	179	187	256	245	190	189	164	**2355**
Ante Natal static and outreach	289	330	338	356	346	212	190	187	158	169	179	137	**2891**
Total	**1.547**	**1.803**	**1.964**	**2.049**	**2.272**	**1.747**	**1888**	**1914**	**1759**	**1680**	**1640**	**1301**	**21.564**

Attendance OPD Hospital (static)	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**	**TOTAL**
Underfives (preventive & curative)	309	327	359	343	383	351	334	377	357	550	350	283	**4323**
Underfives (curative)	*176*	*184*	*222*	*221*	*202*	*200*	*158*	*182*	*204*	*393*	*243*	*213*	***2598***
Above Fives (male and female)	610	766	826	801	947	764	874	793	729	680	610	579	**8979**
Ante Natal	177	179	176	163	153	133	100	111	109	123	112	80	**1616**
Total	**1.272**	**1.456**	**1.583**	**1.528**	**1.685**	**1.448**	**1466**	**1281**	**1195**	**1353**	**1072**	**942**	**14.918**
Underfives treated as % of UFC attending	*57,00%*	*56,30%*	*62,00%*	*64,00%*	*53,00%*	*57,00%*	*49,00%*	*48%*	57%	71%	69%	75%	60%

Attendance Outreach (2x per month)	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**	**TOTAL**
number of outreach sites	***5 villages***	***7 villages***	***8 villages***	***7 villages***	***7 villages***	***7 villages***	***7 villages***						
Underfives (preventive and/or curative services)	178	209	224	310	372	236	302	288	147	163	259	125	**2813**
> 5 years	11	10	14	16	16	5	10	13	8	5	2	1	**111**
ANC	112	153	162	193	162	79	88	76	49	46	67	57	**1244**
Total	**301**	**372**	**400**	**519**	**550**	**320**	**400**	**377**	**204**	**214**	**328**	**183**	**4168**
Underfives treated as % of UFC attending						*80%*	*81%*	*85%*					

Inpatients hospital 2008	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**	**TOTAL**
Children Ward	39	33	57	87	80	85	73	91	70	82	67	61	**825**
Male ward	44	63	55	61	70	29	57	71	50	45	59	32	**636**
Female Ward	21	21	38	24	21	31	34	43	28	27	41	24	**353**
Maternity Ward	27	25	31	31	37	34	23	20	21	24	22	22	**317**
TB & leprosy	19	19	22	20	25	25	30	31	26	12	33	25	**287**
Total	**150**	**161**	**203**	**223**	**233**	**204**	**217**	**256**	**195**	**190**	**222**	**164**	**2.418**

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Death inpatients 2008	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**	**TOTAL**
Children Ward	4	8	8	16	11	11	12	14	11	12	7	8	**122**
Male ward	4	5	8	4	7	8	9	10	7	4	3	5	**74**
Female Ward	4	7	2	5	3	3	5	5	2	4	2	2	**44**
Maternity Ward	1	0	0	0	2	1	0	0	2	1	2	0	**9**
TB & leprosy Ward (died in TB ward)								0	1	0	0	0	**1**
Total	**13**	**20**	**18**	**25**	**23**	**23**	**26**	**29**	**23**	**21**	**14**	**15**	**250**

Vaccination	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**	**TOTAL**
BCG	96	116	112	99	105	104	73	60	84	116	104	73	**1142**
polyvalent P1	43	53	74	74	38	51	31	25	30	21	17	30	**487**
polyvalent P2	44	45	56	59	63	32	38	18	27	20	19	23	**444**
polyvalent P3	47	65	70	79	39	32	23	26	25	23	18	38	**485**
Measles	49	61	67	67	37	46	28	54	51	45	35	55	**595**
Yellow Fever	42	64	54	54	31	38	28	54	51	45	35	55	**551**
Tetanus - Non Pregnant	23	5	34	32	13	39	15	33	21	28	0	17	**260**
Tetanus – Pregnant	168	99	201	145	89	141	45	72	156	105	0	68	**1289**
Total	**512**	**508**	**668**	**609**	**415**	**483**	**281**	**342**	**445**	**403**	**228**	**359**	**5253**

