

Draft Monitoring Report for ADDO data from Sept 2003 to June 2004

February 11TH 2005.

For September and December 2003 and for March and June 2004, one hundred patients were randomly selected from the record books of each ADDO shop and entered into a data base. This means that there were more shops in the latter months than the former. The following tables give rich evidence of how the ADDO shops are doing in their treating of illnesses of major public health concern. Most of this data is presented overall as well as by survey and by district. Much data is also broken down by gender and shown for under-5 year olds and for 60 year olds and over. The data shown here does not show individual shops. However it can do for most variables looked at. The data depends on the accuracy of recording of the patients the shops have seen. We have no evidence on how correct and complete that is. However we have a lot of data from many shops and there is a consistency in it that suggests a validity that is useful for assessing how well these shops are dealing with diseases of public health importance.

Overall, of the patients they are seeing and recording there are slightly more males than females (52% to 48%). About 14 % are under five years old with slightly more females than males (54%- 46%) (table 1). The percentage of under-5s varies from 19% in Songea Rural to 13% in Songea Urban and Mbinga and 16% in Namtumbo (table 2). There are also about 13% of patients aged 60 or over (table 2). Each patient is receiving on average 1.3 drugs regardless of age (table 3) which is consistent over surveys and district. Some 22% of patients receive antibiotics (32% for under-5s, 19% for 60s and over) (table 4). Along with 3% receiving injections (slightly more for under-5s less for 60s and over) (table 5). The cost per case is around 503 Tanzanian Shillings. This is almost the same for males and females, with slightly more for children under-5 (578) and less for 60s and over (473) (table 6).

Two thirds of the patients were in urban settings (table 1) of which 13% were under 5 and 14% were 60 years old or more. Of the 33% rural patients 17% were under 5 and 10% were 60 or over (table 2). This shows proportionally slightly more under 5s in the rural setting. In the rural setting there are slightly more drugs per case for under 5s and over 60s (1.4 v 1.3) (table 3) and more urban people in general and under 5s in particular receive antibiotics (24% v 20% and 36% v 26%) (table 4). Injections are more common in the rural areas especially for under 5s (9% v 2%) (table 5). The cost per case is on average 13% more in the urban areas (523 v 463 TSh)(table 6). For under 5s the cost is 35% more in urban than rural areas (647 v 477 TSh).

Table 9 shows the most commonly used drugs, both overall and by survey. Paracetamol, SP, metronidazole and amoxicillin are the three most commonly sold drugs in all. Average prices are also shown in table 12.

In the SEAM assessment people received 1.7 drugs on average overall with 1.6 at MOH establishments, 2.3 at NGOs and 1.8 at private institutions. So the ADDOs 1.3 compares favourably to those. The percentage of patients receiving antibiotics (22.4%) is also favourable to these other establishments (49%, 45% and 56% respectively) (table 12).

For the under five year olds some 71% had a diagnosis of one of four ailments: malaria (33%), ARI (26%), pneumonia (7%) or diarrhoea (5%) (table 2). This varied only slightly over the four surveys of September 2003, December 03, March 04 and June 04, with 25%, 33%, 37% and 32% of under-5s diagnosed with malaria respectively (table 2). However over districts the percentage of under-5 cases that were diagnosed as malaria was most in Namtumbo (46%) and least in Songea Urban (24%) (table 2). In the SEAM survey (table 12) the overall percentages for children's diagnoses were 29%, 16%, 9% and 3.5% for malaria, ARI, pneumonia and diarrhoea respectively. It is noteworthy how few children were diagnosed with diarrhoea in both surveys.

If we compare rural; to urban then 77% of rural children had one of these four conditions compared to 68% of urban children. The biggest difference was malaria with 44% of rural children being diagnosed with it compared to 26% of urban children. Both for pneumonia and malaria a rural patient of any age was much more likely to receive an injection than an urban patient.

For Malaria 59% overall and 29% of under-5s received SP (the recommended first line treatment), 27% received amodiaquine or amodiaquine syrup and 11% overall and 24% of under-5s received quinine (another 3% overall and 10% under 5s received quinine injections at least once). This is the recommended third line treatment (table 7). These proportions did not change much by survey except for a reduction in 1st line and increase in 2nd and 3rd line treatments in March for under 5s (table 7). However when we look by district the percentage of under-5s receiving quinine varied from 35% in Songea Rural (plus 6% receiving injections of quinine) to 4% in Namtumbo (with 13% receiving quinine injections). SP was given more frequently to urban patients (63% v 52%) (table 7) with amodiaquine more common in rural areas (17% v 13%) with quinine similar in both urban and rural (11%) as is quinine injections to under 5s, (10 v 9%).

The average dose of Sulfadoxine Pyrimethamine overall (1,449 mgs) is very close to the 1500mgs recommended adult dose, whereas Sulfamethopyrazine Pyrimethamine was only given in two thirds of adult dose although the manufacturers recommendations are 1,000 mgs for an adult (1050 mgs compared to 1500mgs recommended adult dose) (table 7). The average dose of SP for under-5s was 588 mgs compared to an average recommended dose of 500mgs, all districts averaged over 500 mgs. The dose given for under-1 year olds averaged 525 mgs (which is around 1 tablet. The recommended dose of 250 mgs is half a tablet, so that the doses appear high, but is actually not, as the drug seller will only sell a whole tablet). For 1 year olds and over the dose is a little high which also probably reflects part tablet doses (table 10). All doses are slightly less in rural areas than urban (table 7).

The average dose of amodiaquine overall is close to the adult recommended dose (1339 mgs compared to 1600mgs recommended) (table 7). This did not change much by survey or district. The average under-5 dose in all surveys is 1044-452 mgs. This is more than the recommended 350mgs, but may also reflect the part tablet problem (table 3). A little too much was given to under-1 year olds, as well as 1, 2 3 and 4 year olds (table 10). But this may also reflect the part tablet problem, and it is better to give too much than too little. By district Songea Urban gave the biggest doses (530 mgs) but all the other districts were close (500, 505 and 400) (table 7).

