

**UGANDA CATHOLIC MEDICAL BUREAU  
UGANDA EPISCOPAL CONFERENCE  
P.O. BOX 2886**

**KAMPALA**



***DRUGS' PRESCRIPTION PRACTICES IN RCC HEALTH FACILITIES***

***A longitudinal study report conducted in  
RCC Hospitals and RCC Lower Level Health Units  
in May 2004 and May 2006***

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A special thank goes to UCMB staff, Monica Luwedde and Charles Kizza for the extensive work done in entering the data in UCMB database.

### **Summary**

*Drugs' Prescription Practices are used as a proxy for Quality of Health Service delivery. The proper use of drugs helps also in containing cost, reducing the burden of expenditures related to un-necessary over-prescription of drugs. UCMB for the first time in 2004 introduced a survey format to be used as tool to monitor the prescription practices in the affiliated health institutions.*

*Two surveys were conducted in 2004 and 2006 using the designed tool. The objective of the surveys was to describe what evolves around the "prescription practices" in terms of number and type of drugs prescribed and the quality of the prescription tools. The surveys are not intended to monitor the adequacy of a prescription with the regards to a specific diagnosed disease.*

*This brief document presents the findings of the longitudinal study carried out in May 2004 and May 2006. The units of analysis are the 27 Hospitals (100%) and the 216 - 226 in 2006 (93%) Lower Level Health Units affiliated to UCMB. When possible comparison with data from Uganda and with standards or guidelines are done.*

*The report presents first an introduction where general description, objectives and methods of the study are presented. The second section offers the findings of the surveys: a first sub-section on Hospitals and after a sub-section on Lower Level Units (LLUs). The results from the Lower Level Health units are summarised and presented in a breakdown per Diocese.*

*The results of the study show that the overall Drugs Prescription Practices have improved both in RCC Hospitals and Dioceses over the period of study.*

## **INTRODUCTION AND BACKGROUND**

One of the aspects of quality of care is prescription and dispensing practices. Previous visits to health units and hospitals have shown that in several instances the quality of drugs' prescription is far from being adequate: poly-pharmacy (prescribing more drugs than those actually required by the pathological condition) is widespread; use of injectables and second or third line drugs instead of the essential prescription is common; dosages are not always those required. There is need to address the problem of drugs' management quality in general and of drugs' prescription in particular. This is needed if we want to improve the quality of our services.

While in the past some degree of lenience towards wrong prescription practices may have had some justification, this is no longer the case after the Publication and distribution of the Uganda Clinical Guidelines 2003.

It is also the belief of the Bureau that practices can be improved through simple observation and monitoring, and not only through training: training alone fails so often to produce results because nobody checks what happens (monitors) after the training. So people go back to old habits, because change, even if understood, is difficult.

For this reason the Bureau has made it a requirement that all hospitals start quantifying and monitoring drug prescription practices annually as a part of health care quality measurement and monitoring.

### ***Objective of the Study***

To monitor drugs' prescription practices in the UCMB hospitals and lower level units Out Patient Departments (OPD) and attribute a Drugs' Prescription Practices Score to Hospital and Dioceses.

### ***Specific Objectives***

- i. To determine the average number of drugs per prescription (this will be referred to as Poly-pharmacy).
- ii. To determine the percentage of antibiotic drugs and injectables drugs as a share of the total number of drugs prescribed
- iii. To determine the frequency at which antibiotic drugs are prescribed
- iv. To determine the percentage of drugs collected as share of the total number of drugs prescribed
- v. To determine the amount paid per prescription
- vi. To determine the quality of prescription measured as percentage of prescription with
  - a. Patient's History
  - b. Objective Examination
  - c. Diagnosis
- vii. To build a Prescription Practice Quality Score

## **METHODOLOGY**

### ***Study Sample***

The surveys were conducted in 27 Roman Catholic Hospitals affiliated to UCMB and in 226 Lower Level Health Units scattered in different parts of Uganda. The study population represents 100% of RCC Hospitals and 93% (216/234) of RCC LLUs.

### ***Study Tools***

A simple tabular open-ended questionnaire was designed and submitted to be filled by the each of the interviewers selected. Interviewers conducted exit pools interviews at each OPD site, after brief orientation training. Forms filled were returned to Uganda Catholic Medical Bureau. The total number of respondents was 2,022 in the year 2004 and 2,060 in the year 2006 (average 75 respondents per hospitals) in the 27 Hospitals while 6,951 in the year 2004 and 8,631 in the year 2006 in the Lower Level Health Units (average 35 respondents per LLU).

### ***Data and Information processing***

Compilation and analysis of data were done using MS Excel. Descriptive statistic analysis was done using Analyse-it for MS Excel (Version General 1.71)

## RESULTS / FINDINGS

### Results from Hospitals analysis

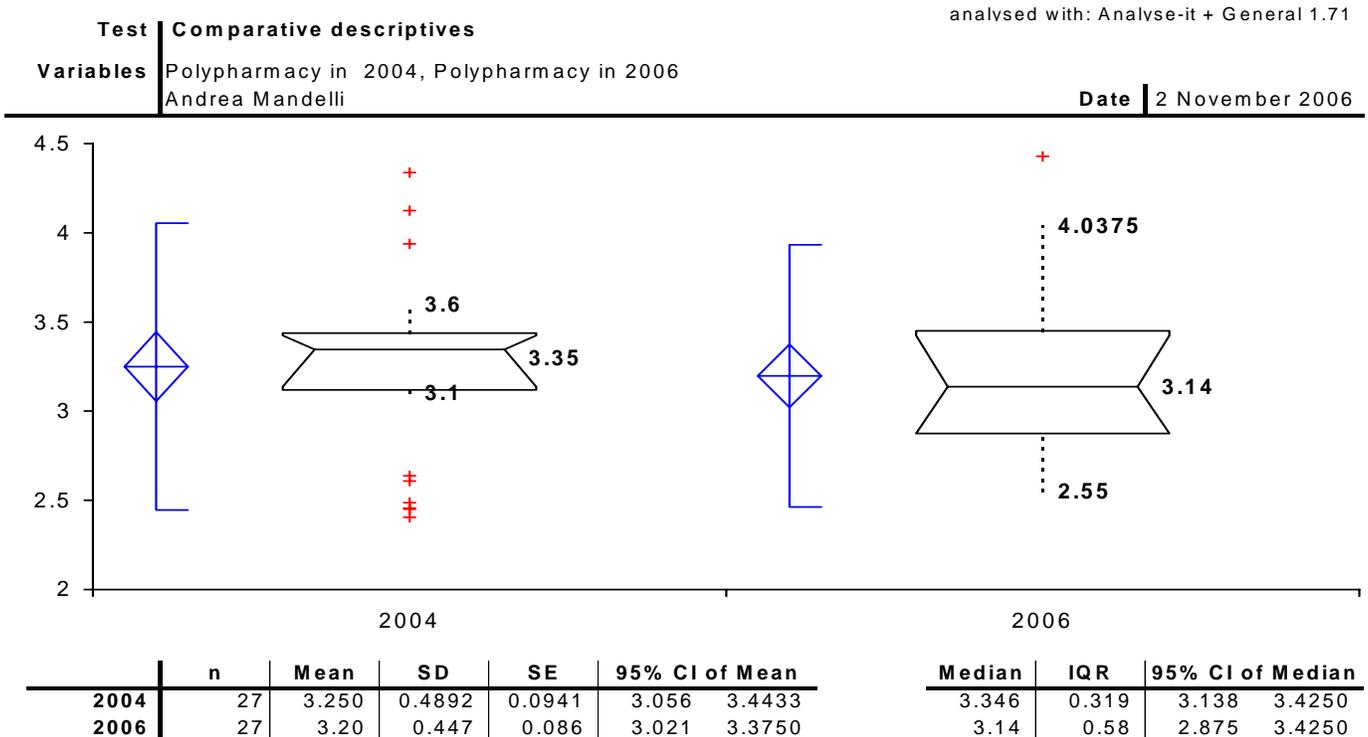
The results presented are derived from the collection and analysis of questionnaires targeting OPD patients. In 2004, respondents were 2,022 and in the year 2006 were 2,060. The results are drawn from a set of 27 Hospitals (100% of UCMB Hospitals). Here below a comparative analysis of the main variables under study.

### Poly-pharmacy

Here we mean the average number of drugs per prescription. This variable is measured by dividing the overall number of drugs prescribed by the total number of prescriptions in each hospital. It helps in identifying the number of different drugs a patient is given on average as a result of an OPD visit. WHO recommendation is less than 2 types of drugs per prescription but this was before the new malaria policy, which is based on combination therapy and the syndromic approach. The new malaria policy can indeed cause an increment in the number of drugs prescribed.

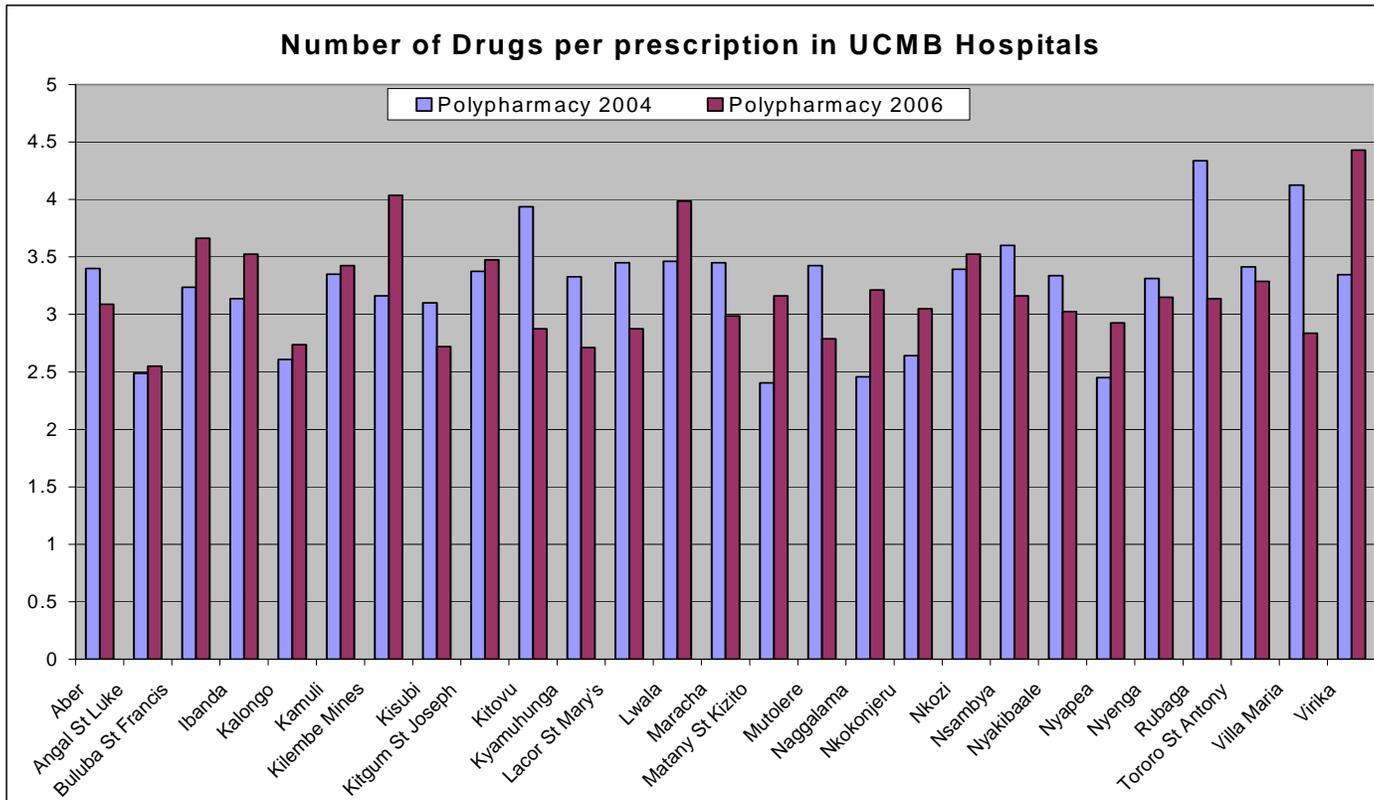
The findings are showing that there was no difference between the year 2004 and the year 2006, with the average number of drugs per prescription being more than 3 with noticeable variations in the ranges, especially in 2006. Median values and inter-quartile ranges are displayed in the figure below.

Figure 1: Poly-pharmacy (distribution of observed values in 2004 and 2006)



Individual hospital's comparison between the two years also offers a valid management tool helping managers to assess hospital trends with regards to this specific variable. The comparison between the two years in each of the 27 hospitals are displayed in the next graph.

Figure 2: Poly-pharmacy (comparison between 2004 and 2006 values)



**Percentage of antibiotic drugs**

Monitoring this variable is important as antibiotic drugs represent the most expensive drugs and it has always been observed a tendency of over-prescription of antibiotics as it is believed that this type of drug has better efficacy in curing diseases while instead its misuse causes undesired effects like resistance. This variable has been measured dividing the total number of antibiotic drugs prescribed by the total number of drugs prescribed. It gives an indication of how heavily antibiotics weight on the prescriptions and if this information is combined with information like the frequency of prescription with antibiotic, it gives a clear picture of how spread the practice is in the hospitals.

The results show that no big difference has been noticed between the year 2004 and 2006. The average percentage in fact moved from 25% in 2004 to 24% in 2006. WHO recommendations say that the rate should be less then 20%, while other surveys conducted in Uganda in 2001 and 2004 in Government health facilities showed values much higher (57% in 2001 and 54% in 2004). Median values and inter-quartile ranges are displayed in figure 3 and average values' comparison between the two years for each hospital are displayed in figure 4. Comparison between years show that there are hospitals whose practices have improved while in others have significantly worsened (see Figure 4). It is noted that two hospitals are depicted as outliers (one in 2004 at 48% and one in 2006 at 43%) but with values still lower that the ones observed at national level through the MoH cited surveys. All in all the RCC Hospital network with regards to this area has a relatively fair prescription practice. Never the less the frequency at which antibiotics are prescribed is still high: in 2004 and in 2006 respectively it was 0.94 and 0.78 (i.e. 94% and 78% of prescription contained at least one antibiotic drug).