Blood Transfusion	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**	**TOTAL**
Adult	7	7	28	6	3	7	12	8	4	13	26	25	**146**
Children	4	6	5	42	40	56	52	38	34	59	57	43	**436**
Maternity	2	2	7	8	7	5	7	3	7	4	10	8	**70**
Total	**13**	**15**	**40**	**56**	**50**	**68**	**71**	**49**	**45**	**76**	**93**	**76**	**652**

Deliveries	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**	**TOTAL**
Total number deliveries	**12**	**12**	**11**	**9**	**14**	**11**	**12**	**11**	**13**	**19**	**8**	**7**	**139**

Appendix 2 : Major and minor theatre procedures January - July 2008

Minor Surgery	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**	**TOTAL**
Aspiration	4	1	3	1	0	0	7						**16**
Urethral dilatation	1	0	0	0	3	1	0						**5**
Circumcision	0	0	1	0	0	1	0						**2**
D & C	0	0	1	0	0	0	1						**2**
Debridement	0	1	2	2	4	0	2						**11**
Dressing	131	126	225	258	264	324	278						**1606**
Ear Syringe	1	0	0	1	0	1	1						**4**
Foreign Body	0	0	4	0	5	1	1						**11**
Incision and drainage I & D	8	4	12	6	16	12	9						**67**
Suturing	0	1	5	2	4	2	2						**16**
Tongue Tie	1	1	0	0	0	0	0						**2**
Tooth Extraction	7	11	6	0	12	4	5						**45**
Total	**153**	**145**	**259**	**270**	**308**	**346**	**307**						**1788**

Major surgery (during 7 months)	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**	**TOTAL**
Laparatomy (obstruction)						Total procedures done January – July 2008	***0***	0	0	2	1	0	3
Hernia							***63***	23	10	14	10	11	131
Strangulated hernia + bowel resection							***1***	0	0	0	1	1	3
Hernia irreducible							***10***	0	0	0	0	0	10
Hydrocele							***8***	2	1	0	0	0	11
Repair scrotum after Fournier							***2***	0	0	0	0	0	2
Supra Pubic Catheter							***0***	2	1	1	2	0	6
Caesarean Section							***7***	2	0	7	2	0	18
Ruptured Uterus							***3***	0	0	0	0	0	3
Ectopic							***3***	0	0	1	1	1	6
BTL (tube ligation)							***3***	0	0	0	0	0	3
Ovary Cyst							***1***	0	0	0	0	0	1
Major wound							***2***	0	0	0	1	1	4
Skin Grafting							***2***	0	0	0	0	0	2
Cyst /Lipoma/Abscess							***4***	3	2	2	0	0	11
Amputation							***1***	0	1	0	1	0	3
Eye removal							***1***	0	0	0	0	0	1

Scrotum removal							***1***	0	0	1	0	0	2
Total							***112***	**32**	**15**	**26**	**18**	**14**	**217**

Appendix 3 : Comparison Out- and inpatient attendances 2007 – 2008

	2007	2008	Trend over time
Admissions			
> 5 Male	599	636	Increase
> 5 Female	283	353	Increase
Children	445	825	Increase
Maternity	290	317	Increase
TB	223	287	Increase
Deliveries	115	139	Increase
OPD static			
> 5 Male and Female	8432	8979	Increase
< 5 children	4537	4324	Decrease
% treated	*60%*	*60%*	Similar
ANC	1911	1616	Decrease
Outreach			
> 5 male and Female	130	111	Decrease
< 5 children	2221	2813	Increase
% treated	*?*	*70-85%*	
ANC	1088	1244	Increase
Death rates			
Children's ward	20%	14.7%	Decrease
Male ward	11%	11.6%	Similar
Female ward	12%	12.5%	Similar
Maternity	1.7%	2.8%	Increase

Appendix 4: Causes of deaths admitted patients 2008 (January – August)