The average dose of quinine tablets given overall was 5,342 mgs compared to an average recommended adult dose of 12,600 mgs (table 7). This went down from 7,214mgs and 6,934 mgs in Sept and Dec 03 down to 4,6451 and 4,917 mgs in March and June 04, and was greater in Songea Urban (6,106 mgs) compared to 4,083mgs in Songea Rural. For children overall the dose given was 2,383 mgs compared to an average recommended 3,150 mgs. The children's dose does not vary much by district 2,050-2,476mgs. The dose of Quinine given was above that recommended for under 1 year olds, but very low for all other age groups (table 10).

For ARI, overall 42% received an antibiotic (table 4). This compares favourably with the public and private establishments of the SEAM assessment where the percentage varied from 67-94% (table 12). For pneumonia more than 98% received an antibiotic (table 4). About 62% were given amoxicillin (one of the first line drugs) (table 8) but the dose appears low (2,445 mgs against the recommended 5,000 mgs). Only about 6% were given the other first line treatments of cotrimoxazole, but in an adequate dose (5580 mgs against the 4,800 mgs recommended (table 8). These percentages were similar in children.

For children, the given doses of cotrimoxazole amoxicillin and phenoxymethyl penicillin were quite close to recommended for all age groups, but for metronidazole the doses were above (table 11).

For diarrhoea treatment is more worrying. Only 0.4% of cases overall, 5% of under-5s and 2% of 60+ year olds presented with diarrhoea (table 1), but of these 25% received antibiotics (29% of under-5s) (table 4), 70% received metronidazole (53% of under-5s and 82% of 60 plus) and only 13% received ORS (29% of under-5s and 2% of 60 plus) (table 8).

More diarrhoea was diagnosed in Sept 03 reducing survey by survey. For under-5s this was 8% of under-5s in Sept 03, followed by 7.3%, 5.5% and 3.8% for the subsequent three surveys (table 2). In Sept 03, 52% of under-5s received antibiotics for diarrhoea reducing to 29%, 26% and 21% in subsequent surveys (table 4). However it seems that metronidazole was substituted for the antibiotics with 26% under-5s receiving metronidazole in Sept 03 followed by 59%, 53% and 66% in subsequent surveys (table 8). The use of ORS reduced in this same time with 39% and 41% of under-5s receiving it in Sept and Dec 03 followed by 28% and 21% in the following surveys. This compares to an average 77% of cases receiving ORS and 33% receiving metronidazole in the SEAM assessment (table 15).

If we look by district the percentage of under 5 cases that are diarrhoea are 6% in Songea Urban, 5% in Songea Rural and 4% and 2% in Namtumbo and Mbinga (table 2). More are given antibiotics in Songea Urban (34% against around 21% in the other three districts (table 4). Metronidazole was given most often to under-5s with diarrhoea in Songea Rural (64%) followed by Mbinga (60%), Songea Urban (51%) and Namtumbo (31%) (table 8). In Namtumbo ORS was given to 39% of under-5s with diarrhoea with 30% in Songea Urban, 27% in Songea Rural and not one in Mbinga!!

Conclusion

This monitoring system is able to highlight strengths and weaknesses of the dispensing practices of ADDOs. Overall they seem to compare favourably with other establishments in Tanzania, surveyed during the SEAM assessment (table 12). However there are distinct areas for improvement that this monitoring data can both detect and monitor the effectiveness of interventions to improve practice. It is surprising how few under-5 year olds are catered for with only about 14% of patients. This may be a recording problem by the shop keepers.

Malaria is seen very commonly, but in children quinine and quinine injections, (a third line treatment) are used more often in Songea Urban and Rural and with a similar rate in Mbinga, than SP (1st line). The injections tend to be used in a single dose, so they may be giving one injection and referring. The quinine tablets are being given in low doses, reflecting the difficulty of taking tablets for 7 days. It is much easier (but less profitable) to give the single needed dose of SP)

For ARI antibiotics are used more frequently than needed (around 40%) although this compares favourably with other health establishments in the SEAM survey. For pneumonia, cotrimoxazole, a first line drug is used very rarely (about 6% of cases) seemingly in good dosage for adults and not so bad for under-5s. Amoxicillin another first line drug is used much more frequently (from 60-70% of cases). The dosage is less than needed in both adults and children.

Diarrhoea in particular is badly managed, with a high usage of antibiotics and metronidazole and low usage of ORS. It is conceivable that people purchase their ORS from other sources, but almost all cases get an antibiotic or metronidazole. These are worse in some districts than others, but are poor in all. However not many come to the drug shop for diarrhoea and these may only be the serious ones.

If there are any chances for supervisory and educational interventions, it is these aspects that should be concentrated on for improvement: the use and dosage of antimalarials and antibiotics and the management of diarrhoea.

Table 1: Patients looked at by gender, survey, district and rural/urban

Number of Cases (All)								
	All	Male	% male	Female	% Female			
All Cases	20,197	10,570	52.3%	9,627	47.7%			
Malaria	6,421	3,411	53.1%	3,010	46.9%			
ARI	3,002	1,521	50.7%	1,481	49.3%			
Pneumonia	743	377	50.7%	366	49.3%			
Diarrhoea	792	409	51.6%	383	48.4%			
Number of Cases: by survey								
	Sept 03 # & %		Dec 03 # & %		March 04 # & %		June 04 # & %	
All	2,300		2,200		6,797		8,900	
Malaria	597	26.0%	697	31.7%	2327	34.2%	2800	31.5%
ARI	404	17.6%	288	13.1%	898	13.2%	1412	15.9%
Pneum	86	3.7%	57	2.6%	228	3.4%	372	4.2%
Diarrhoea	118	5.1%	132	6.0%	260	3.8%	282	3.2%
% total		52.4%		53.4%		54.6%		54.7%
Number of Cases by District: All								
	Songea urban		Songea rural		Namtumbo		Mbinga	
	#	%	#	%	#	%	#	%
All	11,993		3,801		2,203		2,200	
Malaria	3,349	27.9%	1,559	41.0%	720	32.7%	793	36.0%
ARI	1,996	16.6%	450	11.8%	280	12.7%	276	12.5%
Pneumonia	453	3.8%	160	4.2%	64	2.9%	66	3.0%
Diarrhoea	544	4.5%	157	4.1%	49	2.2%	42	1.9%
Total		52.9%		61.2%		50.5%		53.5%
Number of Cases by Urban Rural: All								
	Urban # & %		Rural # & %					
All Cases	13,495	66.8%	6,702	33.2%				
Malaria	3,952	29.3%	2,469	36.8%				
ARI	2,147	15.9%	855	12.8%				
Pneumonia	515	3.8%	228	3.4%				
Diarrhoea	594	4.4%	198	3.0%				
% cases		53.4%		56.0%				

