Health workers income and expenditure in Malawi: an assessment of the relative contribution of incentive schemes to take home pay and the extra living costs of rural posts

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April 2009

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LIST OF ABBREVIATIONS.

CO: Clinical Officer
DHO: District Health Officer.
DEHO; District Environmental Health Officer.
EHO: Environmental Health Officer
EHP: Essential Health Care Package.
EN: Enrolled Nurse
MA: Medical Assistant.
MoH. : Ministry of Health
NMT: Nurse Midwife Technician.
RN: Registered Nurse.
SWAP: Sector Wide Approach

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EXECUTIVE SUMMARY

Introduction - The importance of health workers in improving health performance is well understood and the role of health workers pay and incomes in influencing health systems performance has also been partly studied in developing countries. However, what has been missing has been the understanding of the relationship between health workers incomes and their expenditures within countries. This study therefore sought to bridge this knowledge gap by aiming to assess the contribution of basic salary, supplements, top-ups and allowances to take home pay in the different cadres of health staff in different settings, assessing the additional costs of rurality compared to urbanity; and assessing the income and expenditure of health staff in comparison with other professionals and/or general population and against cost of living indices.

Methods - This was a cross-sectional descriptive study in which we studied 420 health workers' households within the grades of A-M in MoH, CHAM and private health facilities with one district (Phalombe, Nkhotakota and Karonga) drawn from each of the three regions representing rural and Lilongwe urban representing urban areas in Malawi. The Integrated Household Survey questionnaire which was used nationally in 2004/05 was adapted and used to allow for comparability.

Results

Income - The study findings revealed that monthly average household incomes of health workers differed markedly between government paid and private/CHAM employed health workers. Government employed health workers' household monthly incomes were 28% less than that of CHAM/private employed health workers' monthly household incomes. Salaries and allowances were the largest source of incomes for all health workers household but still only accounted for 45% and 34% of household incomes respectively for government paid health workers. In CHAM and private for profit health sector this accounted for 39% and 30% of salaries and allowances respectively. Urban based health workers households had on average higher household monthly incomes of about 40% more than their rural counterparts.

Government employed rural health workers earned marginally more (MK39,638) than urban health workers (MK39,027). The contribution of salaries to overall incomes for the two groups was essentially the same. However, the contribution of salaries to overall incomes differed by cadre of health workers. On average 76% of doctors' monthly income came from salaries and

only 12% from allowances. For nurses and medical assistants, salaries contributed 46% to their total average monthly household income while clinical officers' share of salaries to their total average household monthly incomes was 41%.

Unlike government employed health workers, CHAM and other privately employed health workers in urban areas earned more (MK132,372) than those residing in rural areas (MK93,139). However, in terms of allowances, CHAM and private for profit health sector rural health workers earned considerably more than urban health workers.

Within the allowances, the top ranking allowances were incentive scheme allowance, teaching allowance, training per diems, relief schemes and rural allowance with beneficiaries getting on average MK 17,391, MK15,252, MK 13,669, MK12,139 and MK10,131 respectively per month. Rural health workers in general benefited from multiple sources of allowances as compared to their urban counterparts. Overall, high ranking health workers benefited more from incentive scheme allowance than lower ranking health workers.

Expenditure - Households of health staff spent between 5 and 7 times more than households of the general population in 2008. For health workers the cost of living was considerably less in rural than urban areas. In terms of size of health worker incomes, there was a surplus between health worker households' average annual incomes and health workers households' average annual expenditures. However, for government employed health workers when salaries alone were taken into account, there was a gap between average annual incomes and the cost of living index in urban areas. For those employed in CHAM/private health facilities in urban areas salaries were slightly higher than the living cost index.

Conclusions - This study recommends that:

1. Much as total health worker income, which is composed of salaries, allowances, entrepreneurship and other sources, was at a level which could provide a better living standard than the general population, and the salaries of health workers were 52% higher than their counterparts in other public sectors at the same grade, salaries alone which are a regular and predicable source of income were still below the cost of living index in urban areas. As such, a further salary top–up is needed. Without this top-up staff will continue to be involved in entrepreneurship activities or demand training workshops, (which bring in allowances) etc, in an effort to maintain living standards

2. The basic salary is still insufficient to reduce the distraction of informal work and would need to be increased by a further 54% in order to reduce moonlighting by health workers.
3. The contribution of allowances to salary needs to be reduced from 43% to 14% to eliminate the disincentives to providing direct patient care. Part of the allowances is composed of relief and locum scheme allowances that can be phased out as staff levels improve. The training allowances can be stopped with a further effort of salary consolidation if these trainings are supply induced. The rural allowances can be enhanced in MOH institutions to mirror those offered in CHAM institutions.
4. The cost of living in rural areas for health workers as reflected in their expenditure pattern is lower than that of the urban health workers (health workers in rural areas spend lower amounts on everything than their urban counterparts). One reason behind this scenario is lack of availability of quality goods and services in rural areas on which health workers can spend their incomes similarly to their urban counterparts e.g. there are limited private primary and secondary schools in rural areas hence health workers children are sent to free primary and highly subsidized community secondary schools which is not the case in urban areas. This being the case it appears a multisectoral approach is needed to make remote areas more attractive. This requires pan-government action.