Figure 3: Percentage of antibiotic drugs (distribution of observed values in 2004 and 2006)

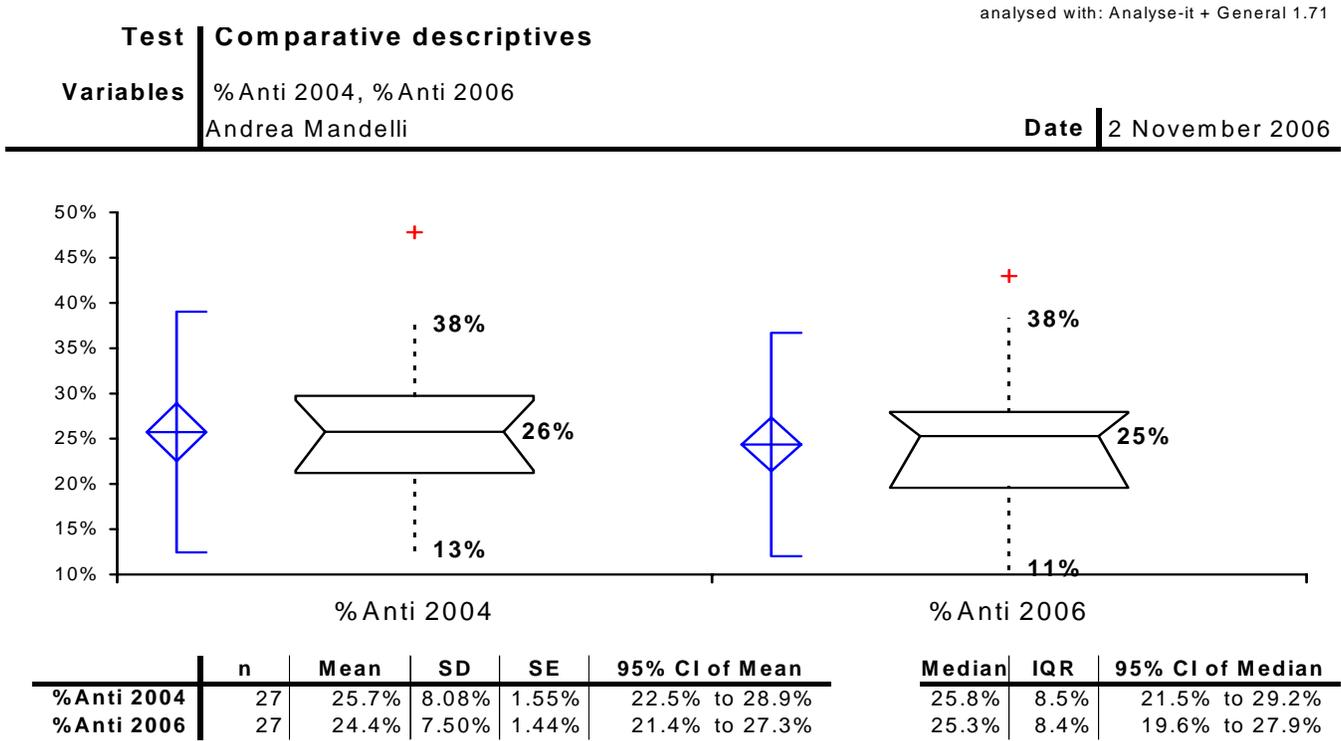
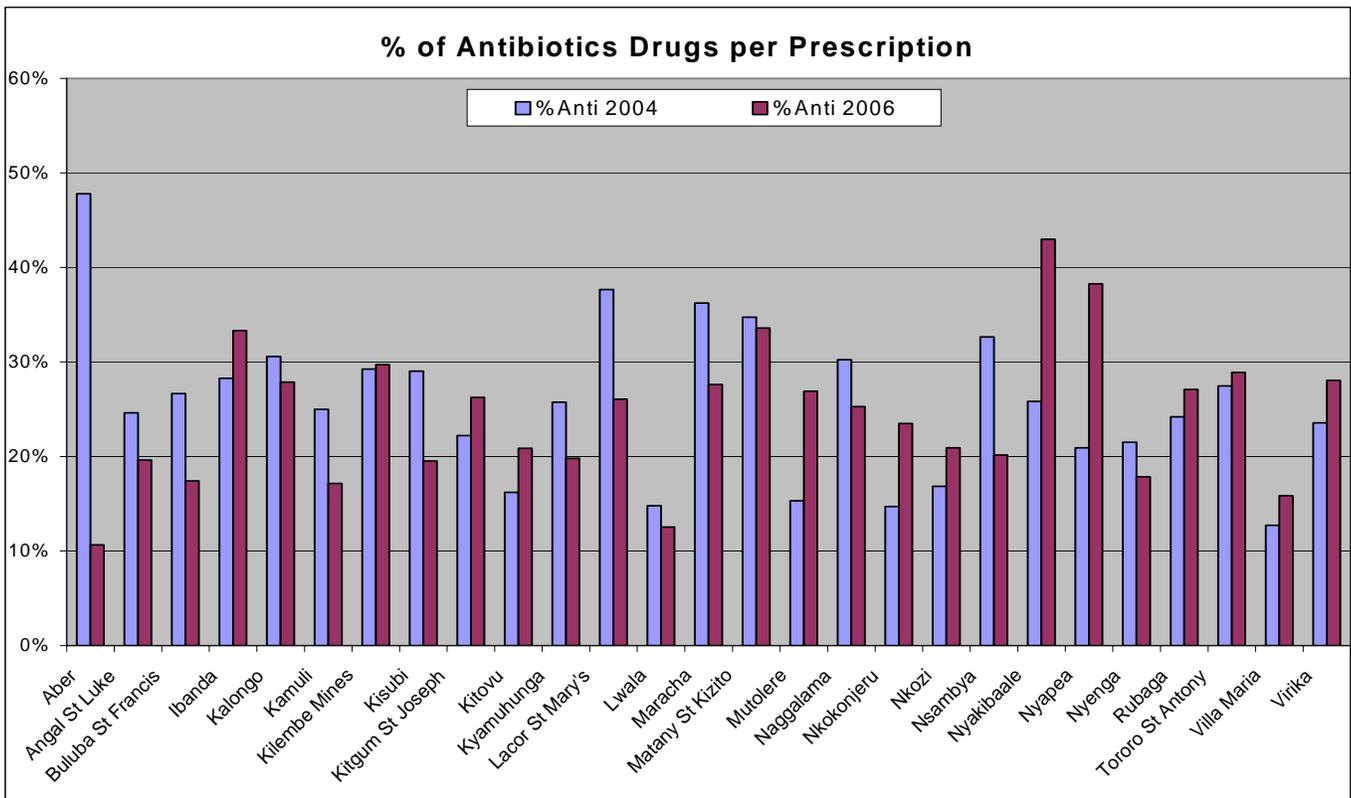


Figure 4: Percentage of antibiotic drugs (Comparison between 2004 and 2006 values)



**Percentage of injectable drugs**

Injectable drugs and injections at large are often believed to be more powerful the oral medication. There has been a growing belief that some diseases can only be treated with injections and a lot of health workers in Uganda have been reporting about direct requests by patients for injections rather than drugs taken orally.

Results show that average percentage (total injectables drugs divided by total drugs prescribed) of injectable drugs in hospitals was 8% in 2004 and it increased to 10% in 2006. These values are still below the WHO recommendations and far below what was found in Uganda in 2001 and 2004, which was 35% and 32% respectively. Figure 5 shows median values, inter-quartile ranges and distributions of variables in 2004 and 2006 while figure 6 shows comparison between years in all hospitals. On one hand, the median values and the inter-quartile ranges have widened and a wider variability is observed in the sample (see box-whisker plot) on the other hand comparison between the two years shows that almost half of the hospitals have dramatically increased the share of injectable drugs.

Figure 5: Percentage of Injectable (distribution of observed values in 2004 and 2006)

analysed with: Analyse-it + General 1.71

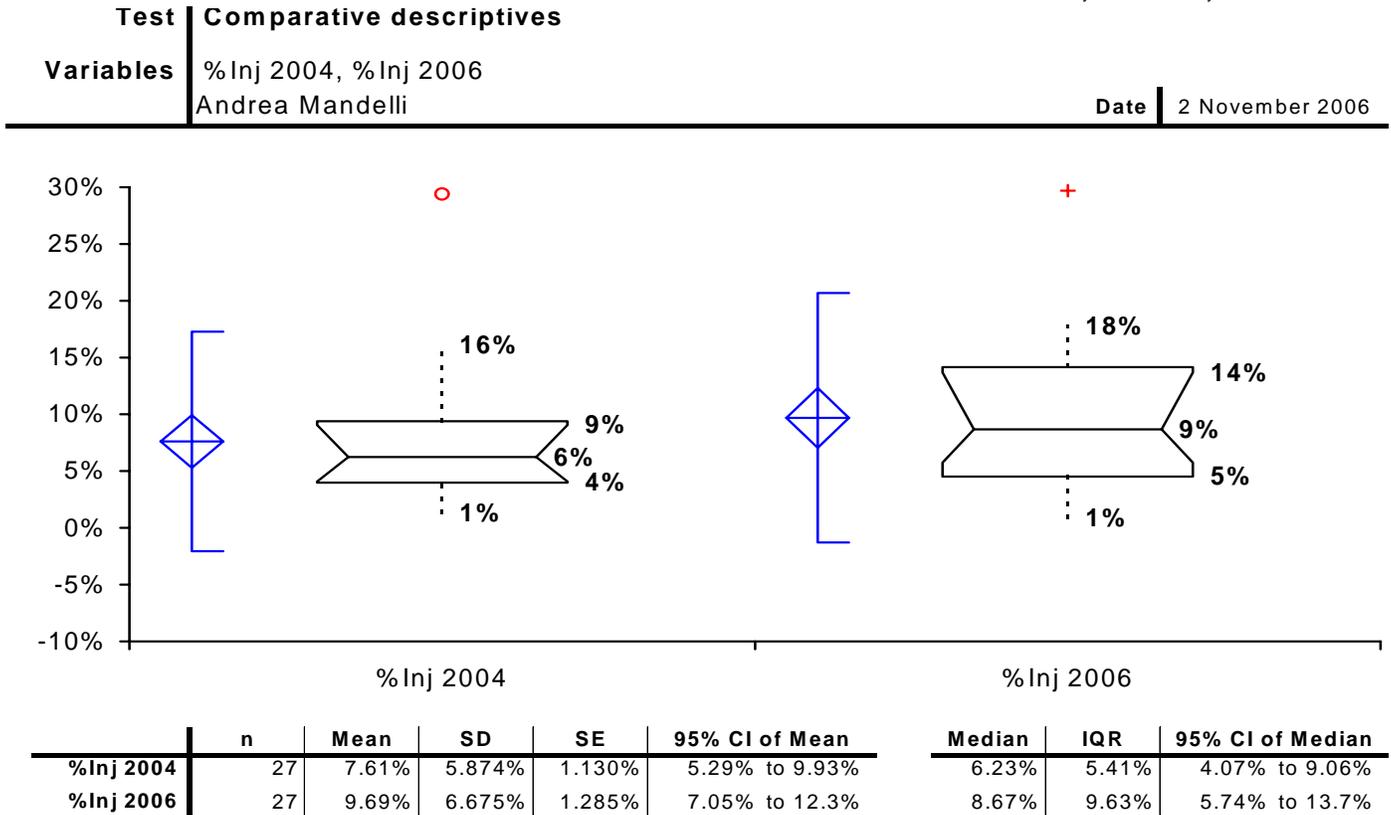
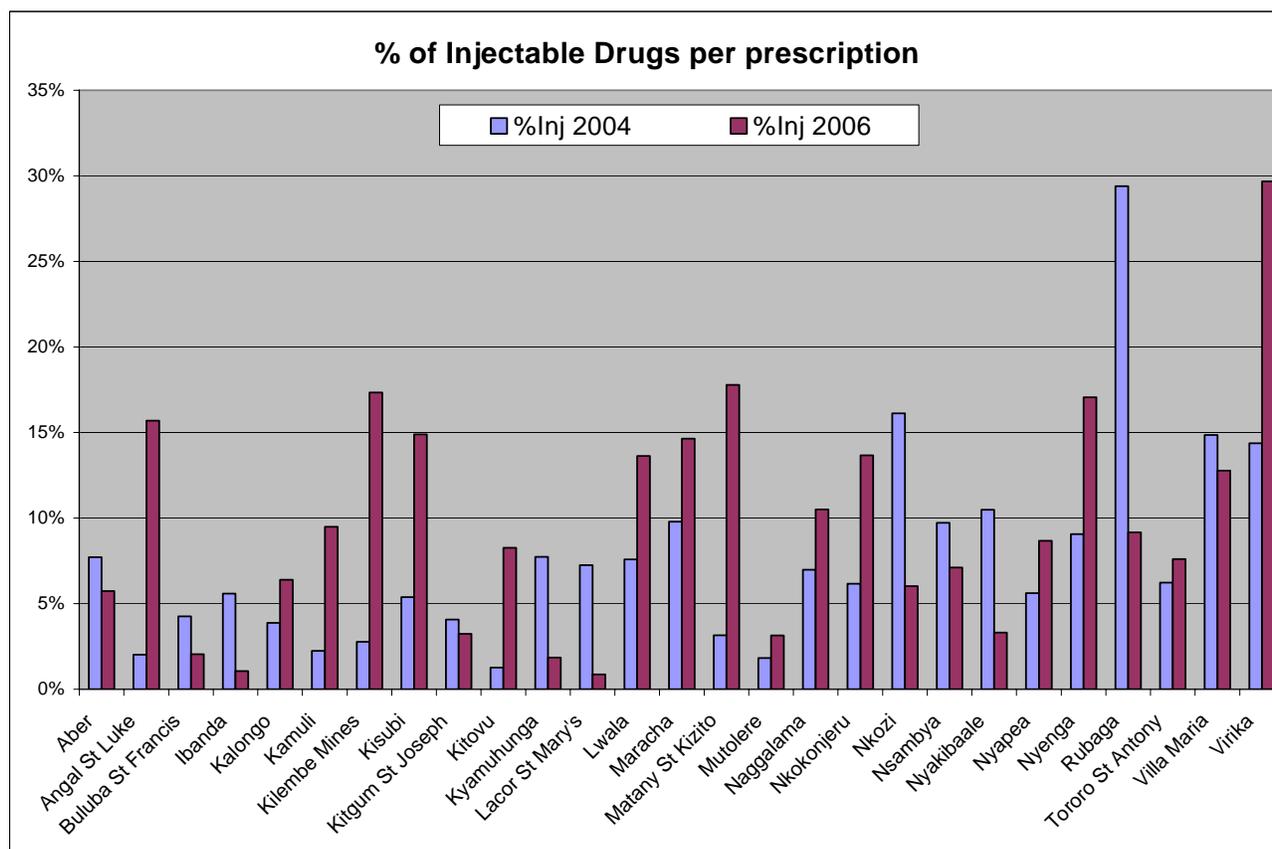


Figure 6: Percentage of Injectable (Comparison between 2004 and 2006)



### Percentage of drugs dispensed

Monitoring this variable helps to get a picture of the availability of drugs in the hospitals and at the same time helps to monitor the share of patients that after receiving a visit and a prescription do effectively collect the drugs trying to adhere to the therapy indicated by the medical officers. Results show that the share of drugs dispensed over drugs prescribed has improved from 91% to 94%. It is intuitive to expect that this percentage should be 100%, but indeed drugs stock outs on the hospitals' side and economic barrier from the patients' side can affect the drugs' dispensing and lower the rates. No comparable information exists from the Government sector and WHO recommendation is to aim at 100%.