Diagnosis deaths 2008	< 5 Child	>5 Male	> 5 Female	Maternity	Total
Malaria complications	30				30
black vomit	9				9
Lassa	8	4	7	2	21
Lassa ? (not confirmed)	4		1		5
Pneumonia	6	2			8
Malnutrition	4				4
cardiac failure		4	4		8
TB pulmonary		8	2		10
TB extrapulmonary	1				1
TB abdomen		1			1
TB meningitis	2		2		4
AIDS			4		4
Gastro enteritis	2				2
prematurity complications	2				2
Toxic mega colon	1				1
Newborn death	1				1
Jaundice	1				1
Peritonitis	1	1			2
Cerebral bleeding due to ?	1				1
kidney failure	1	1			2
hepatic coma	1	1			2
Tetanus		1			1
septic shock gastric		1			1
gastric perforation		1			1
gastric bleeding		3	1		4
Burns + complications		1			1
Meningitis		1			1
Ascitis		1			1
kidney failure?		2			2
Hepatoma		1			1
Poisoning?		1			1
Schistosomiasis		1			1
stroke/hypertension		1	1		2
malignancy larynx		1			1
malignancy abdomen		1			1
Ludwigs Angina		1			1
ascites /amoebic perforation			1		1
Cerebral thrombosis			1		1
black water fever			1		1
Shock due to ?			1		1
Sepsis various causes		1	2		3
septic shock/liver failure?				1	1
Diabetic coma				1	1
Unknown cause	1	1			2
total	**76**	**42**	**28**	**4**	150
Death rate	**16,70%**	**11,00%**	**14.7%%**	**1,90%**	

Appendix 5: Comparison laboratory results 1991 – 2007 - 2008 (January-July)

Laboratory tests	**1991**					**2007**			**2008 (7/12)**		
	Inpatients		Outpatients			**# tests**	**% pos.**		# tests	% pos.	
	# tests	% pos.	# tests	% pos.							
Blood slides for malaria	2554	**59%**	5724	**67%**		**3690**	**98,5%**		3303	**99%**	% malaria + test increasing. Result Specific?
Stool microscopy (all tests)	2004	**34%**	10055	**46%**		**5580**	**33%**				
- Schistosoma Mansoni		**15%**		**24%**			**25%**			**17%**	
- Hookworm							**7%**			**4.8%**	
Sputum of TB	838	**13%**	620	**17%**					461	**19%**	
Skin snip Oncocerciasis	136	**30%**	1803	**33%**		**560**	**9,4%**		247	**7,3%**	Onco decreasing as result of Mectizan program
Urine miscroscopy (all tests)	664	n/a	2525	n/a		**1364**					
- Schistosoma Haematobium							**1%**			**0,5%**	

BLOOD DONORS TESTED AND FOUND POSITIVE WITH HIV, HEP B/C AND SYPHILIS - 2008

NO.	TYPE OF TEST	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
1	HIV	1	0	4	7	4	2	2	7	5	0	0	3	35
2	HEB B	1	0	1	0	2	7	7	5	6	0	6	7	42
3	HEP C	0	1	2	0	1	0	1	0	0	0	0	0	5
4	SYPHILIS	0	4	13	10	5	3	16	5	15	6	0	0	77

PANGUMA CATHOLIC MISSION HOSPITAL
LASSA RESULTS - 2008

NO	WARD	NUMBER TESTED				NUMBER TESTED POSITIVE				NUMBER TESTED POSITIVE & DIED			
		Sept	Oct	Nov	Dec	Sept	Oct	Nov	Dec	Sept	Oct	Nov	Dec
1	CHILDREN'S WARD	2	2	0	0	0	0	0	0	0	0	0	0
2	FEMALE WARD	1	2	2	0	0	0	0	0	0	0	1	0
3	MALE WARD	4	2	1	2	1	0	0	2	0	1	0	1
4	MATERNITY WARD	0	0	0	0	0	0	0	0	0	0	1	0

TB SPUTUM TESTED FOR 2008

- Total number tested → 810
- Total number positive → 152

Percentage positive **18.8%**