Table 2: Under 5 and 60 and over patients looked at by gender, survey, district and rural/urban

Number of Cases: (< 5 and >60)								
	Under 5 # & %		< 5 Male # & %		< 5 fem # & %		>= 60 # & %	
All Cases	2,856	14.1%	1,321	46.3%	1,535	53.7%	2,574	12.7%
Malaria	948	33.2%	450	47.5%	498	52.5%	756	29.4%
ARI	740	25.9%	331	44.7%	409	55.3%	308	12.0%
Pneumonia	201	7.0%	96	47.8%	105	52.2%	79	3.1%
Diarrhoea	148	5.2%	72	48.6%	76	51.4%	60	2.3%
% Total <5 & >60 cases	71.3%						46.7%	
Number of cases by survey <5								
	Sep-03		Dec-03		Mar-04		Jun-04	
	Under 5 # & %		Under 5 # & %		Under 5 # & %		Under 5 # & %	
All	287	12.5%	235	10.7%	1100	16.2%	1234	13.9%
Malaria	72	25.1%	79	33.6%	405	36.8%	392	31.8%
ARI	88	30.7%	49	20.9%	259	23.5%	344	27.9%
Pneum	14	4.9%	10	4.3%	77	7.0%	100	8.1%
Diarrhoea	23	8.0%	17	7.2%	61	5.5%	47	3.8%
% total < 5 cases	68.6%		66.0%		72.9%		71.6%	
Number of Cases by District: Under 5								
	Songea urban		Songea rural		Namtumbo		Mbinga	
	Under 5 # & %		Under 5 # & %		Under 5 # & %		Under 5 # & %	
All	1,499	12.5%	716	18.8%	351	15.9%	290	13.2%
Malaria	367	24.5%	324	45.3%	162	46.2%	95	32.8%
ARI	458	30.6%	154	21.5%	57	16.2%	71	24.5%
Pneumonia	108	7.2%	51	7.1%	21	6.0%	21	7.2%
Diarrhoea	86	5.7%	44	6.1%	13	3.7%	5	1.7%
Total	68.0%		80.0%		72.1%		66.2%	
Number of Cases by Urban Rural: Under 5 and =>60s								
	< 5 Urban # & %		< 5 Rural # & %		>= 60 Urban # & %		>= 60 Rural # & %	
All Cases	1,696	12.6%	1,159	17.3%	1,906	14.1%	668	10.0%
which Malaria	437	25.8%	510	44.0%	564	29.6%	192	28.7%
ARI	486	28.7%	254	21.9%	227	11.9%	81	12.1%
Pneumonia	130	7.7%	71	6.1%	60	3.1%	19	2.8%
Diarrhoea	94	5.5%	54	4.7%	45	2.4%	15	2.2%
% Total <5 & >60 cases	67.6%		76.7%		47.0%		46.0%	

Table 3: Drugs Per Case

Drugs per case								
	All	Male	Female	Under 5	< 5 Male	< 5 Fem	=> 60	
All Cases	1.3	1.3	1.3	1.3	1.3	1.3	1.3	
<i>Malaria</i>	1.6	1.6	1.6	1.6	1.6	1.5	1.5	
<i>ARI</i>	1.3	1.3	1.3	1.2	1.2	1.2	1.3	
<i>Pneumonia</i>	1.3	1.3	1.4	1.2	1.2	1.2	1.3	
<i>Diarrhoea</i>	1.4	1.3	1.4	1.3	1.3	1.3	1.1	
Drugs per case by survey:								
	Sep-03 All	Dec-03 All	Mar-04 All	Jun-04 All	Sep-03 <5s	Dec-03 <5s	Mar-04 <5s	Jun-04 <5s
All	1.3	1.4	1.3	1.4	1.2	1.4	1.3	1.3
<i>Malaria</i>	1.5	1.6	1.5	1.6	1.5	1.7	1.5	1.6
<i>ARI</i>	1.3	1.2	1.2	1.3	1.1	1.2	1.2	1.3
<i>Pneum</i>	1.4	1.4	1.4	1.3	1.1	1.3	1.2	1.2
<i>Diarrhoea</i>	1.3	1.4	1.3	1.4	1.3	1.5	1.2	1.3
Drugs per case by district:								
	Songea urban		Songea rural		Namtumbo		Mbinga	
	All	All	All	All	Under 5	Under 5	Under 5	Under 5
All	1.3	1.3	1.4	1.3	1.3	1.4	1.3	1.3
<i>Malaria</i>	1.6	1.5	1.7	1.5	1.6	1.6	1.5	1.5
<i>ARI</i>	1.3	1.3	1.3	1.2	1.2	1.2	1.2	1.2
<i>Pneumonia</i>	1.4	1.4	1.2	1.2	1.2	1.3	1.1	1.2
<i>Diarrhoea</i>	1.4	1.3	1.3	1.4	1.3	1.4	1.0	1.0
Drugs per case by rural urban								
	All		Under 5		> 60			
	Urban	Rural	Urban	Rural	Urban	Rural		
All Cases	1.3	1.3	1.3	1.4	1.3	1.4		
<i>Malaria</i>	1.6	1.6	1.6	1.5	1.5	1.5		
<i>ARI</i>	1.3	1.3	1.2	1.2	1.2	1.2		
<i>Pneumonia</i>	1.4	1.3	1.2	1.2	1.4	1.2		
<i>Diarrhoea</i>	1.4	1.3	1.3	1.3	1.1	1.3		