The median values and inter-quartile ranges are displayed in Figure 7 while comparisons between the two years for each hospital are displayed in Figure 8. It can be noticed that some hospitals have a percentage of dispensed drugs that exceeds 100%. This means that in some cases the number of drugs issued is higher than the number of drugs prescribed. This is the result of strong pressure exercised by patients towards the dispensing officers as in some cases patients are not happy if they do not receive what they consider being the "right" number of drugs. This practice, and a consequent score that is higher than 100% is not at all a sign of quality and such practices should be discouraged.

Figure 7: Percentage of Drugs dispensed vs Drugs prescribed (distribution of observed values in 2004 and 2006)

analysed with: Analyse-it + General 1.71

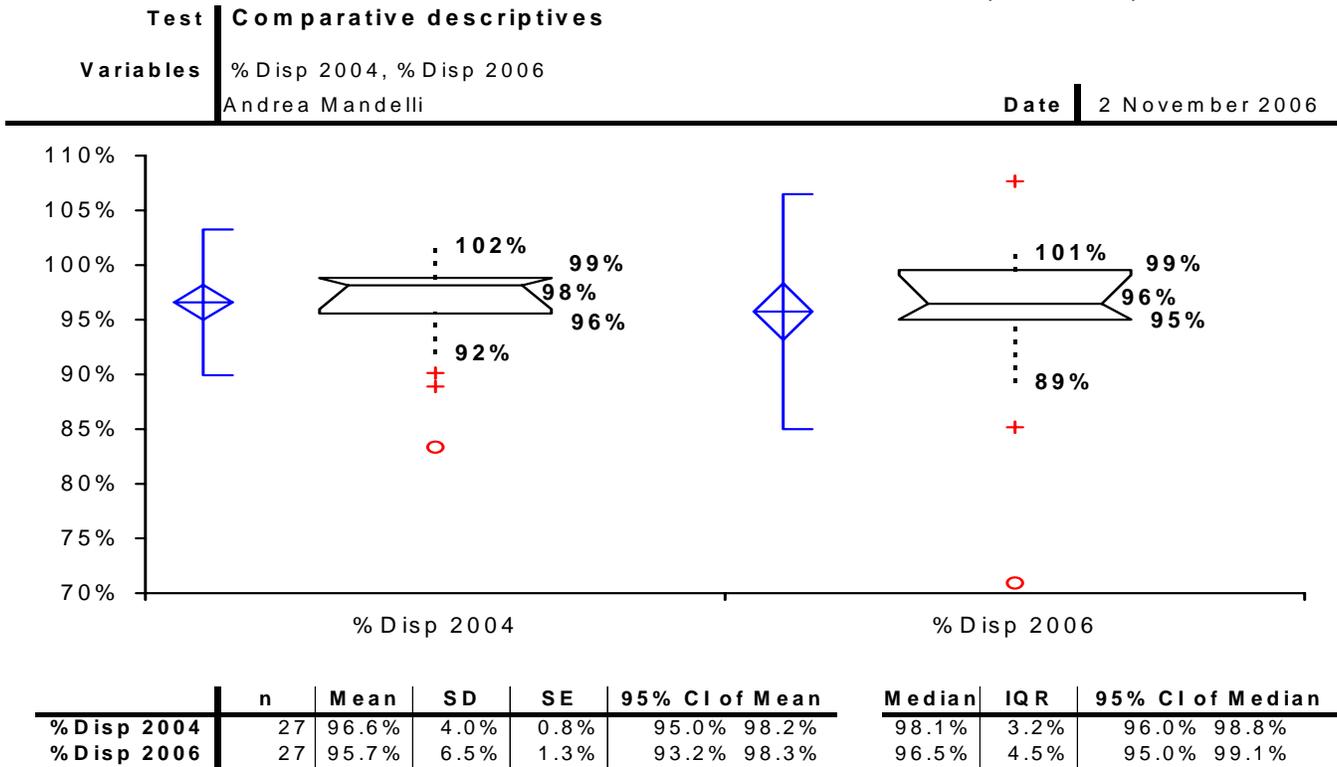
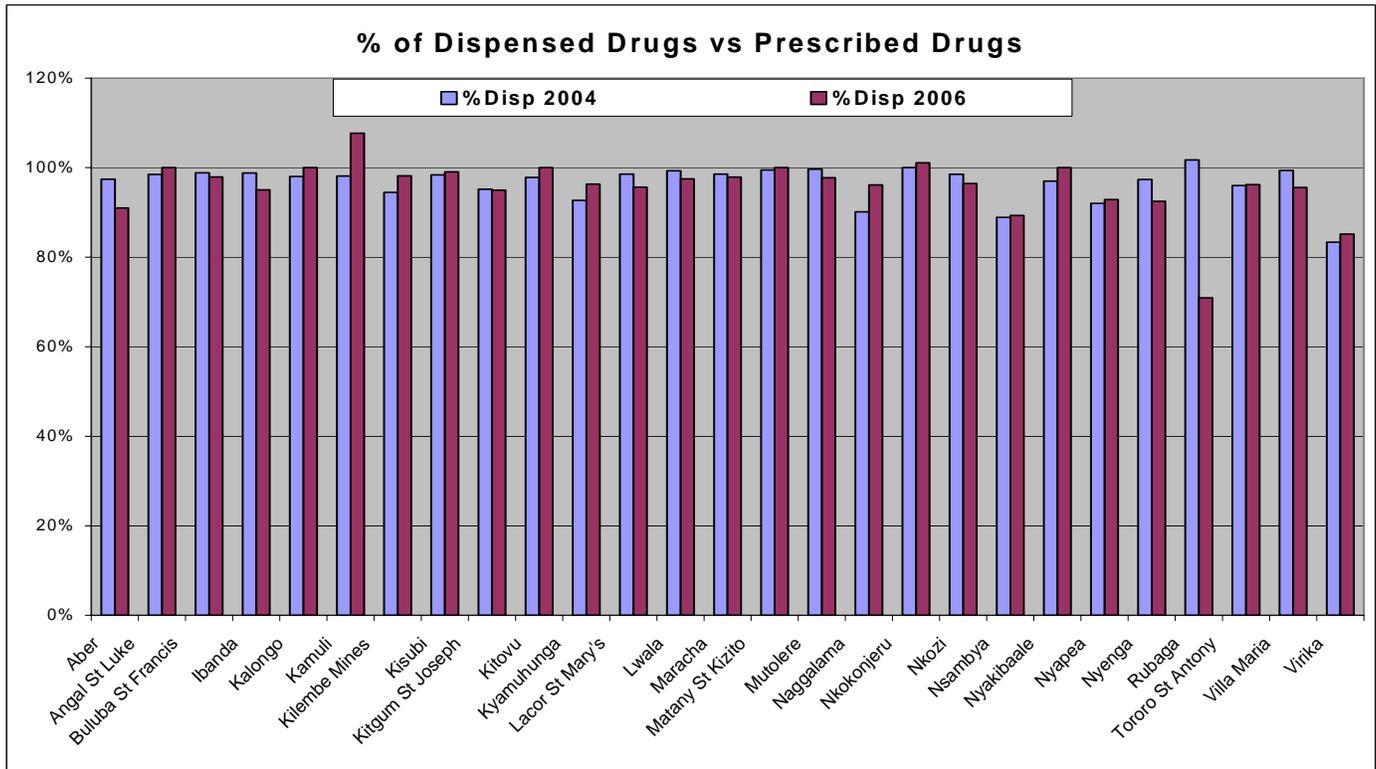


Figure 8: Percentage of dispensed drugs (Comparison between 2004 and 2006)



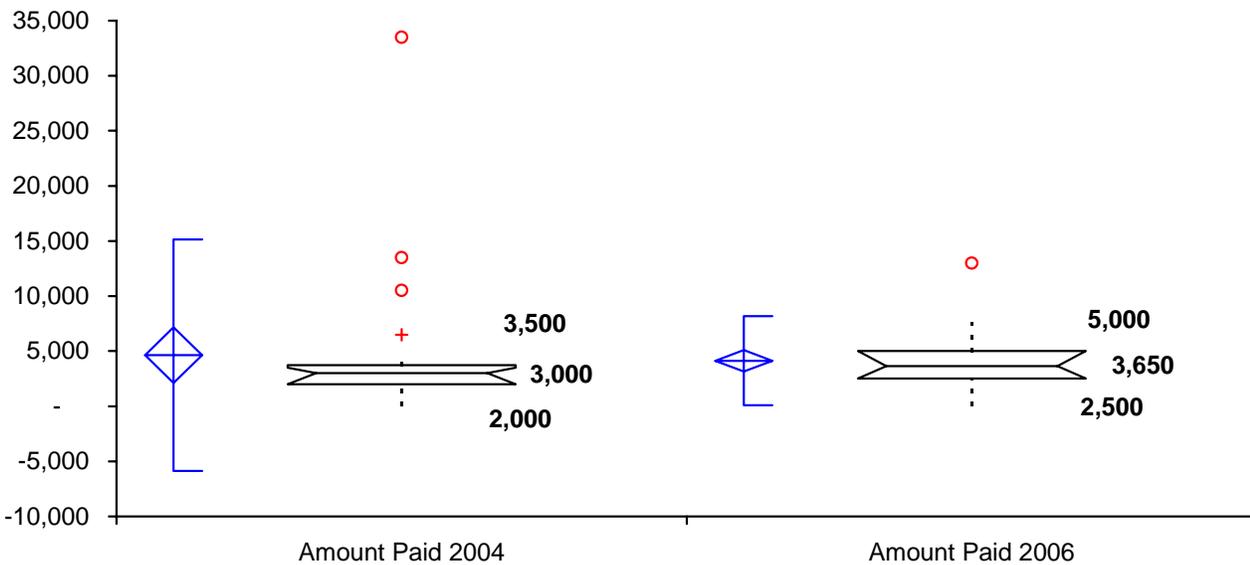
**Amount paid for OPD prescription**

Information on charges applied for OPD services are used as measure of equity and have been constantly monitored by UCMB. Differences have been observed across the sample during the same year and also in different years. 2004 data showed a more uniform data set, with less variability but with more outliers, with 3 observations being far outliers. 2006 data set seems to be more homogeneous and only one hospital presents a far observation. The median monetary value paid for the OPD contact/prescription has moved from 3,000 Ugx in 2004 to 3,650 Ugx in 2006. The amount reported by the respondents was inclusive of the consultation/visit and of the drugs received. Some services were reported to be offered free of charge (especially for children). Some hospitals do apply flat rates while others apply fee for service, usually having one charge for the consultation/visit and another one for the drugs dispensed. The data shows that the majority adopts flat rates system. Figure 9 shows the distribution of the observed values in the sample for the two years. Figure 10 shows the comparison between the two years 2004 and 2006 for each hospital. Few hospitals have managed to contain the fees' charges at the level of 2004, only 3 have succeeded in further reducing the fees level below the 2004 level while the majority has increased. Only one hospital has increased considerably the fees level. This picture shows that the hospitals are still trying to implement measures aiming at increasing access through a fees policy that hinges on keeping the fees level as low as possible.

Figure 9: Amount paid for OPD prescription (distribution of observed values in 2004 and 2006)

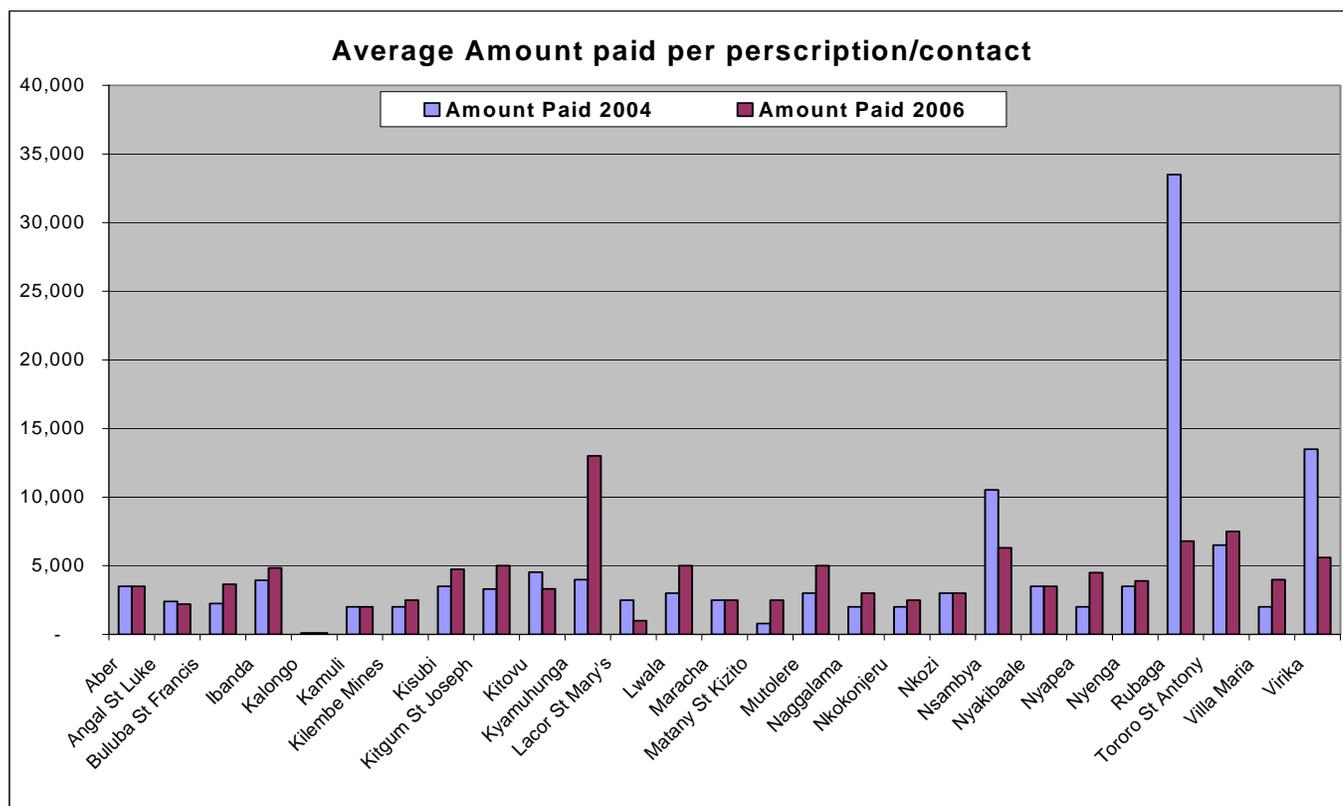
analysed with: Analyse-it + General 1.71