Chapter 1: Background and Context

1.1 Background.

The Human Resources for Health crisis in developing countries has received both international and local recognition (1; 2). Malawi, like the rest of sub-Saharan countries, is facing a critical shortage of health care professionals. There are two main reasons cited for staff shortfalls in the country and these are poor retention of existing staff due to low pay, poor working conditions and a resulting decline in morale; and inadequate production of trained health workers (3). In addition, AIDS has doubled attrition rates and increased absenteeism through ill health and attendance at funerals (4). Furthermore, some of the investment made in training is being lost as staff choose to move out of public health service into other better-paid and/or less frustrating work.

The Ministry of Health (MoH) in Malawi recognizes that the growing gap between the supply of health care professionals and the increasing demand for their services is a key issue for health and development in the country. As such, MoH policy-makers, planners and managers continue to seek effective means to recruit and retain staff.

To this end, in October 2004, the Government of Malawi launched a major Sector-wide Approach (SWAp) for the health sector that attempted to revitalize Malawi's health services and support the delivery of the Essential Health Package (EHP). The SWAp programme of work for 2004-2010 saw the pooling of funds from major donors (UK, Norway and the World Bank) to the sector into the Ministry of Health budget to cover delivery of the EHP, strengthening of human resources, systems strengthening and referral over a seven year period (5).

Health workers salaries in the public sector in Malawi are seriously low compared to other countries in the Region and this has been cited as one of the major reasons behind the serious brain drain affecting the health sector in the country (6). As such, a major component of the Malawi's Ministry of Health (MOH) Emergency Human Resources for Health Plan to address the human resource crisis in the country has been the design and implementation of initiatives to increase staff income. About 40 percent of the cost of the SWAp is allocated to strengthening human resources, of which a significant proportion is targeted towards raising the salaries of Malawi's public health workers. To this end, there was a 52% salary-top in April 2005 to 11

critical cadres of MOH and mission health workers in the country solely funded by the Department for International Development (DFID) (3).

Initiatives to promote staff welfare have not been limited to salary increments. Other initiatives have included salary supplementation to key but scarce staff such as nurse tutors, locum schemes where staff can earn extra money through overtime payments and relief schemes involving performance based pay supplements. These coexist alongside a government initiative to consolidate public service allowances such as the housing allowance into basic salaries and annual pay increases to partially neutralize the effect of inflation. The consolidation did not include per diem training allowances, which staff have found as an important means of enhancing their salaries.

The MOH and CHAM institutions are also acutely aware of the difficulty of staffing remote health facilities. In a survey undertaken in 2006/7 by MOH, 135 health centres across all 27 districts in the country were identified as "hard to staff'". These health centres included CHAM health facilities (4). The main issues identified included: poor transport and communication; lack of electricity to staff housing; lack of pumped water to staff housing; poor maintenance; lack of health centre staff appreciation and acknowledgement of their long hours compared to their district colleagues; poor access to in service training and lack of cover meant that they could not leave the duty station; lack of quality education available to their children; and feeling of isolation (efforts by one DHO to undertake regular supervisory visits were appreciated by staff).

In spite of the existence of multiple financial initiatives to support incomes of health workers in the country, no study has been done to clearly enumerate and describe important sources of health workers incomes. A survey of health staff income from all sources is important as it will provide a means of identifying key sources of health workers income and estimate the relative contribution of each.

Similarly, no study has been done to describe difference in expenditure between health workers deployed in different settings. Again, a study of health staff expenditures patterns would help identify vulnerable or economically disadvantaged health workers. Expenditure issues could then be effectively addressed by offering a salary supplement to compensate for the extra costs associated with living in remote areas. The measure of such costs by means of an expenditure survey would provide an objective way of identifying and estimating appropriate income supplementation to compensate such staff.

The surveys of income and expenditure can be combined in one survey and such a study was conducted in Malawi in 2008.

1.2 Objectives of the Study

1.2.1 General Objective of the Study

The major objective of this study was to compare actual income and expenditure of staff in different locations and thereby assess the relative contribution of salary and supplements to income and location costs to health workers household's expenditure.