Table 4: Per Cent of cases with antibiotics

% cases with antibiotics:								
	All	Male	Female	Under 5	< 5 Male	< 5 Fem	=> 60	
All Cases	22.4%	21.6%	23.3%	31.7%	31.1%	32.1%	18.7%	
<i>Malaria</i>	4.8%	4.2%	5.5%	8.2%	7.8%	8.5%	4.6%	
<i>ARI</i>	42.0%	41.8%	42.2%	40.7%	39.0%	42.1%	41.6%	
<i>Pneumonia</i>	98.7%	98.9%	98.4%	98.0%	97.9%	98.1%	98.7%	
<i>Diarrhoea</i>	24.6%	24.0%	25.3%	29.1%	27.8%	30.3%	20.0%	
% cases with antibiotics by survey:								
	Sep-03 All	Dec-03 All	Mar-04 All	Jun-04 All	Sep-03 <5s	Dec-03 <5s	Mar-04 <5s	Jun-04 <5s
All	26.1%	22.0%	19.2%	24.0%	36.2%	30.3%	29.2%	33.0%
<i>Malaria</i>	5.4%	4.9%	4.4%	5.0%	12.5%	10.1%	7.7%	7.4%
<i>ARI</i>	47.3%	44.4%	36.0%	43.8%	44.3%	40.8%	37.8%	41.9%
<i>Pneum</i>	98.8%	96.5%	97.8%	99.5%	100.0%	100.0%	96.1%	99.0%
<i>Diarrhoea</i>	33.9%	26.5%	19.6%	24.5%	52.2%	29.4%	26.2%	21.3%
% cases with antibiotics by district:								
	Songea urban		Songea rural		Namtumbo		Mbinga	
	All	Under 5	All	Under 5	All	Under 5	All	Under 5
All	23.3%	34.6%	21.3%	28.9%	17.5%	21.9%	24.1%	34.8%
<i>Malaria</i>	5.5%	11.5%	4.2%	7.1%	3.2%	3.1%	4.7%	7.4%
<i>ARI</i>	40.4%	36.9%	48.2%	50.7%	30.7%	35.1%	54.7%	47.9%
<i>Pneumonia</i>	99.1%	99.1%	96.3%	94.1%	100.0%	100.0%	100.0%	100.0%
<i>Diarrhoea</i>	25.4%	33.7%	22.9%	22.7%	22.5%	23.1%	23.8%	20.0%
% cases with antibiotics rural-urban:								
	All		Under 5		> 60			
	Urban	Rural	Urban	Rural	Urban	Rural		
All Cases	23.8%	19.6%	35.7%	2560.0%	18.7%	18.7%		
<i>Malaria</i>	5.5%	4.1%	11.5%	6.0%	3.9%	5.8%		
<i>ARI</i>	40.4%	45.1%	36.9%	46.8%	43.6%	37.5%		
<i>Pneumonia</i>	99.1%	97.9%	99.1%	96.8%	97.7%	100.0%		
<i>Diarrhoea</i>	25.4%	23.0%	33.7%	22.6%	14.0%	35.3%		

Table 5: Per Cent with injections

% of cases with injection:								
	All	Male	Female	Under 5	< 5 Male	< 5 Fem	=> 60	
All Cases	2.6%	2.5%	2.7%	4.3%	5.1%	3.9%	1.9%	
<i>Malaria</i>	2.6%	2.2%	3.0%	6.9%	7.1%	6.2%	1.5%	
<i>ARI</i>	0.5%	0.4%	0.6%	0.3%	0.0%	0.5%	0.0%	
<i>Pneumonia</i>	4.6%	5.0%	4.1%	4.5%	7.3%	1.9%	3.8%	
<i>Diarrhoea</i>	0.3%	0.2%	0.3%	0.0%	0.0%	0.0%	0.0%	
% of cases with injection by survey:								
	Sep-03 All	Dec-03 All	Mar-04 All	Jun-04 All	Sep-03 <5s	Dec-03 <5s	Mar-04 <5s	Jun-04 <5s
All	0.7%	1.8%	2.3%	3.4%	1.7%	3.9%	4.4%	5.2%
<i>Malaria</i>	1.8%	1.6%	2.5%	3.0%	5.6%	6.4%	6.9%	6.4%
<i>ARI</i>	0.0%	0.7%	0.3%	0.7%	0.0%	0.0%	0.0%	0.6%
<i>Pneum</i>	0.0%	1.8%	4.8%	5.9%	0.0%	0.0%	5.2%	5.0%
<i>Diarrhoea</i>	0.0%	0.0%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%
% of cases with injection by district								
	Songea urban		Songea rural		Namtumbo		Mbinga	
	All	Under 5	All	Under 5	All	Under 5	All	Under 5
All	1.3%	1.7%	3.3%	5.2%	5.5%	12.0%	5.4%	7.2%
<i>Malaria</i>	1.6%	4.6%	150.0%	3.7%	780.0%	13.0%	4.0%	12.6%
<i>ARI</i>	0.3%	0.0%	0.4%	0.0%	1.4%	3.5%	1.1%	0.0%
<i>Pneumonia</i>	0.9%	0.0%	6.9%	5.9%	23.4%	23.8%	6.1%	4.8%
<i>Diarrhoea</i>	0.0%	0.0%	0.0%	0.0%	4.1%	0.0%	0.0%	0.0%
% of cases with injection by urban rural:								
	All		Under 5		> 60			
	Urban	Rural	Urban	Rural	Urban	Rural		
All Cases	1.3%	5.1%	1.5%	8.6%	0.6%	5.4%		
<i>Malaria</i>	1.6%	3.7%	4.6%	7.8%	0.7%	2.7%		
<i>ARI</i>	0.3%	0.9%	0.0%	0.7%	0.0%	0.0%		
<i>Pneumonia</i>	0.9%	10.3%	0.0%	9.7%	0.0%	8.3%		
<i>Diarrhoea</i>	0.0%	0.8%	0.0%	0.0%	0.0%	0.0%		