<b>Test</b>	<b>Comparative descriptives</b>	
<b>Variables</b>	Amount Paid 2004, Amount Paid 2006	
	Andrea Mandelli	
		<b>Date</b>   2 November 2006



	n	Mean	SD	SE	95% CI of Mean		Median	IQR	95% CI of Median	
<b>Amount Paid 2004</b>	27	4,642.6	6,392.7	1,230.3	2,113.7	7,171.4	3,000.0	1,725.0	2,000.0	3,500.0
<b>Amount Paid 2006</b>	27	4,128.7	2,453.9	472.3	3,158.0	5,099.4	3,650.0	2,500.0	2,500.0	5,000.0

Figure 10: Amount paid per OPD prescription (Comparison between 2004 and 2006)



**Quality of Prescription Notes**

The questionnaire had a provision for information on the detailed information contained in the prescription form. This is an indicator of the quality of the assessment done by the clinical officers. Prescriptions are supposed to be accompanied by some notes concerning the patient's history, concerning an objective examination that leads to a diagnosis, upon which the right drugs are prescribed. Looking at the returned questionnaires the percentage of prescription notes with patients history was reported to be 91% in 2004 and 96% in 2006. The percentage of prescriptions reporting an OE (Objective Examination) was found to be 100% in both years as well as the percentage of prescription with a complete diagnosis (100% in both years). These reports seem to be too high to be true and maybe the interviewers have introduced some disturbing factor.

Table 1: Quality of prescription notes

Quality of prescription notes	Patient's History	Objective Examination	Diagnosis
2004	91%	100%	100%
2006	96%	100%	100%

### Results from Lower Level Units (LLUs) analysis

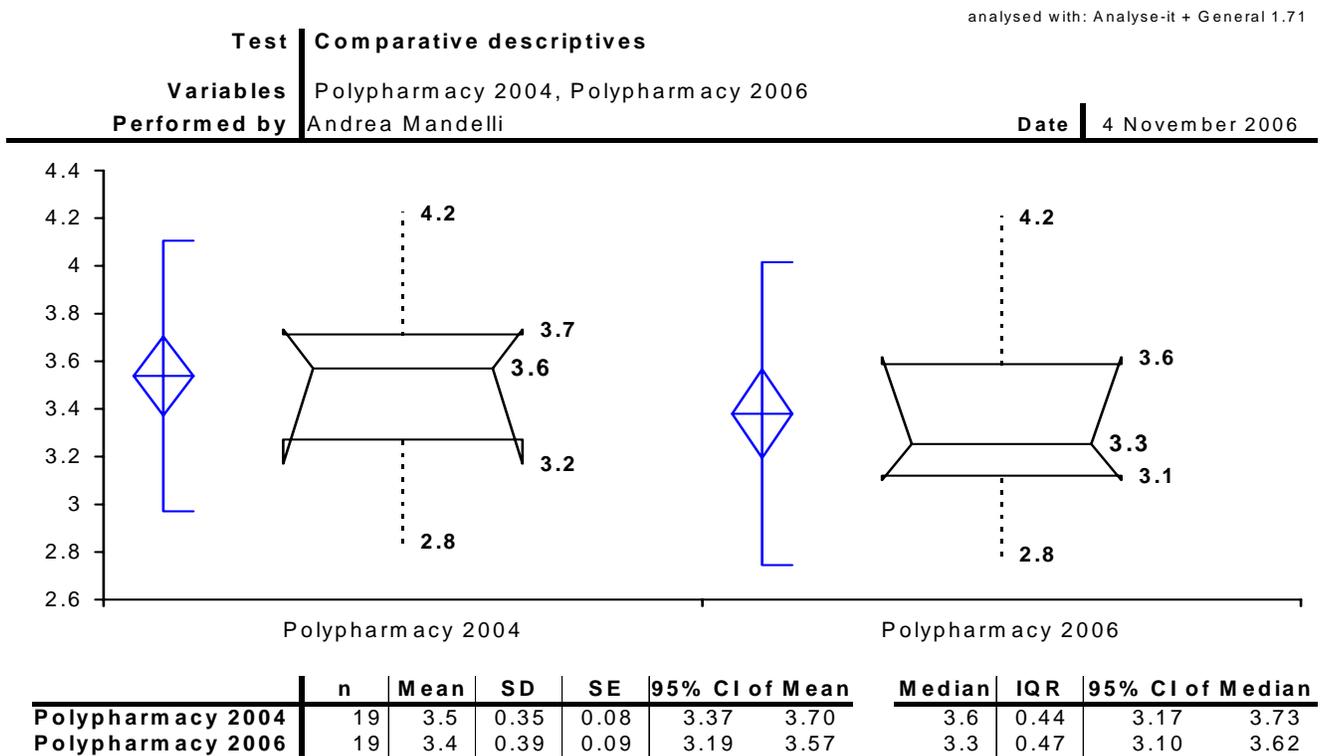
The results presented here after are derived from the collection and analysis of the Questionnaires targeting OPD patients in LLUs. Respondents were 6,951 in the year 2004 and 8,631 in the year 2006, representing an average of 35 respondents per LLU. Here below a comparative analysis of the main variables under study, for the two years. The results are summarised and presented regrouping the LLUs sampled in the study according to the Diocese where they are located.

#### Poli-pharmacy

Here we mean the average number of drugs per prescription. This variable is measured dividing the overall number of drugs prescribed by the total number of prescription in each hospital. It helps in identifying the number of different drugs a patient is given on average as results of a OPD visit. WHO recommendation was less than 2 type of drugs per prescription but this was before the new malaria policy, which is based on the combination therapy and the syndromic approach. The new malaria policy can indeed cause an increment in the number of drugs prescribed.

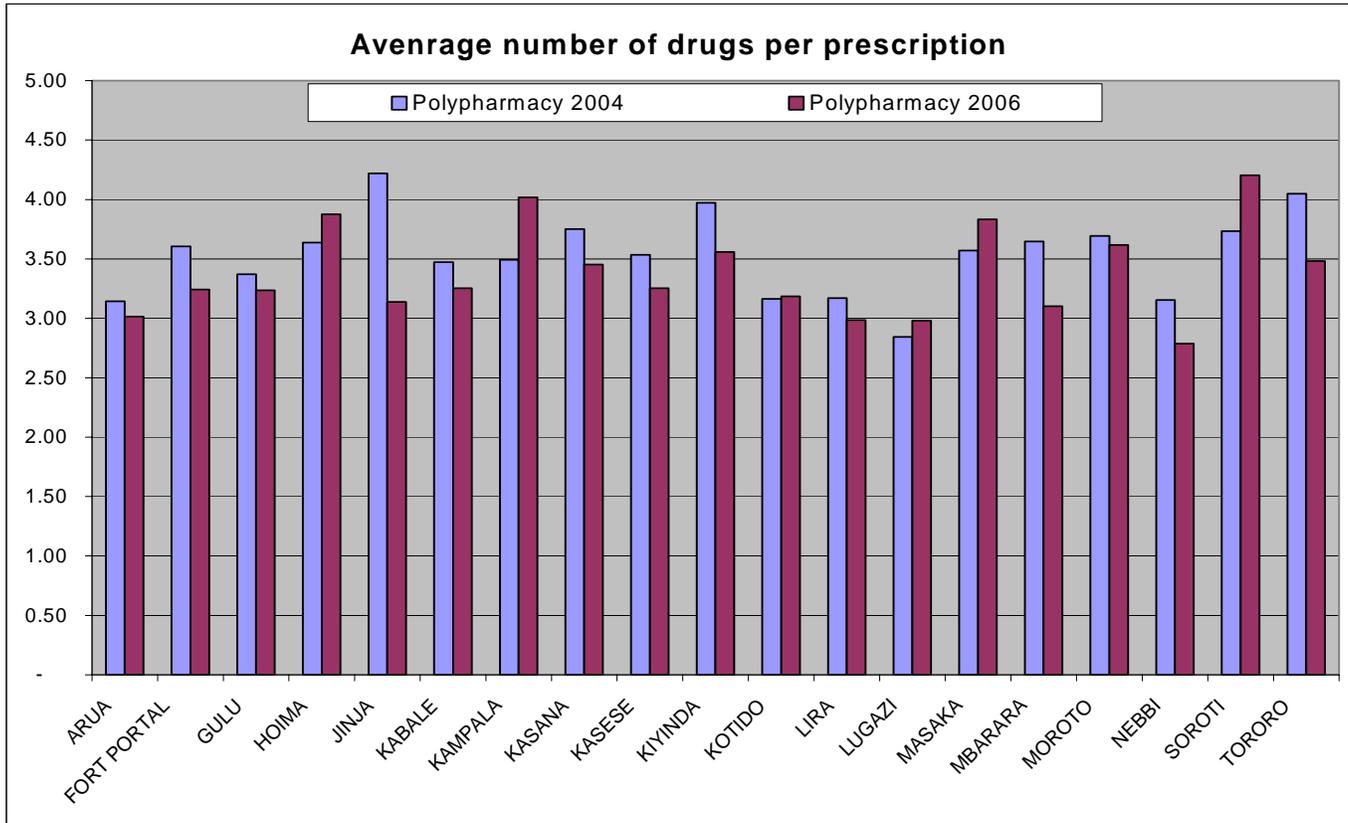
The findings are showing that there was no difference between the year 2004 and the year 2006, with the average number of drugs per prescription being more than 3 per prescription. Median values and inter-quartile ranges are displayed in the figure below.

Figure 11: Poli-pharmacy (distribution of observed values in 2004 and 2006)



Individual Diocese comparison between the two years also offers a valid management tool helping managers to assess trends with regards to this specific variable. The comparisons between the two years in each of the 19 Dioceses are displayed in the next graph.

Figure 12: Poly-pharmacy (comparison between 2004 and 2006 values)



**Percentage of antibiotic drugs**

Monitoring this variable is important as antibiotic drugs represent the most expensive drugs and it has always been observed a tendency of over-prescription of antibiotics as it is believed that this type of drug has better efficacy in curing diseases while instead its misuse causes undesired effects like resistance. This variable has been measured dividing the total number of antibiotic drugs prescribed by the total number of drugs prescribed.

The average percentage of antibiotics prescribed is showing a higher value (27%) as compared to the value observed in 2004 (24%). Minimal differences in median values are observed for the two years. One outlier standing at 78% is the cause for the higher average value in 2006. Frequency at which antibiotic are prescribed remains static at 0.86.

WHO recommendations say that the rate should be less than 20%, while other surveys conducted in Uganda in 2001 and 2004 in Government health facilities showed values much higher (57% in 2001 and 54% in 2004). Median values and inter-quartile ranges are displayed in figure 23 and average values' comparison between the two years for each Diocese are displayed in figure 24. Comparison between years show that there are 4 Dioceses whose practices have improved while in others have significantly worsened. All in all the diocesan values are still lower than the ones observed at national level through the MoH cited surveys.

Figure 13: Percentage of antibiotic drugs (distribution of observed values in 2004 and 2006)