1.2.2 Specific Objectives of the Study

The specific objectives of the study were to:

1. assess the contribution of basic salary, supplements, top ups and allowances to take home pay in the different cadres of health staff in different settings;
2. assess the additional costs of rurality compared to urbanity for different health cadres; and
3. assess the income and expenditure of health staff in comparison with other professionals and against cost of living indices.

1.3 Organization of the report

This report is organized into six chapters. The background and objectives of the study are presented in chapter one. Chapter two provides literature reviews on studies conducted across the globe on health workers incomes. The third chapter describes the methodology and process that was employed in undertaking the study. Chapter four presents the findings of this study while chapter five provides policy implications of adopting our study recommendations in the context of improving the welfare of heath workers in Malawi. A summary of key findings and recommendations and conclusions is presented in chapter five with references in chapter six.

Chapter 2: Literature Review

Formal and informal remuneration

The few studies that have been conducted on the importance of salaries and incomes of health workers in health systems performance have revealed that there are different ways in which health workers salaries and income affect health systems performance. The classic studies by Hertzberg et al 1959 described basic pay and safety as hygiene factors without which motivation, performance, morale and the ability of employers to attract and retain staff were not affected by other incentives. It has been observed that when pay is low in absolute terms, health workers moonlight so as to supplement their incomes by providing other health care services privately, engaging in other income earning activities, extracting informal fees from patients, or seeking per-diem payments by attending workshops and seminars (7). The survival strategies of Malawi health staff seem no different from health staff elsewhere in Africa (2). Engaging in such activities means that little time is left to implement activities that would improve the health status of the population - the core business of the health systems for which health workers are employed (8).

Salaries, allowances and differentials

With regard to health workers pay structures and sources of income, a study conducted in Ghana revealed that only 26% of the public sector doctor's monthly income was basic salary compared with 43% of that of mid-level workers such as Medical Assistants in 2005 (9). Allowances for additional hours worked contributed the largest portion of the doctor's income in Ghana. Similar findings were also found in Zambia, whereby 40% of the total income of public sector doctors was composed of allowances. Here it could imply that allowances decompress the salary structures of health workers in Africa. A comparison of doctors and community nurse's salary in Ghana showed that doctors income was three times higher than that of community nurses and if allowances are added this made it four times higher (9). A similar situation existed in Zambia where doctor's allowances in the public sector meant that they were paid four times more than nurses or midwives (10). As argued by McCoy et al, the size of pay differentials between different types of health workers (e.g. doctors and nurses) could also affect morale, working relations and available mix of cadres (6). Such differences could affect both retention within countries and distribution of health workers between geographic areas-urban/rural and between

public and private sectors. As such, there is a strong need to review critically health workers income scales and their sources.

Levels of remuneration

On the adequacy of health workers incomes, a study by Witter et al in 2005 in Ghana has revealed that public sector nurses earned nearly eleven times as much as the Gross National Income per person, whereas public sector doctors earned about thirty two times the Gross National Income per person (9). When this was compared to the general civil service salary, it was found that general civil service salaries were only four times the Gross National Income per person. Differences in earning between doctors, registered nurses, auxiliary nurses in the public sector and average Gross National Income person have also been studied in Burkina Faso and Nigeria and huge differences have also been reported (11; 12). In Malawi differences between nurses in local and international Non Governmental Organizations and the average Gross National Income were also found to be huge. For example, nurses working with international NGOs in 2005 earned 54 times more than the Gross National income per capita while those working with local NGOs earned about 36.5 times more that the Gross National Income per capita (13).

The differences in earning power could be explained by several factors and one of which is the geographic area where the health worker is based. For example, opportunities for private practice are mainly found in urban areas where most of the rich live while in rural areas, opportunities exist to grow food (6). Furthermore, incomes for different grades of health workers are high in the private for profit health sector as compared to the public sector or not for profit-private health sector. As noted above, such differences are likely to have an impact on the motivation of health workers and in the end affect the retention and distribution of health workers in the health system.

Remuneration and performance

Two sister studies to this study funded by GTZ have been undertaken in Malawi to assess the effects of locum and relief schemes (14; 15). An additional study in Malawi corroborates the improvement in health service performance where in Dowa the locum scheme reduced maternal mortality and increased caesarean sections (16). There were, however, significant unintentional disincentives found in both relief and locum schemes.

Remuneration and motivation

A number of studies in Malawi have found that although salaries are important they are not what motivate staff. A study of midwives and clinicians in four Malawi rural hospitals found that although insufficient financial remuneration had a negative impact on retention and performance, the main demotivating factors identified were limited opportunities for career development and further education (particularly for clinical officers) and inadequate or non-existent human resources management systems (17). The lack of performance-related rewards and recognition were perceived to be particularly demotivating. Performance-related allowances within the Malawi National Tuberculosis Control Programme were studied in 2003 and thought to be useful (18). Good standing and respect within the community has been found to be important in Malawi and Uganda (19-21). A recent study in Malawi finds the work environment critical (22).

