AKHS Kenya
Community Health Department

Policy Brief No.1

Building a Dispensary Health Management Information System

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In 1997 and in the Coast Province of Kenya the Aga Khan Health Services, working in close collaboration with the Kenya Ministry of Health, began the Kwale Health Systems Strengthening Project (KHSSP), which aims to improve the quality of health care at the dispensary level. This first of a series of 'policy briefs' focuses on one of the most significant outcomes of that project – the development of an effective dispensary health management information system.

These briefs are primarily intended for directors and managers of community-based health care programmes – whether working within ministries of health, donor agencies or non-government organisations. For such people this first brief takes up a number of likely questions about health management information systems in small, local health facilities:

- *Why are they needed?*
- *Can they be established and used by community groups?*
- *What impact do they have?*
- *What are the lessons from the Kwale project that can be applied elsewhere?*

The Context

The following statistics from 1997, when KHSSP began, show how – apart from within the narrow coastal and tourist strip of Kwale – the district is among the poorest in Kenya:

- 89% of the households were engaged in subsistence agriculture; less than 2% of the households earned more than Ksh.2,000 per month (about US$30) from the sale of crops or livestock;
- 80% of the households had annual incomes of less than Ksh.61,300 (less than US$1,000);
- The overall level of literacy was 41% – but for men it was as high as 63% and for women as low as 23%.

As for the health status of the community, the following figures from the same year showed the magnitude of the problems faced by the project:

- 68% of children aged six to 60 months were malnourished;
- 17% of the children aged from 12 to 23 months were classified as 'severely underweight';
- Only 56% of the population had knowledge of family planning methods.
- Only 50% of the mothers could name two immunisable diseases; while only 33% could correctly interpret the growth curves of their children.

The Project

Constrained by a lack of manpower and financial resources, and as is the case in most if not all developing countries, the Kenya Ministry of Health was unable to maintain a consistent supply of drugs in its health facilities, and it was prevented from providing adequate supervision of the staff who worked in them. The solution envisaged by KHSSP was to make the ministry's dispensaries more self-sufficient.

Unlike many previous initiatives in different parts of the world, in which community participation has been stimulated outside the government health facilities – through such activities as establishing community pharmacies along the Bamako Initiative lines, or supporting volunteers in community-based health education programmes – KHSSP sought to promote public participation inside the dispensaries. The key objective was to strengthen the capacities of the dispensary health committees (DHCs), comprising representatives drawn from the village health committees of the catchment areas, so that they could more effectively raise and monitor funds, and oversee the services provided in both the facilities and in any outreach activities.

To do these things effectively, the DHCs needed a practical health management information system.

They needed it for a number of reasons:

- As a description of the dispensary's locality – its population, its common health problems, its resources;
- In order to identify trends in disease patterns and to warn of dangerous outbreaks of disease or emerging epidemics;
- As a basis for planning health education and other health care initiatives;
- In order to raise the awareness of public about health issues;
- In order to inform the public about the dispensary's income and expenditure.

The Mtaa Example

The Mtaa Dispensary was one of the six chosen for the initial phase of the KHSSP. It had been established in the 1970s as a community-based facility – what in Kenya is called a 'harambee' project. Eventually, the Ministry of Health took it over, posted a nurse-in-charge, and began to supply kits of essential drugs. At the time the KHSSP started, the community wasn't very much involved in the running of the dispen-

sary. What happened there, supported by the project, illustrates how an ordinary but determined small community can collaborate with the ministry's health staff in successfully managing a local health facility.

The key figure in developing and operating the health management information system at Mtaa was a volunteer and a DHC member. She is Zabibu Chizi Mwero. She had been trained as a nurse-aid, and for a time she had left the village and worked in a private clinic. When she decided to return home, she was struck by the way the Mtaa Dispensary was falling short of other health facilities she had seen. So she volunteered her services. When she attended the training course for the DHC members provided by the KHSSP, she became particularly interested in what was said about health management information systems. She started collecting data for the Mtaa Dispensary and writing it up on a blackboard and on charts.

The blackboard shows the total population of the dispensary's catchment area – its distribution across the five villages. There is the total number of households, the number of children under five, and the number of mothers in the age-group 15 to 49. On the right-hand side there is information about morbidity – showing the top five diseases.