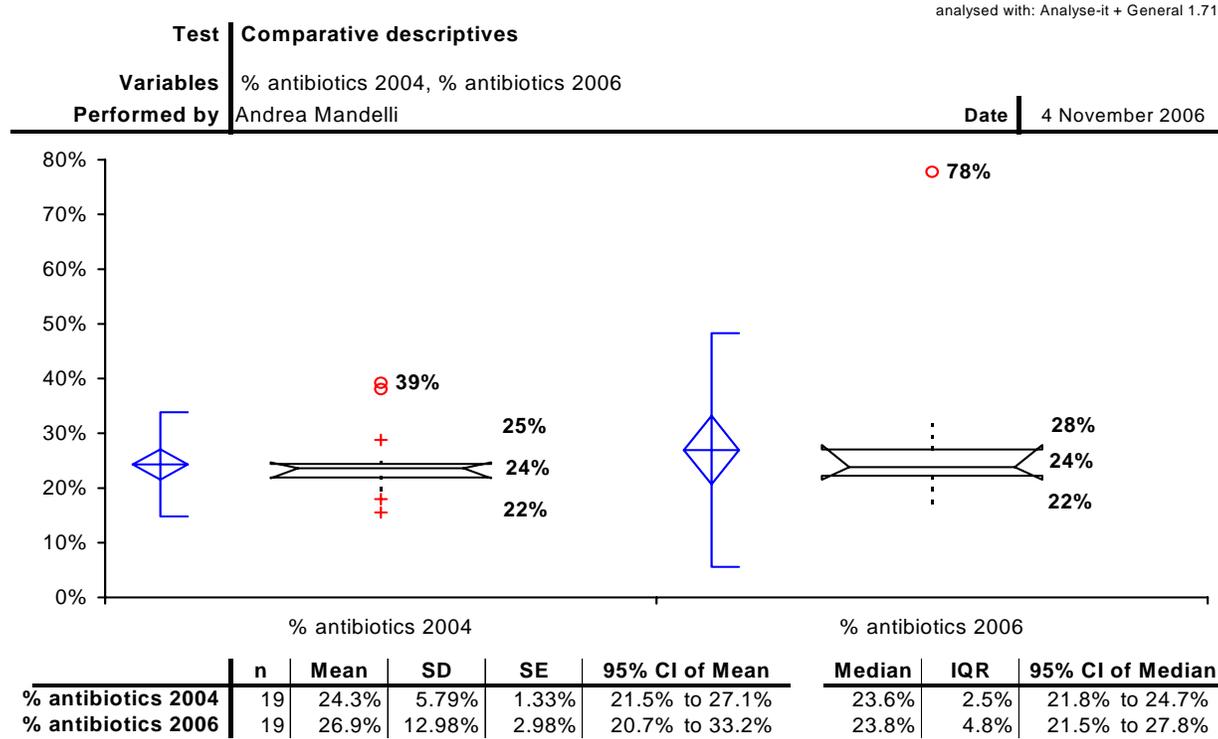
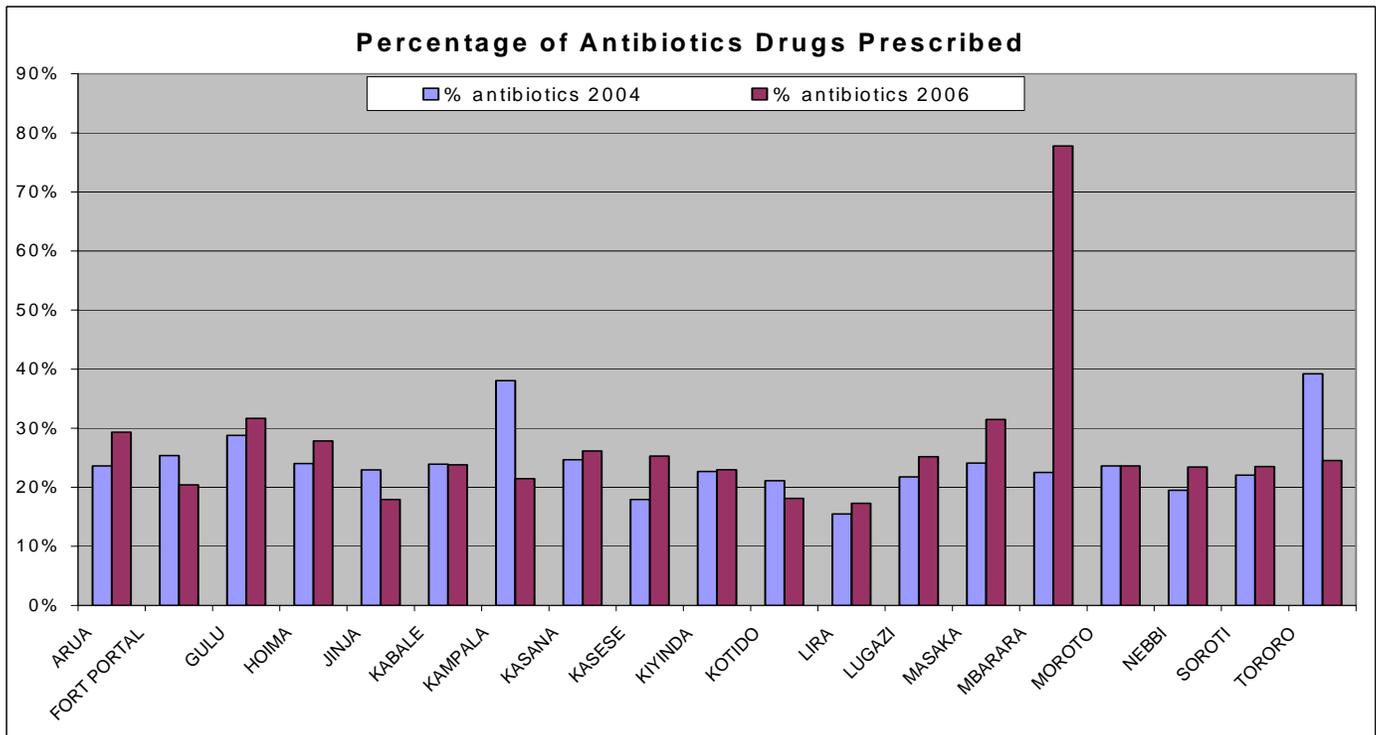


Figure 14: Percentage of antibiotic drugs (Comparison between 2004 and 2006 values)



**Percentage of injectable drugs**

Injectable drugs and injections at large are often believed to be more powerful the oral medication. There has been a growing belief that some diseases can only be treated with injections and a lot of health workers in Uganda have been reporting about direct requests by patients for injections rather than drugs taken orally.

Results show that average percentage (total injectables drugs divided by total drugs prescribed) of injectable drugs in LLUs was 18% in 2004 and it has remained stable in 2006. These values are slightly higher the WHO recommendations (below 15%) but far below what was found in Uganda in 2001 and 2004, which was 35% and 32% respectively. Figure 15 shows median values, inter-quartile ranges and distributions of variables in 2004 and 2006 while figure 16 shows comparison between years in all Dioceses. The median values and the inter-quartile ranges have widened and a wider variability is observed in the sample (see box-whisker plot) for the observation of the year 2006. Comparison between the two years shows that half of the Dioceses have decreased the share of injectables while the other half have increased. The net result is a static picture but the differences in the values observed are remarkable (32 and 31 points respectively in 2004 and 2006).

Figure 15: Percentage of Injectable (distribution of observed values in 2004 and 2006)

analysed with: Analyse-it + General 1.71

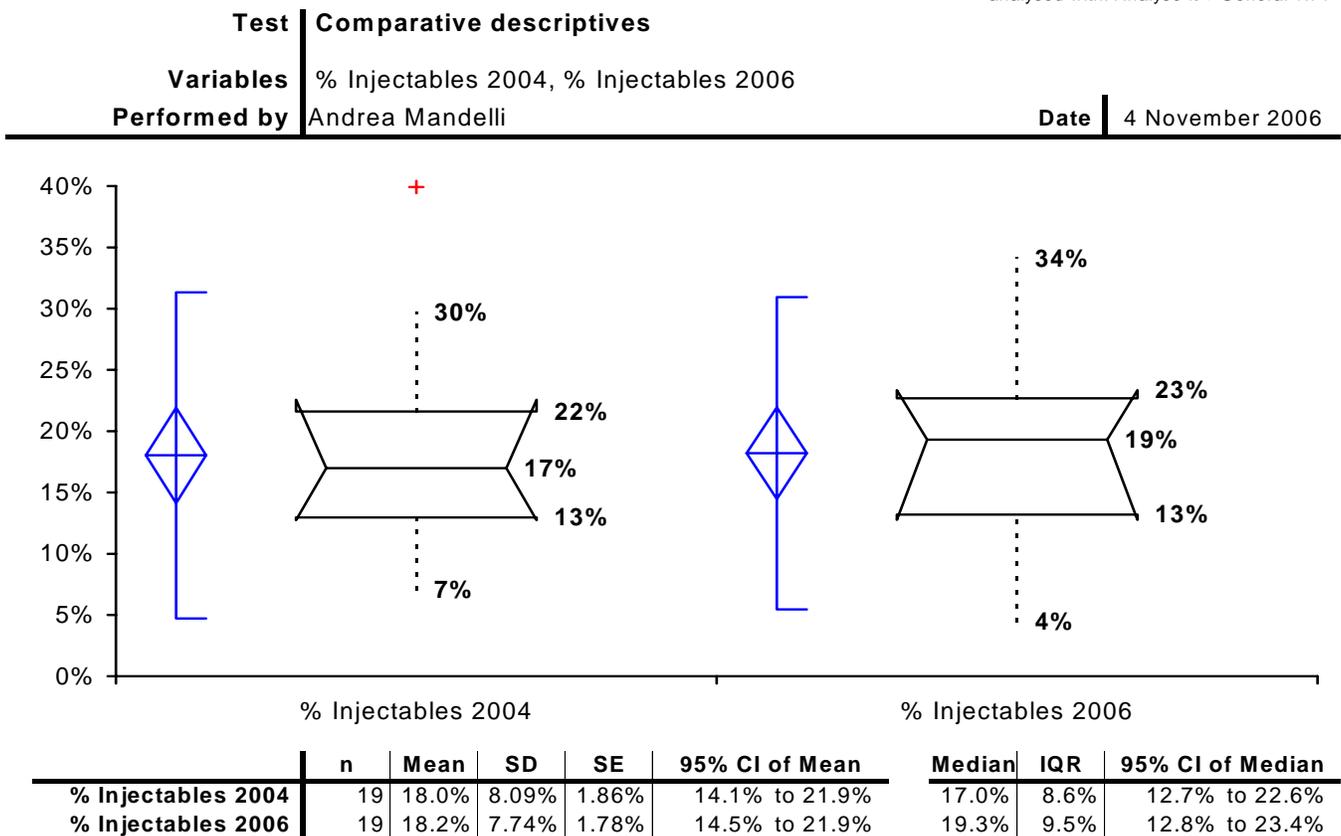
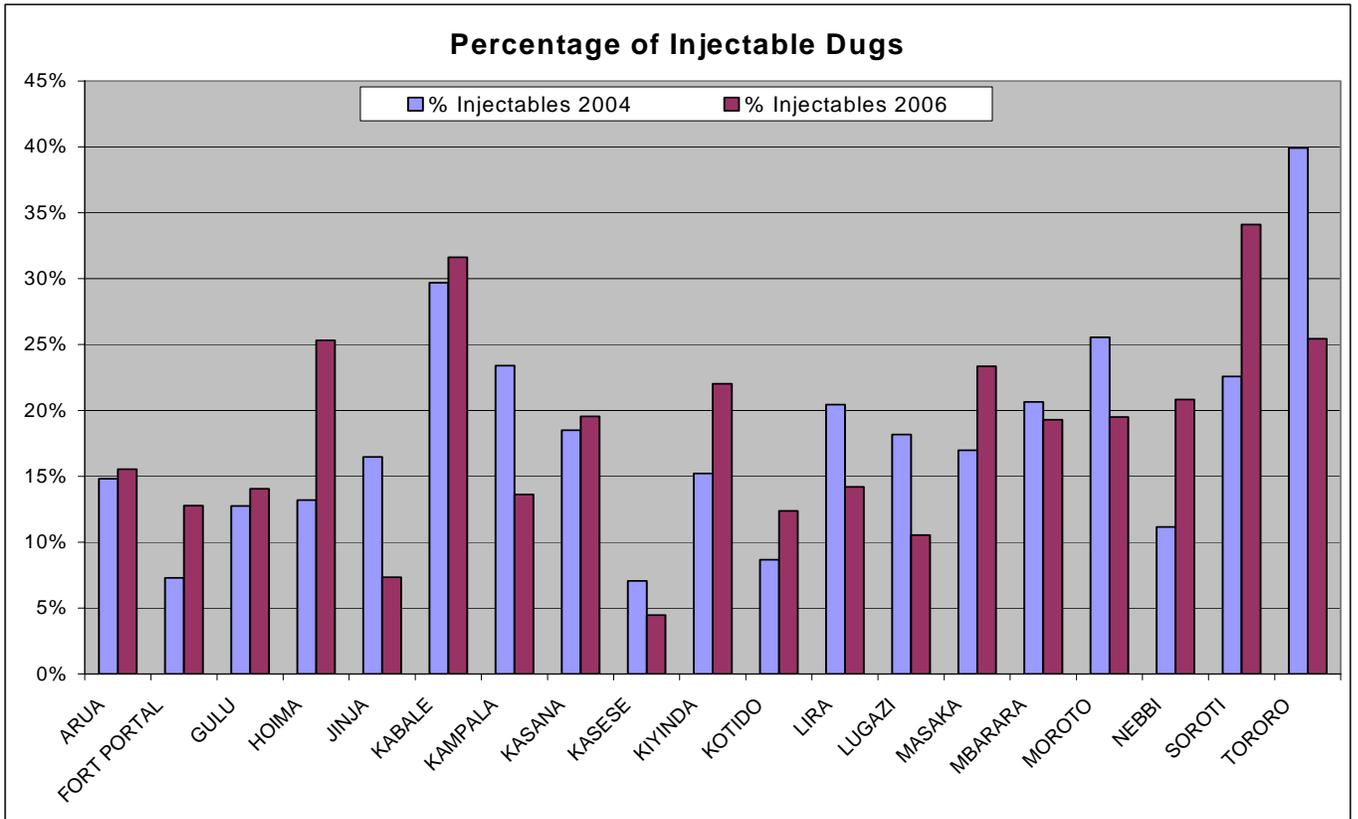


Figure 16: Percentage of Injectable (Comparison between 2004 and 2006)



**Percentage of drugs dispensed**

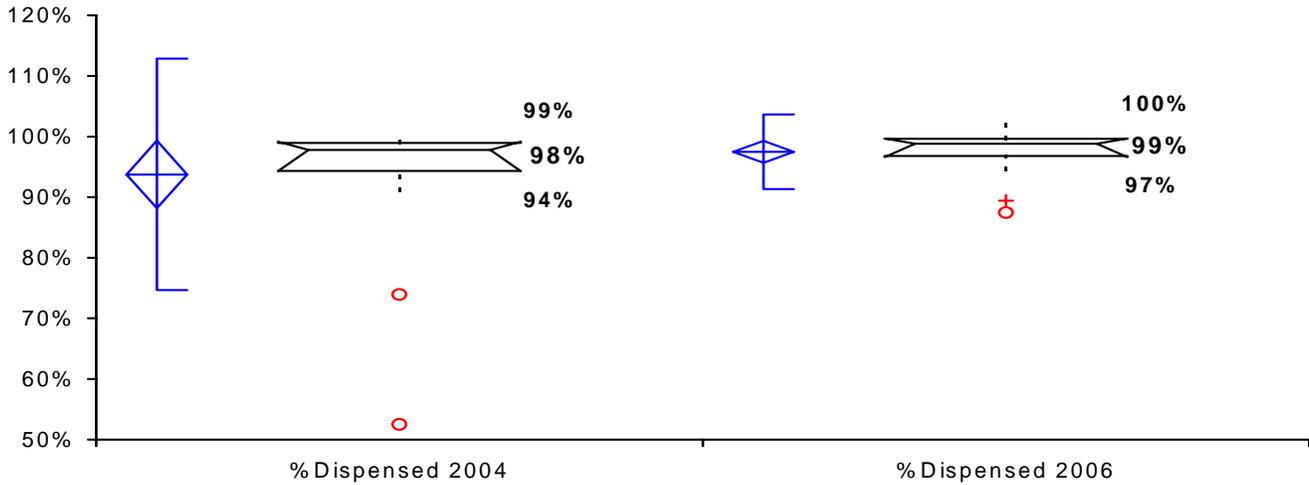
Monitoring this variable helps to get a picture of the availability of drugs in the health facility and at the same time helps to monitor the share of patients that after receiving a visit and a prescription do effectively collect the drugs trying to adhere to the therapy indicated by the medical officers. Results show that the share of drugs dispensed over drugs prescribed has improved from 94% to 97%. It is intuitive to expect that this percentage should be 100%, but indeed drugs stock outs can affect the drugs' dispensing and lower the rates. WHO recommendation is to aim at 100%. The improvement and the value rate being close to 100% may also be the result of the shift from a push to a pull system as it has happened in the recent years.