Table 6: Cost per case

Cost per case:								
	All	Male	Female	Under 5	< 5 Male	< 5 Fem	=> 60	
All Cases	503	504	502	578	572	583	473	
<i>Malaria</i>	471	471	472	436	434	438	486	
<i>ARI</i>	674	690	658	702	714	693	664	
<i>Pneumonia</i>	774	757	791	774	736	809	815	
<i>Diarrhoea</i>	466	456	472	521	487	554	456	
Cost per case by survey:								
	Sep-03 All	Dec-03 All	Mar-04 All	Jun-04 All	Sep-03 <5s	Dec-03 <5s	Mar-04 <5s	Jun-04 <5s
All	542	540	447	527	685	667	491	614
<i>Malaria</i>	484	550	423	489	592	563	369	451
<i>ARI</i>	671	643	609	723	721	719	636	745
<i>Pneum</i>	916	782	731	766	875	880	699	807
<i>Diarrhoea</i>	480	469	414	500	599	850	409	511
Cost per case by district:								
	Songea urban		Songea rural		Namtumbo		Mbinga	
	All	Under 5	All	Under 5	All	Under 5	All	Under 5
All	516	644	435	453	522	503	532	635
<i>Malaria</i>	502	535	382	345	564	395	432	436
<i>ARI</i>	668	746	571	555	846	680	716	761
<i>Pneumonia</i>	801	758	701	767	734	790	800	860
<i>Diarrhoea</i>	448	576	439	402	623	585	573	476
Cost per case by urban rural:								
	All		Under 5		> 60			
	Urban	Rural	Urban	Rural	Urban	Rural		
All	523	463	647	477	481	450		
<i>Malaria</i>	502	438	535	374	506	452		
<i>ARI</i>	668	687	746	632	680	633		
<i>Pneumonia</i>	801	731	758	793	865	754		
<i>Diarrhoea</i>	448	498	576	446	384	635		

Table 7: Malaria Details

Malaria								
	All	Male	Female	Under 5	< 5 Male	< 5 female	>=60	
% receiving antimalarials:	88.1%	88.7%	87.3%	85.6%	88.0%	83.5%	91.8%	
% encounters where SP is dispensed:	58.9%	60.1%	57.4%	29.0%	29.1%	28.9%	74.9%	
<i>Sulfadoxine Pyrimethamine:</i>	50.6%	51.7%	49.4%	28.9%	28.9%	29.0%	58.7%	
<i>Sulfamethopyrazine Pyrimethamine:</i>	8.3%	8.4%	8.0%	0.1%	0.2%	0.0%	16.1%	
Avg. mgs Sulfadoxine Pyrimethamine dispensed	1,449	1,470	1,423	588	606	572	1,576	
Avg. mgs Sulfamethopyrazine Pyrimethamine dispensed	1,050	1,050	1,050	0	0	0	0	
% encounters amodiaquinine dispensed:	14.6%	15.0%	14.2%	13.9%	13.8%	14.1%	13.0%	
Avg. mgs amodiaquinine dispensed	1,339	1,352	1,324	502	513	491	1,608	
% encounters amodiaquine syrup dispensed:	11.9%	1.3%	2.0%	11.9%	1.4%	2.0%	0.0%	
Avg. mgs amodiaquinine syrup dispensed:	10	10	10	10	10	10	0	
% encounters quinine dispensed:	10.7%	10.2%	11.3%	24.2%	26.2%	22.3%	2.9%	
Avg. mgs Quinine dispensed	5,342	5,424	5,258	2,383	2,375	2,392	92,342	
% encounters chloroquine dispensed:	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
% encounters quinine injection dispensed:	2.9%	2.5%	3.3%	9.6%	10.4%	8.9%	1.3%	
Malaria by survey								
	Sep-03 All	Dec-03 All	Mar-04 All	Jun-04 All	Sep-03 <5s	Dec-03 <5s	Mar-04 <5s	Jun-04 <5s
% receiving antimalarials:	91.3%	92.8%	86.6%	87.4%	90.3%	92.3%	82.5%	86.7%
% encounters SP dispensed:	62.3%	61.6%	56.3%	59.5%	29.2%	32.1%	24.9%	32.7%
<i>of which: Sulfadoxine Pyrimethamine:</i>	50.1%	45.9%	48.8%	53.4%	29.2%	30.8%	24.9%	32.7%
<i>Sulfamethopyrazine Pyrimethamine:</i>	12.2%	15.6%	7.5%	6.2%	0.0%	1.3%	0.0%	0.0%
Avg. mgs Sulfadoxine Pyrimethamine dispensed	1,429	1,514	1,426	1,457	575	744	556	587
Avg. mgs Sulfamethopyrazine Pyrimethamine dispensed	-	1050	-	-	-	-	-	-
% encounters amodiaquinine dispensed	13.2%	12.9%	15.9%	14.3%	8.3%	11.5%	15.6%	13.8%
Avg. mgs amodiaquinine dispensed	1,425	1,482	1,302	1,324	533	1,044	463	452
% encounters amodiaquine syrup dispensed	3.1%	1.6%	1.3%	1.7%	3.1%	1.6%	1.3%	1.7%
% encounters quinine dispensed	10.7%	15.2%	10.9%	9.4%	20.8%	23.1%	27.7%	21.4%
Avg. mgs Quinine dispensed	7,214	6,934	4,645	4,917	2,560	1,983	2,309	2,536
% encounters chloroquine dispensed	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
% encounters other antimalarials dispensed:	2.7%	2.3%	2.6%	3.3%	12.5%	14.1%	8.6%	9.2%