NUMBER OF VILLAGES 5

NUMBER OF HOUSEHOLDS 501

TOTAL POPULATION 3677

NUMBER OF UNDER 5 YRS 525

MOTHERS 15–49 YRS 724

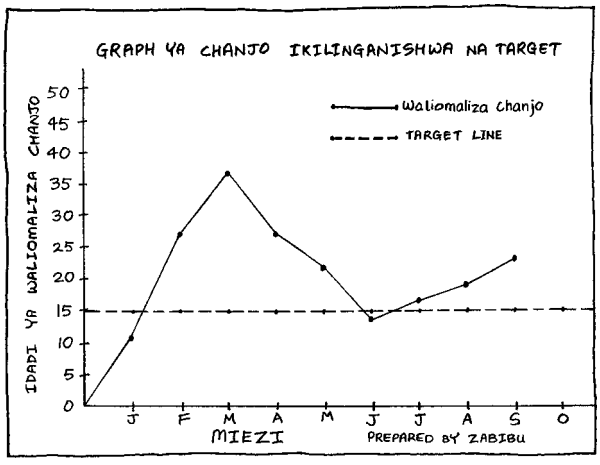
	SERVICE / MONTH	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	MORBIDITY												
1	MALARIA	142	160	180	190	168	147	247	196	154			
2	URTI	82	81	86	62	64	21	82	64	45			
3	BILHARZIA	3	3	17	5	7	2	3	2	6			
4	WORMS	12	16	12	30	36	30	30	28	14			
5	ANAEMIA	6	2	9	8	10	13	16	17	24			
	F.P.												
1	TARGET	55	55	55	55	55	55	55	65	55	55	55	55
2	NEW	14	14	16	5	15	16	3	NIL	5			
3	RE-VISITS	16	16	8	3	5	15	11	8	15			
	ANC												
1	NEW	18	11	31	24	16	12	10	8	9			
2	RE-VISIT	8	8	11	20	40	34	26	54	25			
3	TOTAL	26	19	42	44	56	46	36	62	34			
	GMM												
1	UNDER WT	17	31	35	22	24	8	7	20	10			
2	NORMAL	58	132	218	165	95	143	152	153	153			
3	TOTAL	75	163	253	187	119	151	159	173	163			
	IMMUNIZATION												
1	TARGET	15	15	15	15	15	15	15	15	15	15	15	15
2	< 1 YR	11	28	37	27	21	14	16	18	21			
3	> 1 YR	NIL	4	2	NIL	3	7	2	3	NIL			
4	TOTAL	11	32	39	27	24	21	18	21	21			

This is how the main HMIS board at Mtaa looked in October 2000:

All this information is taken from the registers completed by the nurse-in-charge – since he is the one who actually attends to the patients. At the end of each month, Zabibu notes how many patients have been treated for malaria, for respiratory problems, for bilharzias… and so on. And she writes up on the board the figures for the top five diseases.

She records information about patients' attendance – 'visits' and 're-visits' – and about immunisation, growth monitoring, and family planning. She gets the information about family planning partly from the dispensary and partly from the 'family planning motivators' – the FPMs – who work within the community. She gets the figures for growth monitoring and immunisation also from both the dispensary and from the villages. Almost every month the DHC organises 'health action days' – so both growth monitoring and immunisation is carried out in every village.

For all the main activities the Mtaa DHC sets targets. For immunisation, for example, the target is for 15 children to be fully immunised every month – and the board shows that the dispensary was achieving this target every month from February until October.



Immunisation target

All this information is used in the DHC meetings. 'We can see, for example, when the figures for malaria are rising,' Zabibu says. 'We ask ourselves what we can do about it. Or maybe we are not reaching our target for immunisation. So we ask ourselves the reason why – the reason why mothers are not bringing their children to the dispensary. Also, the board is for public use. When people come here, they can see what we are doing. They can see what the problems are and what we are doing about them. This is what we mean by transparency!'

The board is used for communicating with the wider community. 'Before we developed this MIS the people didn't know how much money was collected each month,' Zabibu goes on. 'Now they know – and they also know how it is being spent. The people know exactly what is going on. And they see this as their own dispensary.'