The median values and inter-quartile ranges are displayed in Figure 17 while comparisons between the two years for each Diocese are displayed in Figure 18. It can be noticed that in some cases the number of drugs issued is higher than the number of drugs prescribed, resulting in shares higher than 100%. Such practices should be discouraged.

Figure 17: Percentage of Drugs dispensed vs Drugs prescribed (distribution of observed values in 2004 and 2006)

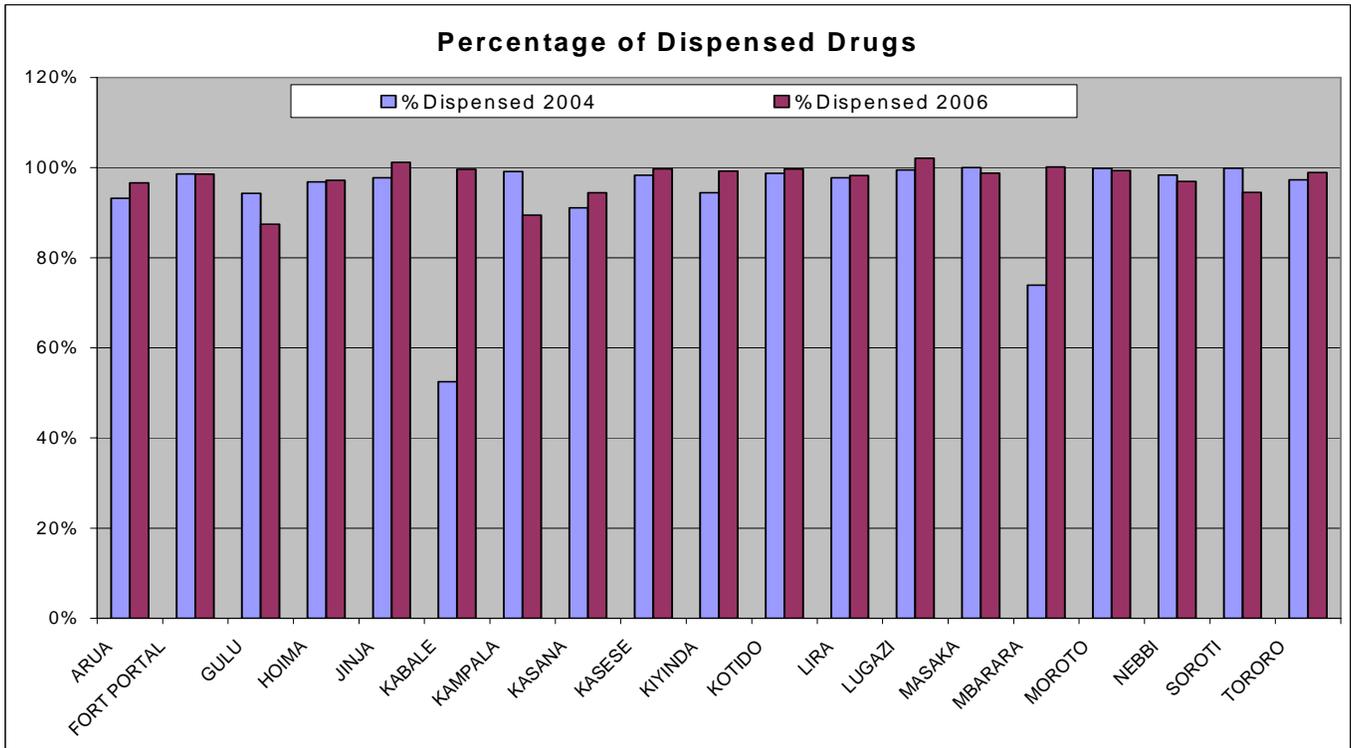
analysed with: Analyse-it + General 1.71

<b>Test</b>	<b>Comparative descriptives</b>	
<b>Variables</b>	%Dispensed 2004, %Dispensed 2006	
<b>Performed by</b>	Andrea Mandelli	<b>Date</b>   4 November 2006



	n	Mean	SD	SE	95% CI of Mean	Median	IQR	95% CI of Median
%Dispensed 2004	19	93.8%	11.60%	2.66%	88.2% to 99.4%	97.8%	4.6%	94.3% to 99.1%
%Dispensed 2006	19	97.5%	3.75%	0.86%	95.7% to 99.3%	98.8%	2.9%	96.6% to 99.7%

Figure 18: Percentage of dispensed drugs (Comparison between 2004 and 2006)



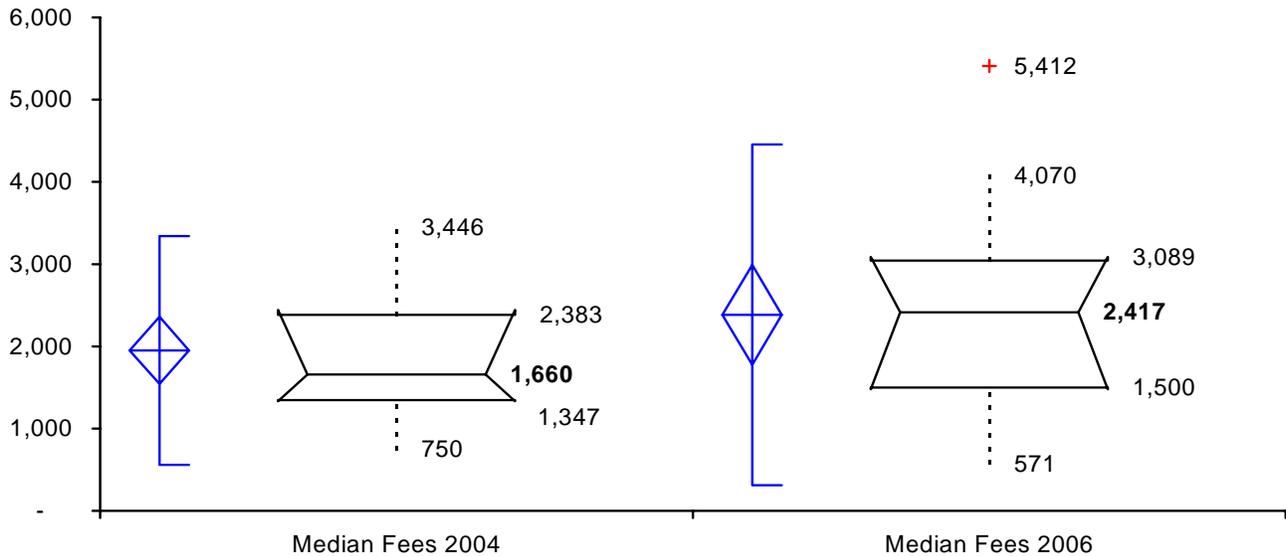
**Amount paid for OPD prescription**

Information on charges applied for OPD services are used as measure of equity and have been constantly monitored by UCMB. Differences have been observed across the sample during the same year and also in the two different years. 2004 data showed a more uniform data set while 2006 data set seems to be less homogeneous and only one diocese presents a far observation. The median monetary value paid for the OPD contact/prescription has moved from 1,660 Ugx in 2004 to 2,417 Ugx in 2006. The amount reported by the respondents was inclusive of the consultation/visit and of the drugs received. Some services were reported to be offered free of charge (especially for children). Figure 19 shows the distribution of the observed values in the sample for the two years. Figure 20 shows the comparison between the two years 2004 and 2006 for each diocese. 5 dioceses have managed to reduce the fees' charges as compared to the level of 2004 while 15 have increased fees levels. Only one has maintained same level as 2004. This picture shows that in LLUs implementing measures aiming at keeping the fees at levels as low as possible is harder than in hospitals.

Figure 19: Amount paid for OPD prescription (distribution of observed values in 2004 and 2006)

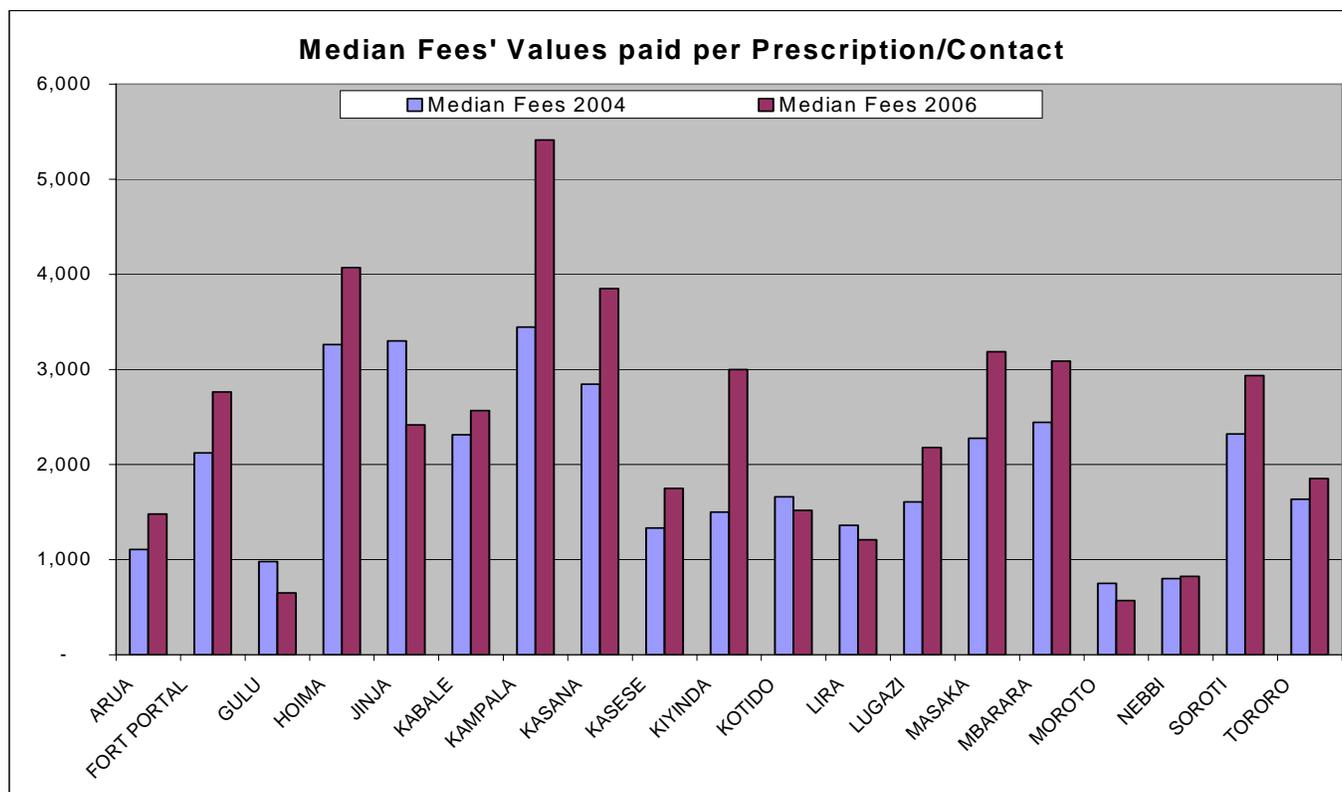
analysed with: Analyse-it + General 1.71

<b>Test</b>	<b>Comparative descriptives</b>	
<b>Variables</b>	Median Fees 2004, Median Fees 2006	
<b>Performed by</b>	Andrea Mandelli	<b>Date</b>   3 November 2006



	n	Mean	SD	SE	95% CI of Mean	Median	IQR	95% CI of Median
<b>Median Fees 2004</b>	19	1,951	846	194	1,543 2,358	1,660	1,035 2,443	
<b>Median Fees 2006</b>	19	2,385	1,260	289	1,778 2,992	2,417	1,545 3,089	

Figure 20: Amount paid per OPD prescription (Comparison between 2004 and 2006)



### Quality of Prescription Notes

The questionnaire had a provision for information on the detailed information contained in the prescription form. This is an indicator of the quality of the assessment done by the clinical officers. Prescriptions are supposed to be accompanied by some notes concerning the patient's history, concerning an objective examination that leads to a diagnosis, upon which the right drugs are prescribed. Looking at the returned questionnaires the percentage of prescription notes with patients history was reported to be 94% in 2004 and 95% in 2006. The percentage of prescriptions reporting an OE (Objective Examination) was found to be 100% in both years as well as the percentage of prescription with a complete diagnosis (100% in both years). These report seem to be to high to be true and maybe the interviewers have introduced a disturbing factor.

Table 2: Quality of prescription notes

Quality of prescription notes	Patient's History	Objective Examination	Diagnosis
2004	94%	100%	100%
2006	95%	100%	100%

**Building a Drugs' Prescription Quality Score**

UCMB believes that the key items relevant for calculating good drug prescription quality score are the presence of an objective examination (OE), appropriate poly-pharmacy, appropriate antibiotic prescription rate, appropriate injections rate and ability of the hospital to provide all the drugs in the prescription with out sending the patient to an external pharmacy or go without certain drugs.

Each of these 5 areas has been assessed and a score has been attributed according to the results observed. The scores attached to each component range between 0 and 20 points. Therefore the maximum attainable score is 100 points. Each of the Hospital and Diocese has been scored according to the table 2 below and the results for the 2004 and 2006 scores so derived have been compared and shown in figures 21, 22, 23 and 24.