Table 7 continued: Malaria Details

Malaria by district								
	Songea urban		Songea rural		Namtumbo		Mbinga	
	All	Under 5	All	Under 5	All	Under 5	All	Under 5
% receiving antimalarials:	90.5%	87.7%	86.5%	88.9%	81.4%	74.1%	87.0%	86.3%
% encounters SP dispensed:	62.9%	29.2%	53.6%	25.3%	47.6%	34.0%	62.3%	32.6%
<i>of which: Sulfadoxine Pyrimethamine:</i>	50.5%	29.0%	50.1%	25.3%	43.8%	34.0%	58.3%	32.6%
<i>Sulfamethopyrazine Pyrimethamine:</i>	12.4%	0.3%	3.5%	0.0%	3.9%	0.0%	4.0%	0.0%
Avg. mgs Sulfadoxine Pyrimethamine dispensed	1,484	624	1,401	576	1,338	525	1,476	609
Avg. mgs Sulfamethopyrazine Pyrimethamine dispensed	1,050	-	-	-	1,050	-	-	-
% encounters amodiaquine dispensed	13.0%	10.1%	18.1%	20.4%	18.5%	11.7%	11.2%	10.5%
Avg. mgs amodiaquine dispensed	1,453	530	1,169	500	1,358	505	1,299	400
% encounters amodiaquine syrup dispensed	1.7%	1.7%	0.7%	0.7%	3.4%	3.4%	1.4%	1.4%
% encounters quinine dispensed	11.1%	24.3%	12.6%	35.2%	7.1%	3.7%	8.5%	21.1%
Avg. mgs Quinine dispensed	6,106	2,349	4,083	2,476	5,918	2,050	4,366	2,100
% encounters chloroquine dispensed	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
% encounters other antimalarials dispensed:	2.2%	10.7%	1.9%	5.9%	6.8%	13.0%	4.0%	12.6%

Malaria by rural urban						
	All		<5		> 60	
	Urban	Rural	Urban	Rural	Urban	Rural
% receiving antimalarials:	90.3%	84.5%	87.2%	84.3%	92.7%	89.1%
% encounters where SP is dispensed:	63.0%	52.3%	30.7%	27.7%	77.7%	66.7%
<i>Sulfadoxine Pyrimethamine:</i>	51.0%	50.0%	30.4%	27.7%	56.6%	65.1%
<i>Sulfamethopyrazine Pyrimethamine:</i>	12.0%	2.3%	0.2%	0.0%	21.1%	1.6%
Avg. mgs Sulfadoxine Pyrimethamine dispensed	1,481	1,397	616	562	1,578	1,571
Avg. mgs Sulfamethopyrazine Pyrimethamine dispensed	1,050	1,050	-	-	-	-
% encounters amodiaquine dispensed:	13.1%	17.0%	10.1%	17.3%	10.5%	20.3%
Avg. mgs amodiaquine dispensed	1,448	1,205	573	466	1,638	1,564
% encounters amodiaquine syrup dispensed:	11.0%	14.6%	11.0%	14.6%	0.0%	0.0%
% encounters quinine tablets dispensed:	10.8%	10.5%	22.9%	25.3%	3.9%	0.0%
Avg. mgs Quinine dispensed	6,104	4,082	2,364	2,398	9,232	-
% encounters chloroquine dispensed:	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
% encounters other quinine injections dispensed:	2.2%	4.1%	10.1%	9.2%	1.1%	2.1%

Note: Correct dose for Sulfadoxine Pyrimethamine: adult-1500mgs; average child - 500mgs

Note: Correct dose for Sulfamethopyrazine Pyrimethamine: adult 1500mgs; average child - 500mgs

Note: Correct dose for amodiaquine: adult-1600mgs; average child - 350mgs

Note: Correct dose for Quinine: adult -12,600 mgs; average child - 3,150mgs

Table 8: Pneumonia, ARI and Diarrhoea Details

Overall

		All	Male	Female	Under 5	< 5 Male	< 5 female	>=60 yo
Diarrhoea	% receiving ORS:	13.3%	13.0%	13.6%	29.1%	25.0%	32.9%	1.7%
	% receiving Metronidazole	70.1%	71.2%	68.9%	53.4%	59.7%	47.4%	81.7%
For ARI	% encounters with Cotrimoxazole:	4.0%	3.6%	4.3%	6.6%	5.4%	7.6%	4.2%
	Avg. mgs Cotrimoxazole per encounter:	4,581	4,810	4,371	1,217	1,049	1,311	7,200
	% encounters with Amoxicillin:	19.5%	19.9%	19.1%	19.3%	18.4%	20.1%	20.1%
	Avg. mgs Amoxicillin per encounter:	2,625	2,823	2,413	3,388	3,439	3,328	4,039
	% encounters with Benzyl Penicillin:	0.2%	0.3%	0.1%	0.1%	0.0%	0.2%	0.0%
Pneumonia	% encounters with Cotrimoxazole:	5.9%	6.6%	5.2%	5.5%	8.3%	2.9%	5.1%
	Avg. mgs Cotrimoxazole per encounter:	5,580	4,893	6,445	-	-	-	7,200
	% encounters with Amoxicillin:	61.8%	63.4%	60.1%	67.7%	66.7%	68.6%	53.2%
	Avg. mgs Amoxicillin per encounter:	2,445	2,559	2,320	-	-	-	3,757
	% encounters with Benzyl Penicillin:	2.6%	2.4%	2.7%	4.0%	6.3%	1.9%	2.5%