HABARI YA PESA YA KILA MWEZI YA 2000

MWEZI	WALIO-HUDUMI-WA	WASIO-LIPA	PESA ZA WASIO-LIPA	WANAO-DAIWA	PESA TUNAZO-DAI	MA-PA-TO	MATU-MIZI	ZILIZO-BAKIA	ZILIZO-PELEKWA BENKI	ZILIKO-TOLEWA BENKI	ZILIZO MIKO-NONI	PESA ZILIZOKO BENKI
						A	B	C	D	E	F	
JAN	243	NIL	NIL	–	–	6,232	3,878	2,754	NIL	NIL	3,461.50	4,395
FEB	222	NIL	NIL	72	829	7,015	2,478.50	-461.50	1,520	NIL	1,480	5,915
MAR	482	1	25	85	1,932	10,104	7,090	3,014	2,500	NIL	1,994	8,415
APR	425	4	80	88	1,519	8,917	5,168	3,749	3,585	NIL	2,158	12,000
MAY	360	1	25	64	1,058	7,281	8,068	-787	NIL	NIL	1,371	12,000
JUNE	307	3	75.00	52	890	6,126	4,815	1,311	NIL	NIL	2,682	12,000
JULY	536	NIL	NIL	38	1,199	13,880	10,847	3,033	NIL	NIL	5,715	12,000
AUG	586	2	50	78	2,148	15,380	12,201	3,179	NIL	NIL	8,894	12,000
SEPT	384	NIL	NIL	24	5,004	8,668	8,979	-311	NIL	NIL	8,583	12,000
OCT												
NOV												
DEC												

SURPLUS/(DEFICIT) = A-B. CASH IN HAND (F) = B/F + C - D + E

PREPARED BY ZABIBU

Money chart

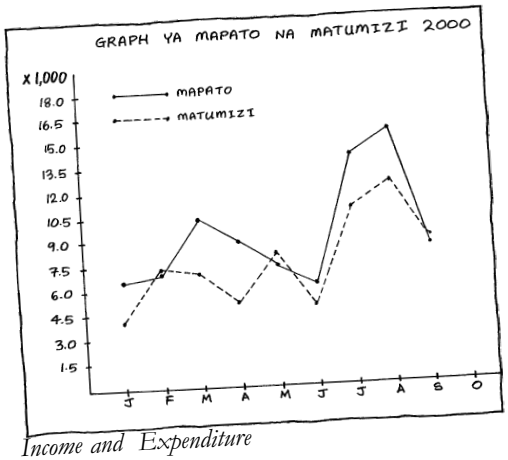
The 'money chart you see here is divided into columns. The first column shows the number of people attending. The second is for people who don't pay. There is a column for exemptions – indicating the money waived. Another column is for debtors and the amounts they owe. The total collection for the month is recorded – and the adjacent column records the total expenditure. There is a record of the funds left at the end of the month – what was taken to the bank, and what was taken from the bank. Finally, there is a column showing the total amount in the bank, on an accumulated basis.

On a chart analysing expenditure, the first column indicates what was spent on drugs. The following columns show expenditure on salaries, on maintenance, stationery, transport, gas, and allowances. The last column shows the total expenditure for the month.

There is a third chart that is completed on a weekly basis. Every day, Zabibu counts the number of patients seen and the amount of money collected. So, by the end of the month, they don't have to go back to the cashbooks again to do all the calculations. The DHC can now employ a clerk to help with the recording of financial information. He fills in the daily collection book. And all his recording is overseen by the DHC treasurer.'

The walls of room in the dispensary where the DHC meets are covered in charts. A number of them display graphs.

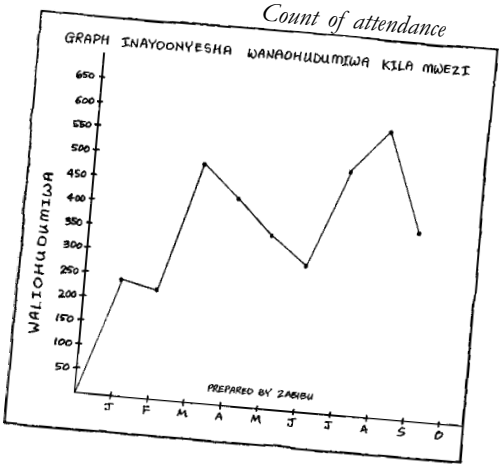
Of the examples given here, one makes a comparison between income and expenditure (the continuous line showing income and the dotted line expenditure);

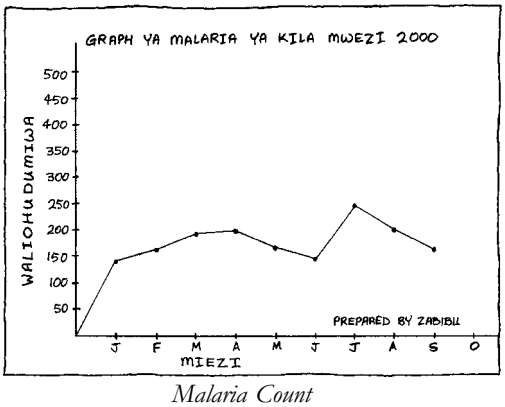


Income and Expenditure

a second indicates utilisation (the count of attendances on a monthly basis); and the third focuses on malaria (the main scourge in Mtaa).