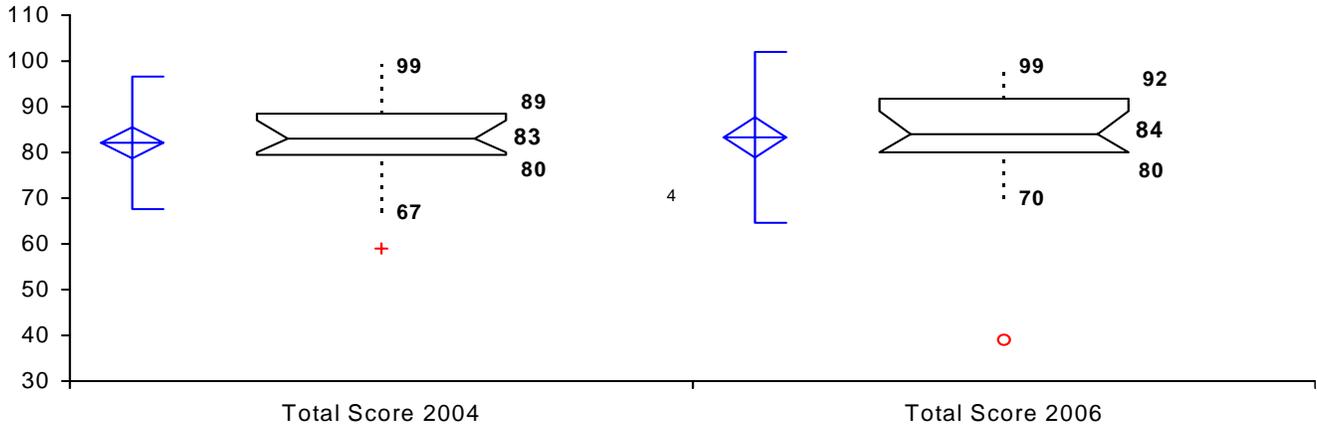
*Table 3: Drug prescription scoring table*

<b>Range Definition</b>	<b>Poly Pharm.</b>	<b>Score</b>	<b>Antibiotics Rate</b>	<b>Score</b>	<b>Injection Rate</b>	<b>Score</b>	<b>Dispensed drugs %</b>	<b>Score</b>	<b>Med Exam %</b>	<b>Score</b>
Equal or <	2.60	20	0.20	20	0.15	20	0.83	1	0.50	1
Equal or <	2.69	19	0.21	19	0.16	19	0.84	2	0.53	2
Equal or <	2.78	18	0.23	18	0.17	18	0.85	3	0.55	3
Equal or <	2.87	17	0.24	17	0.17	17	0.86	4	0.58	4
Equal or <	2.97	16	0.26	16	0.18	16	0.87	5	0.61	5
Equal or <	3.06	15	0.27	15	0.19	15	0.88	6	0.63	6
Equal or <	3.15	14	0.29	14	0.20	14	0.89	7	0.66	7
Equal or <	3.24	13	0.30	13	0.20	13	0.89	8	0.68	8
Equal or <	3.33	12	0.32	12	0.21	12	0.90	9	0.71	9
Equal or <	3.42	11	0.33	11	0.22	11	0.91	10	0.74	10
Equal or <	3.51	10	0.35	10	0.23	10	0.92	11	0.76	11
Equal or <	3.61	9	0.36	9	0.23	9	0.93	12	0.79	12
Equal or <	3.70	8	0.38	8	0.24	8	0.94	13	0.82	13
Equal or <	3.79	7	0.39	7	0.25	7	0.95	14	0.84	14
Equal or <	3.88	6	0.40	6	0.26	6	0.96	15	0.87	15
Equal or <	3.97	5	0.42	5	0.26	5	0.96	16	0.89	16
Equal or <	4.06	4	0.43	4	0.27	4	0.97	17	0.92	17
Equal or <	4.15	3	0.45	3	0.28	3	0.98	18	0.95	18
Equal or <	4.25	2	0.46	2	0.29	2	0.99	19	0.97	19
Equal or <	4.34	1	0.48	1	0.29	1	1.00	20	1.00	20
<b>Greater than</b>	4.34	1	0.48	1	0.29	1	1.00	20	1.00	20

Figure 21: Drugs Prescription Quality Score in Hospitals (distribution of observed values 2004 and 2006)

analysed with: Analyse-it + General 1.71

<b>Test</b>	<b>Comparative descriptives</b>	
<b>Variables</b>	Total Score 2004, Total Score 2006 Andrea Mandelli	<b>Date</b>   2 November 2006



	n	Mean	SD	SE	95% CI of Mean	Median	IQR	95% CI of Median
<b>Total Score 2004</b>	28	82.1	8.81	1.67	78.7 to 85.5	83.0	9.0	80.0 to 87.0
<b>Total Score 2006</b>	28	83.286	11.3720	2.1491	78.9 to 87.7	84.000	11.750	80.0 to 89.0

Figure 22: Quality Drugs Prescription Scores in Hospitals (2004 and 2006)

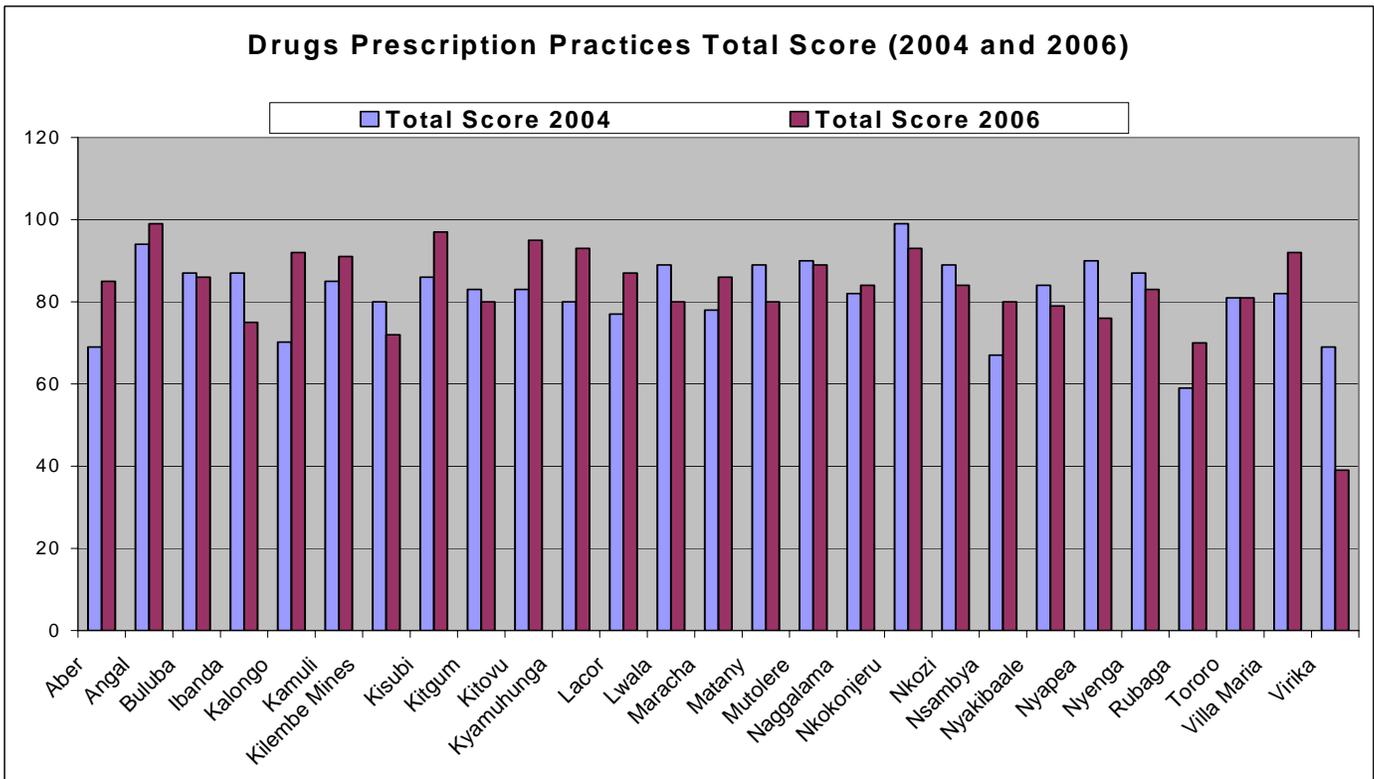
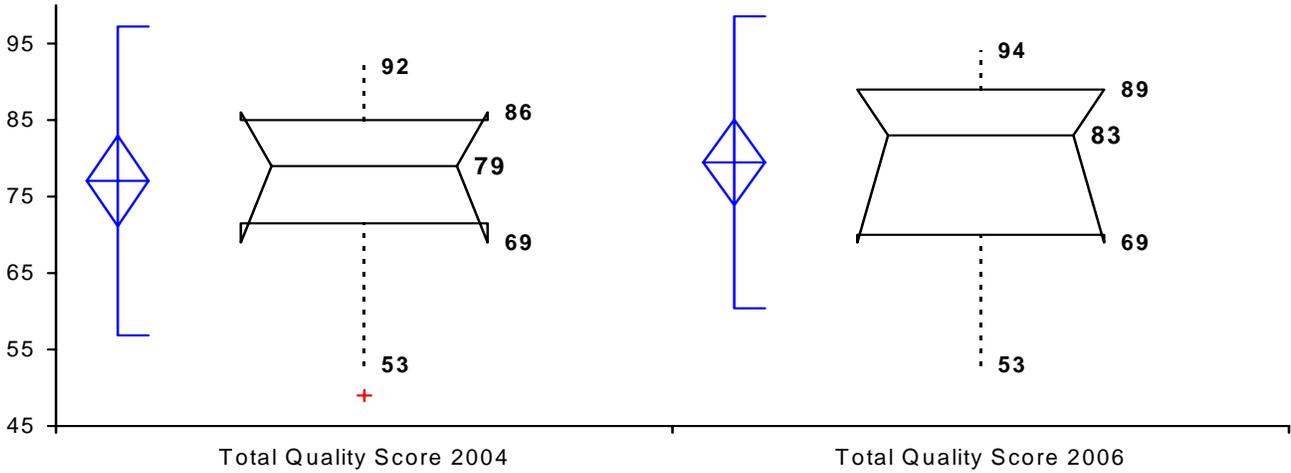


Figure 23: Drugs Prescription Quality Score in Dioceses (distribution of observed values 2004 and 2006)

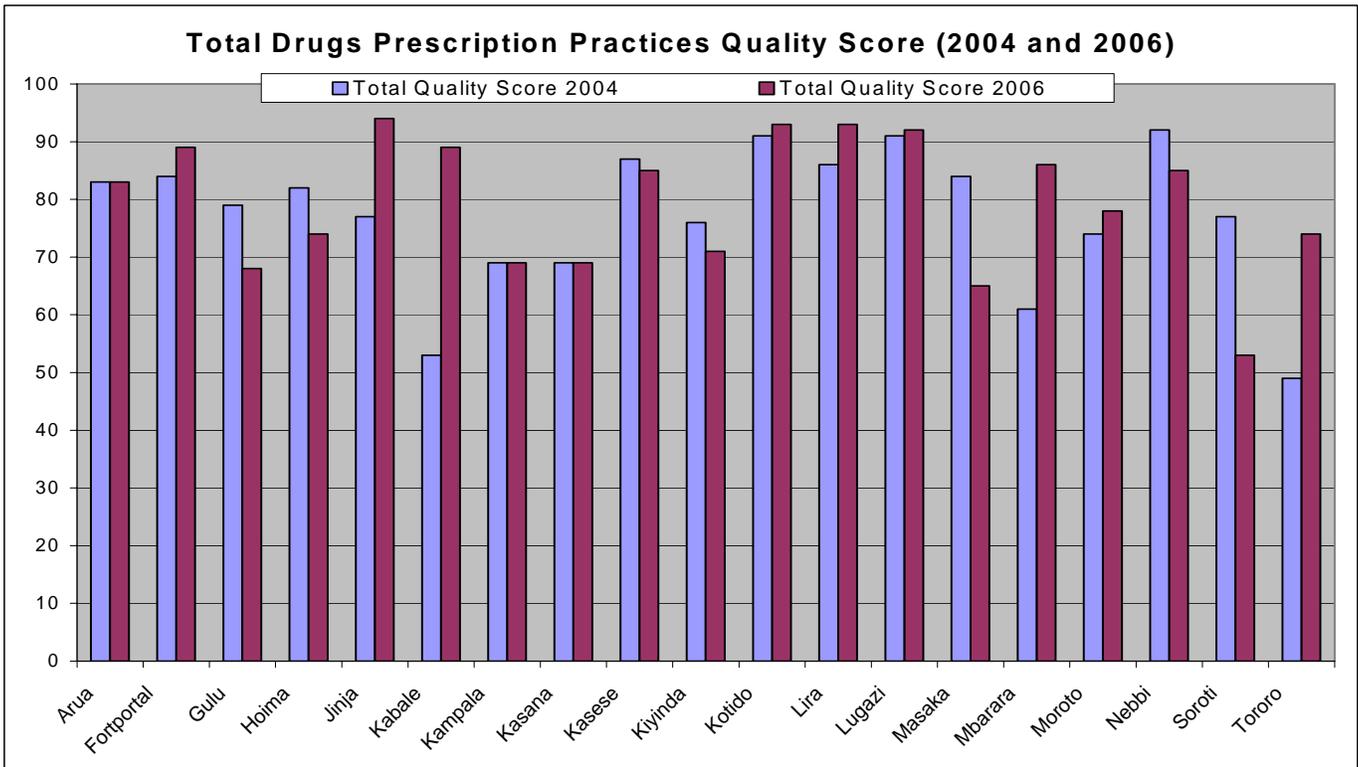
analysed with: Analyse-it + General 1.71

<b>Test</b>	<b>Comparative descriptives</b>
<b>Variables</b>	Total Quality Score 2004, Total Quality Score 2006
<b>Performed by</b>	Andrea Mandelli
<b>Date</b>	4 November 2006



	n	Mean	SD	SE	95% CI of Mean		Median	IQR	95% CI of Median	
<b>Total Quality Score 2004</b>	19	77	12	3	71	83	79	14	69	86
<b>Total Quality Score 2006</b>	19	79	12	3	74	85	83	19	69	89

Figure 24: Quality Drugs Prescription Scores in Dioceses (2004 and 2006)



## CONCLUSION

Drugs Prescription Practices Quality Scores have improved both in Hospitals and Dioceses, as detailed in the tables presented here after.

### Hospitals

In Hospitals the improvement is of only one point, from 83 to 84 out of 100. 13 Hospitals (48%) have improved their score while 13 have worsened and one has remained static. The net result is a small improvement as the values for the hospitals that have improved are offsetting those that have worsened.