By Survey

		Sep-03 All	Dec-03 All	Mar-04 All	Jun-04 All	Sep-03 <5s	Dec-03 <5s	Mar-04 <5s	Jun-04 <5s
Diarrhoea	% receiving ORS:	17.8%	11.4%	14.6%	11.0%	39.1%	41.2%	27.9%	21.3%
	% receiving Metronidazole:	58.5%	75.8%	70.0%	72.3%	26.1%	58.8%	52.5%	66.0%
For ARI	% encounters with Cotrimoxazole:	6.2%	5.6%	2.5%	4.0%	12.5%	8.2%	5.4%	5.8%
	Avg. mgs Cotrimoxazole per encounter:	4,439	5,717	3,003	4,886	-	-	-	-
	% encounters with Amoxicillin:	24.5%	20.5%	16.2%	20.0%	29.6%	24.5%	15.1%	19.2%
	Avg. mgs Amoxicillin per encounter:	2,890	2,804	2,505	2,554	-	-	-	-
	% encounters with Benzyl Penicillin:	0.0%	0.0%	0.3%	0.2%	0.0%	0.0%	0.0%	0.3%
Pneumonia	% encounters with Cotrimoxazole:	8.1%	3.5%	7.5%	4.8%	7.1%	10.0%	9.1%	2.0%
	Avg. mgs Cotrimoxazole per encounter:	7,258	4,373	3,928	6,478	-	-	-	-
	% encounters with Amoxicillin:	60.5%	61.4%	61.0%	62.6%	71.4%	50.0%	58.4%	76.0%
	Avg. mgs Amoxicillin per encounter:	3,009	3,951	2,355	2,152	-	-	-	-
	% encounters with Benzyl Penicillin:	0.0%	0.0%	3.1%	3.2%	0.0%	0.0%	3.9%	5.0%

Table 8 continued: Pneumonia, ARI and Diarrhoea Details

By District		Songea urban		Songea rural		Namtumbo		Mbinga	
		All	< 5	All	<5	All	Under 5	All	Under 5
Diarrhoea	% receiving ORS:	10.3%	30.2%	16.6%	27.3%	40.8%	38.5%	7.1%	0.0%
	% receiving Metronidazole	72.6%	51.2%	67.5%	63.6%	42.9%	30.8%	78.6%	60.0%
ARI	% encounters with Cotrimoxazole:	4.0%	7.6%	6.2%	5.8%	1.1%	1.8%	3.3%	5.6%
	Avg. mgs Cotrimoxazole per encounter:	4,259	-	6,133	-	5,467	-	3,989	-
	% encounters with Amoxicillin:	19.6%	19.9%	17.1%	16.9%	14.3%	19.3%	27.9%	21.1%
	Avg. mgs Amoxicillin per encounter:	3,689	5,849	3,300	5,854	3,870	6,776	3,533	4,992
	% encounters with Benzyl Penicillin:	0.1%	0.0%	0.4%	0.0%	1.1%	1.8%	0.0%	0.0%
Pneumonia	% encounters with Cotrimoxazole:	6.0%	6.5%	2.5%	2.0%	10.9%	4.8%	9.1%	9.5%
	Avg. mgs Cotrimoxazole per encounter:	6,143	-	5,880	-	7,704	-	4,800	-
	% encounters with Amoxicillin:	63.6%	65.7%	59.4%	66.7%	51.6%	61.9%	65.2%	85.7%
	Avg. mgs Amoxicillin per encounter:	3,514	-	2,431	-	1,897	-	1,997	-
	% encounters with Benzyl Penicillin:	0.2%	0.0%	5.6%	5.9%	9.4%	19.1%	4.6%	4.8%

By Rural Urban

		ALL		<5		Over 60	
		Urban	Rural	Urban	Rural	Urban	Rural
Diarrhoea	% receiving Metronidazole	72.5%	68.7%	47.9%	63.0%	84.4%	73.3%
ARI	% encounters with Cotrimoxazole:	3.8%	4.4%	7.6%	4.7%	4.0%	4.9%
	Avg. mgs Cotrimoxazole per encounter:		5,857	633	1,972	9,600	9,600
	% encounters with Amoxicillin:	20.1%	18.1%	20.2%	17.7%	19.8%	21.0%
	Avg. mgs Amoxicillin per encounter:	3,736	3,339	7,500	6,140	7,500	6,140
	% encounters with Benzyl Penicillin:	0.1%	0.6%	0.0%	0.4%	0.0%	0.0%
Pneumonia	% encounters with Cotrimoxazole:	6.2%	5.3%	7.7%	1.4%	6.7%	0.0%
	Avg. mgs Cotrimoxazole per encounter:	5,569	7,897	240	240	9,600	0
	% encounters with Amoxicillin:	64.3%	56.1%	71.5%	60.6%	50.0%	63.2%
	Avg. mgs Amoxicillin per encounter:	3,240	2,427	39	40	6,394	6,979
	% encounters with Benzyl Penicillin:	0.2%	7.9%	0.0%	11.3%	0.0%	10.5%

Note: Recommended dose for Cotrimoxazole: adult-4,800 mgs minimum: average child 2,400 mgs.

Note: Recommended dose for Amoxicillin: adult -5,000 mgs: average child - 5,000 mgs

Table 9: Most Commonly Used Drugs (All and by Survey): Numbers of sales and average unit price

	Avg Unit Cost	# times used				
		Total	Sep-03	Dec-03	Mar-04	Jun-04
Paracetamol:	7.3	6436	550	681	2262	2943
S-P:	82.2	3290	307	325	1147	1511
Metronidazole:	13.8	1462	278	39	573	572
Amoxicillin:	27.9	1325	185	132	395	613
Diclofenac:	23.4	1127	130	127	348	522
Cough Syrup:	448.3	977	143	79	334	421
Amodiaquine:	47.1	954	85	88	373	408
Chlorpheniramine:	7.4	851	66	49	288	448
Phenoxymethyl Penicillin:	23.4	788	91	34	281	382
Cotrimoxazole:	18.9	727	87	118	193	329
Quinine:	33.1	694	66	107	255	266
Sulphamethopyrazine-Pyrimethamine:	401.1	534	75	110	176	173
Antacid:	8.5	512	57	60	158	237
Ibuprofen:	16.4	475	43	43	167	222
Acetylsalicylic Acid:	4.9	438	58	28	137	215
Indomethacin:	14.3	408	39	31	137	201
Albendazole:	91.5	400	56	52	133	159
Erythromycin:	36.5	252	0	12	216	24
TOTAL		21,650	2,316	2,115	7,573	9,646