Count of attendance

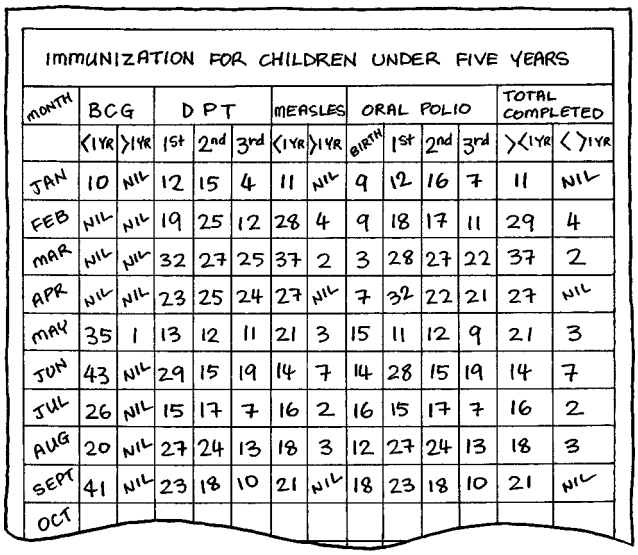




Malaria Count

The final example gives more data on immunisation:

For BCG, there is a record for 'under-ones' and 'above-one-year'. For DPT, there is a record for first, second and third immunisations. For measles, the record is for 'under-one-year' and 'after-one-year'. The same applies to polio vaccinations.



IMMUNIZATION FOR CHILDREN UNDER FIVE YEARS

MONTH	BCG		DPT			MEASLES		ORAL POLIO				TOTAL COMPLETED	
	<1YR	>1YR	1st	2nd	3rd	<1YR	>1YR	BIRTH	1st	2nd	3rd	>1YR	<>1YR
JAN	10	NIL	12	15	4	11	NIL	9	12	16	7	11	NIL
FEB	NIL	NIL	19	25	12	28	4	9	18	17	11	29	4
MAR	NIL	NIL	32	27	25	37	2	3	28	27	22	37	2
APR	NIL	NIL	23	25	24	27	NIL	7	32	22	21	27	NIL
MAY	35	1	13	12	11	21	3	15	11	12	9	21	3
JUN	43	NIL	29	15	19	14	7	14	28	15	19	14	7
JUL	26	NIL	15	17	7	16	2	16	15	17	7	16	2
AUG	20	NIL	27	24	13	18	3	12	27	24	13	18	3
SEPT	41	NIL	23	18	10	21	NIL	18	23	18	10	21	NIL
OCT													

'You will see that we fell below the target of 15 in June, during the rainy season when people were busy going to the *shambas*,' says Zabibu. 'And you will see that the figure shot up in September, when the harvest was over.'

'Also notice,' Zabibu goes on, 'for BCG we monitor the 'above-one-years'….. That tells us something about the quality of our service. It tells us that we have raised the awareness that children should be presented at the right age. And, after BCG, we look for the continuity of the service that is given by the DPT. Where the general awareness about immunisation is low, you will find children starting the immunisation schedule at a later age.'

The reaction of the nurse-in-charge, Moses Kamau, to the voluntary work of Zabibu and the DHC is most significant. Rather than being at all resentful of the way his management responsibilities are shared with the DHC members, he is very appreciative of what they are doing: 'Depending on how you, as the nurse in-charge, interact with the committee,' he says, 'it can make your life very easy or very difficult. If you interact well, you don't have to carry the burden of management all by yourself. You can have discussions, share ideas – and come up with good plans. So this DHC really is a management committee. From the money we now get, we can pay for a clerk and a watchman. And we can buy our own drugs.'

Achievements

After two years, there were encouraging indicators that, not only at Mtaa but across all the six dispensaries, KHSSP was having a positive impact:

Financial Viability

For the period January 1998 to July 2000, the average monthly income of dispensaries rose from Ksh 9,609 (USD 130) to Ksh 19,312 (USD 261) – an increase of 110%.

Increased Utilisation

The figures for utilisation also, in the main, moved in upward curves.

- For preventive care, the average monthly utilisation figure for the dispensaries increased from 329 in 1998 to 471 in 2000 – an increase of 54%.
- For curative care, the average monthly utilisation figure per dispensary rose less dramatically: from 662 in 1998 to 723 in 2000 – an increase of 15%.

Furthermore, the records show that many more outreach activities were taking place. And, for the first six months of 2000, none of the dispensaries was without drugs for even a single day.