*Table 4: Table of Summary Scores for Hospitals (2004 and 2006 scores)*

Hospital	Poly-pharmacy 2004	Poly-pharmacy 2006	%Anti 2004	%Anti 2006	%Inj 2004	%Inj 2006	%Disp 2004	%Disp 2006	% with OE 2004	% with OE 2006	Total Score 2004	Total Score 2006
Aber	3.4	3.1	48%	11%	8%	6%	97%	91%	100%	100%	69	85
Angal	2.49	2.6	25%	20%	2%	16%	98%	100%	100%	100%	94	99
Buluba	3.24	3.7	27%	17%	4%	2%	99%	98%	100%	100%	87	86
Ibanda	3.14	3.5	28%	33%	6%	1%	99%	95%	100%	100%	87	75
Kalongo	2.61	2.7	31%	28%	4%	6%	98%	100%	100%	100%	70	92
Kamuli	3.35	3.4	25%	17%	2%	9%	98%	108%	100%	100%	85	91
Kilembe Mines	3.16	4.0	29%	30%	3%	17%	94%	98%	100%	100%	80	72
Kisubi	3.10	2.7	29%	20%	5%	15%	98%	99%	100%	100%	86	97
Kitgum	3.38	3.5	22%	26%	4%	3%	95%	95%	100%	100%	83	80
Kitovu	3.94	2.9	16%	21%	1%	8%	98%	100%	100%	100%	83	95
Kyamuhunga	3.33	2.7	26%	20%	8%	2%	93%	96%	100%	100%	80	93
Lacor	3.45	2.9	38%	26%	7%	1%	99%	96%	100%	100%	77	87
Lwala	3.46	4.0	15%	13%	8%	14%	99%	97%	100%	100%	89	80
Maracha	3.45	3.0	36%	28%	10%	15%	99%	98%	100%	100%	78	86
Matany	2.41	3.2	35%	34%	3%	18%	99%	100%	100%	100%	89	80
Mutolere	3.43	2.8	15%	27%	2%	3%	100%	98%	100%	100%	90	89
Naggalama	2.46	3.2	30%	25%	7%	11%	90%	96%	100%	100%	82	84
Nkokonjeru	2.64	3.1	15%	23%	6%	14%	100%	101%	100%	100%	99	93
Nkozi	3.39	3.5	17%	21%	16%	6%	99%	96%	100%	100%		84
Nsambya	3.60	3.2	33%	20%	10%	7%	89%	89%	100%	100%		80
Nyakibaale	3.34	3.0	26%	43%	10%	3%	97%	100%	100%	100%		79
Nyapea	2.45	2.9	21%	38%	6%	9%	92%	93%	100%	100%		76
Nyenga	3.31	3.2	22%	18%	9%	17%	97%	92%	100%	100%		83
Rubaga	4.34	3.1	24%	27%	29%	9%	102%	71%	100%	100%		70
Tororo	3.41	3.3	27%	29%	6%	8%	96%	96%	100%	100%	81	81
Villa Maria	4.13	2.8	13%	16%	15%	13%	99%	96%	100%	100%	82	92
Virika	3.35	4.4	24%	28%	14%	30%	83%	85%	100%	100%	69	39
<b>Averages</b>	<b>3.25</b>	<b>3.20</b>	<b>26%</b>	<b>24%</b>	<b>8%</b>	<b>10%</b>	<b>97%</b>	<b>96%</b>	<b>100%</b>	<b>100%</b>	<b>82</b>	<b>83</b>

**Dioceses**

In the Dioceses the overall quality has improved registering an increment of 4 points from 79 in 2004 to 83 in 2006. 10 Dioceses have improved their quality scores while 5 have worsened and 4 have remained at the same level as compared to 2004 values.

*Table 5: Table of Summary Score for Dioceses (2004 and 2006 scores)*

Diocese	% Antibiotics 2004	% Antibiotics 2006	% Injectables 2004		%Dispensed 2004	%Dispensed 2006	With OE 2004	With OE 2006	Poly-pharmacy 2004		Median Fees 2004	Median Fees 2006	Total Quality Score 2004	Total Quality Score 2006
ARUA	24%	29%	15%	16%	93%	97%	100%	100%	3.14	3.02	1,106	1,479	83	83
FORT PORTAL	25%	20%	7%	13%	99%	99%	100%	100%	3.60	3.24	2,123	2,763	84	89
GULU	29%	32%	13%	14%	94%	87%	100%	100%	3.37	3.24	980	650	79	68
HOIMA	24%	28%	13%	25%	97%	97%	100%	100%	3.64	3.88	3,262	4,070	82	74
JINJA	23%	18%	16%	7%	98%	101%	100%	100%	4.22	3.14	3,300	2,417	77	94
KABALE	24%	24%	30%	32%	52%	100%	100%	100%	3.47	3.25	2,313	2,567	53	89
KAMPALA	38%	21%	23%	14%	99%	89%	100%	99%	3.49	4.02	3,446	5,412	69	69
KASANA	25%	26%	19%	20%	91%	94%	100%	100%	3.75	3.45	2,845	3,850	69	69
KASESE	18%	25%	7%	4%	98%	100%	100%	100%	3.53	3.25	1,333	1,750	87	85
KIYINDA	23%	23%	15%	22%	94%	99%	100%	98%	3.97	3.56	1,500	3,000	76	71
KOTIDO	21%	18%	9%	12%	99%	100%	100%	100%	3.16	3.19	1,660	1,520	91	93
LIRA	16%	17%	20%	14%	98%	98%	100%	100%	3.17	2.99	1,361	1,208	86	93
LUGAZI	22%	25%	18%	11%	99%	102%	100%	100%	2.84	2.98	1,607	2,179	91	92
MASAKA	24%	31%	17%	23%	100%	99%	100%	100%	3.57	3.83	2,276	3,185	84	65
MBARARA	23%	78%	21%	19%	74%	100%	100%	100%	3.65	3.10	2,443	3,089	61	86
MOROTO	24%	24%	26%	19%	100%	99%	100%	100%	3.69	3.62	750	571	74	78
NEBBI	20%	23%	11%	21%	98%	97%	100%	100%	3.15	2.79	800	825	92	85
SOROTI	22%	24%	23%	34%	100%	95%	100%	100%	3.73	4.20	2,323	2,936	77	53
TORORO	39%	25%	40%	25%	97%	99%	100%	100%	4.05	3.48	1,636	1,853	49	74
<b>Av</b>	<b>24%</b>	<b>27%</b>	<b>18%</b>	<b>18%</b>	<b>94%</b>	<b>97%</b>	<b>1</b>	<b>1</b>	<b>3.54</b>	<b>3.38</b>	<b>1,951</b>	<b>2,385</b>		83

**References:**

**WHO Standards (2001)**

<b>Indicators (WHO 2001)</b>	<b>Standards</b>
Average number of drugs per prescription	less than 2.6
% cases/contacts given antibiotics	less than 20%
% cases/contacts given injectables	less than 15%
Average consultation time (new cases)	less than 10 mins
% drugs dispensed	100%
% of patients examined in privacy	100%
Average dispensing time	less than 5 mins

*“A Multi-Purpose Tool for Forecasting Drug Requirements and Resource Management – MoH March 2004”*

Category	No. of enctrs	Avg Drugs per enctr	% with INJ	% with AM	% with AB	Avg cost* per enctr
Age < 5	2592	3.5	45%	74%	59%	
Age > 5 or not specified	7196	3.1	28%	56%	52%	
HU level II	2400	3.2	28%	63%	51%	778
HU level III	4596	3.3	37%	62%	55%	923
HU level IV	2792	3.2	29%	58%	56%	874
District KAM	1600	3.3	39%	60%	62%	1069
District KAP	1400	3.1	39%	61%	56%	729
District KAS	1300	3.3	15%	61%	53%	729
District LUW	1488	3.3	38%	57%	54%	1154
District MAS	1200	3.4	40%	62%	47%	758
District MOY	1400	3.0	21%	57%	54%	768
District NTU	1400	3.3	32%	68%	50%	835
ALL	9788	3.2	32%	61%	54%	863
2001 data	6396	3.0	34%	57%	57%	942

- Rational Drugs Use in Rural Health Units of Uganda – April 1996
- Uganda National Drugs Policy – MoH October 2002

**Annex 1: Questionnaire format**

**Name of health Unit .....Diocese .....Dates of observation  
 .....Interviewer.....**

I have asked the In/charge of the Unit if they have the Uganda Clinical Guidelines 2003. The answer is **yes /  
 no / I do not know** (*circle the answer given*)

N	Sex	Age	Diagnosis recorded on the form	Number of drugs prescribed	Number of injectable drugs	Number of antibiotic drugs	Number of drugs actually administered	Amount paid	Comments
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									

<b>14</b>									
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<b>38</b>									
<b>39</b>									
<b>40</b>									

## Annex 2: Guidelines: Monitoring Quality of drugs prescription in OPDs

The Bureau has made it a requirement that all hospitals start quantifying and monitoring drug prescription practices annually as a part of health care quality measurement and monitoring.

The questions that need to be answered in the future are:

Given the baseline situation:

- Are therapeutic guidelines available?
- Are the forms issued to patients carrying the essential information (diagnosis?, examination? E.t.c)
- Is poly-pharmacy remaining a common practice, increasing, decreasing?
- What is the extent of the use of injectable drugs
- What is the extent of the use of antibiotics?

Other questions may be answered but they require a much more sophisticated questionnaire:

- has the choice of drugs been correct for the condition under treatment?
- Has the choice of drugs been the most cost-effective?

Note that the information collected from the exercise is a lot more than drug prescription per se but nonetheless useful for you and UCMB.

**Information on Drug Prescription Practices can only occur through Exit poll: the patient s leaving the unit must be approached and their medical form must be examined to draw all the necessary information and record it.**

### CONDUCTING THE EXIT POLL:

All that is needed is the decision to send somebody outside the Out Patient Department with a simple form (See Form 1 on page ...) allowing the recording of sex, age, weight, diagnosis, number of drugs prescribed, type of drugs prescribed and type of drugs actually obtained/administered. The person doing the exit should not be one of the clinical staff who may be subjected to bias. It is preferable to get someone from outside the hospital or at least from the non-clinical departments but able to understand outpatient medical forms. We do not need to explain that all surveys are meant to "capture" reality for what it is in normal circumstances, not for what it is when it is observed. We leave unto the Management to identify ways and means to avoid biases. Patients have to be made aware that this is an approved exercise. It is the responsibility of the chief executive to ensure that the exercise is done well otherwise interpretation of the results obtained will be misleading. Some training is necessary for the person who will do the interview. A trial is necessary to ensure that the person is competent enough and has understood how to get answers to all questions appropriately.

The interviewer has to look at the medical form and enter all data available in the recording form. Remember that the entries in the record form must replicate the medical form. It is important to know also if no diagnosis is written, no age is indicated or if the weight is not recorded on the medical form. The absence of information is already important information. We assume that what is not reported is not written on the medical form (this allows us to assess also the quality of the patients' records).

A minimum sample of 40 out-patients is interviewed as they leave the final point in the outpatient department. Special clinic days and particular prescribers are possible causes of bias. The exercise should be conducted on normal days. It is preferable not to try to get the whole sample on one single day as this may be subject to bias.

Something to be avoided is the inclusion of patients that have skipped some processes that they should have gone through and because of this, have not received a complete treatment. This occurs, for example, when patients have paid for the consultation and laboratory but the diagnosis and

treatment has not yet been recorded. A similar situation may also occur when a patient may have taken less than the complete treatment because they have not completed the payment – incase this happens in your hospital.

Although in the future we expect the hospitals to be able to do the analysis themselves, the Bureau is ready and willing to assist in the analysis of the information obtained, and provide a feed back. We expect that this exercise should be conducted in April every year.

The form provided has 12 columns. Each record takes a row of that form. To get 40 patients you need 5 forms. The top bears the name of the Hospital, the dates of the interview and the name of the interviewer, plus one question that you have to answer (availability of Uganda Clinical Guidelines 2003) for the prescribers. The answer provided has to be reported by circling the applicable case. We shall know in this way if the Uganda Clinical Guidelines are available or not.

Column n. 1: Progressive number - the first column is pre numbered by us from 1 to 8. The minimum acceptable number of cases reported is 40.

Column n. 2: Sex - here the sex of the patient has to be recorded, only if indicated in the medical form.

Either M for male or F for Female.

Column n. 3: Age – here the age must be reported only if indicated in the form. It can be either in n of year (e.g. 49 y) or of months (e.g. 14 months).

Column n. 4: History – here you will write yes (Y) if the form carries few notes indicating the history for which the patient reported (anamnesis), no (N) if there is no mention of the history (see Annex).

Column n. 5: OE – (Objective examination) – here you will write yes (Y) if the form carries few notes on the objective findings of the prescriber, no (N) if there is no mention of the objective findings.

Column n. 6: Diagnosis – here you will write yes (Y) if the form indicates one or more diagnosis, no (N) if there is no mention of the diagnosis.

Column n. 7: N. of drugs prescribed – here you enter the number of drugs written down in the medical form. We just want to know the number of drugs prescribed, not what has been prescribed. For example If a patient got Chloroquine and Aspirin only, the entry is 2. We do not mean the number of tablets or capsules.

Column n. 8: N of injectable drugs. Out of the drugs prescribed, count how many are in injectable form and write their number on the form.

Column n. 9: N of antibiotic/antibacterial drugs. Out of the drugs prescribed, count how many are antibiotics (regardless of whether oral or injectable) and write their number on the form.

Column n. 10: Total n. of drugs actually administered – here the interviewer has to look at the drugs held by the patient and also ask if anything else was given (e.g. injection). The prescription may not rhyme with the actual administration, especially if the patient did not have enough money to pay all drugs. Write the number of administered drugs on the form. For example if Chloquine and Aspirin were prescribed and the patient got only Aspirin, the entry is 1.

Column n 11: Amount paid. Simply ask the patient how much s/he has paid for the service (not only for the drugs but for the entire set of services received). Write the amount in the form. This helps you in doing already the monitoring of user fees - a catch 2-2 situation: while you observe drugs prescription you also collect additional important information.

Column n. 12: Comments. Here you will write what you think is important to note down. If there is nothing to note, just skip it.

When a minimum of 40 observations have been entered the forms are ready for submission. Check the quality information make one copy for the hospital and send the data to UCMB.