Table 10: Antimalarial Doses given and recommended for under 5 year olds

	# <1yo	dose	# 1yo	dose	# 2yo	dose	# 3yo	dose	# 4yo	dose
Sulphadoxine-Pyrimethamine										
Sep-03	1	525	4	525	6	700	6	525	4	525
Dec-03			5	525	8	525	7	1,125	4	788
Mar-04	2	525	24	569	33	557	21	575	22	525
Jun-04	2	525	28	525	41	602	6	525	28	600
Average dose and total #	5	525	61	542	88	585	40	656	58	579
Recommended dose		250mgs		500mgs		500mgs		500mgs		500mgs
Amodiaquine										
Sep-03			3	400			1	600	3	600
Dec-03			1	1,600	3	1,333	2	500	2	600
Mar-04	6	300	13	385	17	459	17	529	10	560
Jun-04	4	550	6	367	21	419	12	500	12	583
Average dose and total #	10	400	23	435	41	502	32	519	27	578
Recommended dose		250mgs		350 mgs		350 mgs		450 mgs		450 mgs
Quinine										
Sep-03	1	3,000	4	2,025	6	2,650	3	2,300	1	4,500
Dec-03	3	1,600	6	1,750	6	2,200	2	2,700	1	1,800
Mar-04	7	1,500	41	2,107	27	2,444	21	2,443	16	275
Jun-04	7	1,714	21	2,157	17	2,665	26	2,908	13	2,677
Average dose and total #	18	1,683	72	2,088	56	2,507	52	2,677	31	1,468
Recommended dose		1,575mgs		3,150mgs		3,150mgs		3,150mgs		3,150mgs

Table 11: Antibiotic Doses given and recommended for under 5 year olds

	<1yo	Dose	1yo	Dose	2yo	Dose	3yo	Dose	4yo	dose
Cotrimoxazole										
Sep-03					2	3,600	1	2,400	1	4,800
Dec-03			3	6,080	2	3,600	1	4,800	1	3,360
Mar-04	3	2,240	7	3,086	5	4,128	3	4,480	4	3,960
Jun-04			1	2,400	5	3,264	7	3,017	8	5,100
Total Cotrimoxazole	3	2,240	11	3,840	14	3,669	12	3,480	14	4,629
Recommended dose		2,400mgs		4,800mgs		4,800mgs		4,800mgs		4,800mgs
Amoxycillin										
Sep-03	0								2	1,000
Dec-03	0									
Mar-04	0				3	4,583	2	3,125	2	3,750
Jun-04	0		1	2,500			4	3,000	7	3,571
Total Amoxycillin	0		1	2,500	3	4,583	6	3,042	11	3,136
Recommended dose		5,000mgs		5,000mgs		5,000mgs		5,000mgs		5,000mgs
Phenoxyethyl Penicillin										
Sep-03					1	2,000				
Dec-03					1	1,750				
Mar-04	7	949	16	1,873	28	2,170	10	2,975	10	2,610
Jun-04	5	800	10	2,275	15	2,396	14	2,036	14	1,393
Total Phenoxy M Pen	12	887	26	2,028	45	2,232	24	2,427	24	1,900
Recommended dose		1,250 mgs		2,500 mgs		2,500 mgs		2,500 mgs		2,500 mgs
Metronidazole										
Sep-03			2	1,000	6	5,867	4	2,300	2	3,000
Dec-03										
Mar-04	4	900	20	1,520	20	1,720	19	1,632		
Jun-04	2	800	8	1,400	4	1,600	2	6,000	4	4,500
Total Metronidazole	6	867	30	1,453	30	2,533	25	2,088	6	4,000
Recommended dose		600mgs		900mgs		1,050 mgs		1,125 mgs		1,425 mgs

Table 12: Comparisons of ADDO data with data from other establishments gathered from SEAM Survey in Tanzania in 2000.

	ADDO monitoring data	All SEAM Assessment	MOH	Private	NGO
# Establishments	201	42	22	15	3
# Patients	20,197	1,511	793	538	108
% child patients**	14.1%	35.8%	38.7%	32.0%	32.4%
Number of drugs per case	1.3	1.7	1.6	1.8	2.3
% generics	na	71.5%	75.7%	66.5%	72.8%
% All drugs given antibiotics	17.2%	33.3%	30.5%	29.4%	27.2%
% All cases given antibiotics	22.4%	49.3%	49.1%	55.8%	45.4%
% All drugs given metronidazole	5.4%	4.1%	3.1%	3.7%	3.7%
# cases malaria	6421	342	173	117	35
% cases malaria	31.8%	22.6%	21.8%	21.7%	32.4%
% of child cases	33.2%	28.8%	28.7%	26.7%	48.6%
% cases with antibiotics	4.8%	16.4%	13.3%	21.4%	11.4%
# pts with ARI	3002	171	90	74	3
% cases ARI	14.9%	11.3%	11.3%	13.8%	2.8%
% of child cases	25.9%	15.9%	15.6%	20.3%	2.9%
% ARI with antibiotics	42.0%	89.5%	88.9%	93.2%	66.7%
# pts with pneumonia	743	70	36	27	4
% cases pneumonia	3.7%	4.6%	4.5%	5.0%	3.7%
% of child cases	7.0%	9.2%	8.5%	11.0%	5.7%
% Pneumonia cases with antibiotics	98.7%	98.6%	100.0%	100.0%	100.0%
# cases of diarrhoea	792	30	21	5	1
% cases diarrhoea	3.9%	2.0%	2.6%	0.9%	0.9%
% of child patients	5.2%	3.5%	3.6%	2.3%	2.9%
% Diarrhoea cases with antibiotics	24.6%	30.0%	23.8%	20.0%	100.0%
% Diarrhoea cases with ORS	13.3%	76.7%	81.0%	80.0%	100.0%
% Diarrhoea cases with metronidazole	70.1%	33.3%	33.3%	40.0%	0.0%

Note:** An ADDO child is under 5 years old. A SEAM assessment child may be under 13 years old