Improved Health Care

- Immunisation coverage rose from 73% to 77%. An increase of 4% might not in itself seem very significant. But the important point here is that this increase was made even after Kenya's national donor-funded immunisation programme had stopped – so it was achieved entirely through the efforts of the Kwale District health services and the volunteer committee members and community health workers. Remarkably, the increase was also achieved at a time when the El Nino floods were badly disrupting communications in the district and actually destroying some facilities, when tribal clashes were creating havoc and fear in the communities, and when a strike of doctors was seriously interrupting health services.
- The proportion of children aged 12-23 months who were severely underweight dropped quite dramatically from 17% to 10%.
- Knowledge of family planning methods spread from 56% of the population to 82%.

Some Lessons

Purposes

Mtaa was, perhaps, the most successful of the six dispensaries in developing its health management information system. But the other five have similar systems that focus on the same range of administrative and health topics. All the dispensaries have shown that maintaining such a collection and display of data can improve the quality of health care in five important ways:

- Identifying the most common diseases in the catchment area that need attention;
- Sounding an alert about sudden outbreaks of diseases such as cholera or meningitis;
- Establishing a basis for action planning;
- Providing tools for monitoring and evaluating activities;
- Keeping the whole community well informed about health issues.

Focus Areas

In order that the DHCs really 'owned' their information systems, in the process of setting them up, the KHSSP field staff engaged the committee members in a discussion of the main topics and issues that should be included. These were the questions that were asked of them in initial workshop sessions:

- What health-related problems would you want to know about?
- Which groups in your population should receive special attention?
- What information about finances would you want to include?
- What other information would you want to collect and record about the administration and management of the clinic and its outreach activities?

Generalising across the six systems, the following chart shows the main health-related activities that are covered, a brief commentary on why each activity is important, and an indication of how the information is collected:

Assessment of Information Needs

Activity	Why important	How collected
Nutrition promotion for under-fives	To establish nutritional status of under-fives and provide information that assists in counselling mothers and in taking corrective measures for those adversely affected.	Growth monitoring motivators (GMMs) at the village level
Immunisation for expectant mothers and children under- two	To protect children and expectant mothers against immunisable diseases – by establishing the number fully immunised and to develop strategies for reaching those not immunised.	Dispensary staff and health workers at outreach sites
Drug supply and distribution	To reduce disease burden at the local level; to reduce cost of seeking health care.	Clinic staff and community-based drug dispensers (CBDDs)
Family planning	To promote manageable family sizes by encouraging child-spacing; to improve mothers' health.	Clinic staff and family planning motivators
Safe motherhood (ANC)	To promote safe deliveries for all expectant mothers, by ensuring that deliveries are done by skilled personnel and by capturing risk factors in good time for referral.	Dispensary staff and traditional birth attendants (TBAs)
Vital events (birth and deaths)	To monitor population growth; to identify main causes of mortality.	Village elders, chiefs and assistant chiefs
Education for health	To create awareness of health issues, increase knowledge on preventive measures, and promote good health-care practices.	Clinic staff, public health technicians (PHTs), TOTs and TOFs

DHC Baseline Data

When the DHCs were first established, they were encouraged to undertake a survey – consulting records, conducting interviews and holding discussions – to establish the following baseline data:

- Number of villages in the catchment area;
- Number of households in the village;
- Total population in the catchment area;
- Number of women of childbearing age (14-49 years);
- Number of children under five;
- Most prevalent five diseases in the catchment;
- Number of latrines/toilets;
- Number of TOTs, TOFs, TBAs and other community health workers (CHWs).

However, it should be emphasised that the ongoing operation of a dispensary-level health management information system cannot depend on ongoing 'research-type' activities that have to be used to establish the kinds of information needed in the base-line study described above. It will only be a feasible system if the information can be taken from the routine recording of patients, treatments and drug supplies at the clinic – or the information can be collected in the course of whatever outreach health-care activities are organised.

Recorders

In some of the six dispensaries in the KHSSP pilot phase, the information systems are maintained by employed clerks. The other DHCs were fortunate to find willing and capable volunteers to do the job. And this paper will have shown that a volunteer like Zabibu can do a data analysis and data display job that should be the envy of many professional record clerks – even those employed at the district or national levels.

Conclusion

The experience of the Kwale project shows that rural and relatively poor communities do have people who can take on key administrative tasks in the management of health facilities. And, to challenge what seems to be a common opinion: they need not be men – nor all that old!

Acknowledgements

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Training Programme on Dispensary Management

The material for this policy brief is drawn from a training package, ***Managing a Dispensary***, that has been developed from the experiences of KHSSP: The package is in three parts:

1. A Participatory Model: an introductory pamphlet;
2. A Handbook for Committee Members and Nursing Staff;
3. Guidelines for Facilitators.

The training package is available in printed form and on a CD. It can be obtained from:

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