The cost of living in remote areas

A financial package was only one of a number of incentives that South African doctors felt would attract them to stay in remote areas (23). A systematic review of incentives to attract health staff to remote areas in Africa finds that the usual incentives available to health sector human resources management and MOHs are probably insufficient to provide the package of incentives needed to attract staff to stay in remote areas (24). The authors conclude that a multisectoral approach is needed to build up what might be termed the basic necessities of "middle class" society in remote towns.

Conclusions

In conclusion, a review of health workers income studies have shown that knowledge of health workers salaries and incomes could go a long way in understanding how the pay structures and sources of health workers incomes and the differences in salaries and incomes contribute to explaining the health worker density and distribution between different geographic areas and between the public and private health sectors. It may also assist tackling international migration and help policy makers design appropriate interventions that would mitigate the negative consequences such as inadequacy of health workers in rural areas and low morale that results in provision of poor quality health care services.

Chapter 3: The Study Design and Methodology

We provide in this section not an exhaustive but a brief detail of the design and methodology that was used in this study. Full details are available from JC on request.

3.1 Study population

The study population was made of all trained health workers employed in MoH, CHAM and private health facilities.

Criteria for inclusion in the study were:-

- Consent to participate in the study.
- Grade A to M.
- Employed in post for 6 months or more.

3.2 Study site

One district from each region was randomly selected to represent health care workers in rural areas. An urban district was added to represent health workers in urban areas. The following four districts were therefore selected to participate in the survey:

- Phalombe-representing the South
- Nkhotakota-representing the Centre
- Karonga-representing the North; and
- Lilongwe urban-representing the urban health workers in the whole country.

The distribution and ownership of health facilities in the selected districts is shown in Table 1 below.

Table 1: Number of health facilities by ownership in selected and non selected districts, Malawi 2008

Health facilities in selected districts				
District	**Type of health facility**	**CHAM**	**MOH**	**Total**
Karonga HA	District Hospital		1	1
	Rural Hospital		2	2
	Health Centre	2	8	10
Nkhotakota HA	District Hospital		1	1
	Hospital	1		1
	Rural Hospital		1	1
	Health Centre	5	9	14
Phalombe HA	Hospital	1		1
	Maternity		1	1
	Health Centre	2	7	9
Total for selected districts	District Hospital	0	2	2
	Hospital	2	0	2
	Rural Hospital	0	1	1
	Maternity	0	1	1
	Health Centre	9	24	33
Health facilities in all districts				
All districts	Central Hospital		4	4
	District Hospital		22	22
	Hospital	22	3	25
	Rural Hospital	3	16	19
	Maternity	4	13	17
	Health Centre	116	306	422

Source: Adapted from Public Expenditure Review Report 2005,

3.3 Study type.

This was a cross sectional descriptive study.

3.4 Sample size and power.

Sample size for the study was calculated based on the following assumptions:

- 44% (135) of the 306 MOH health centres are hard to reach.
- 50% of health facilities in the selected districts, being quiet rural are hard to reach.

Then using Epi Info version 3.2.2, statcalc for sample size & power, a sample size of 500 is required to assess a difference of 20% in the distribution of income between three categories of staff (grades A – J, K – L, M), the smallest group of 44 being the technical and environmental health group comprising 11% of the total workforce, assuming a 2-tailed significance level of

0.05 and power of 80%. The sample size will also be able to assess differences of 15% between urban and rural staff at similar levels of significance and power.

In the event 420 health workers took part in the survey. Refusal rate was low, at less than 1%. About 77% of the health workers were residents of rural areas while 23% were residents of urban areas. Nurses were the largest group of health workers interviewed (56%) followed by Medical Assistants (13.6%) and Clinical Officers and Medical Doctors (13%) as shown in Table 2 below. About 62.4% of the health workers were in grade A-J, 29% in grade K-L and 8.1% in the lowest grade M.

Table 2: Number of interviewed heath workers by title and district – Income and Expenditure Survey 2008

Title	**Phalombe** ***(%)***	**Nkhotakota** ***(%)***	**Karonga** ***(%)***	**Lilongwe** ***(%)***	***Total N (%)***
CO/MO	6(10.3)	23(13.7)	13(13.3)	12(12.5)	54(12.8)
MA	11(18.9)	27(16.7)	16(16.1)	3(3.3)	57(13.6)
Nurse	34(58.6)	97(58.1)	54(54.5)	54(56.2)	239(56.9)
EH	7(12.7)	10(5.9)	9 (9.1)	4(4.1)	30(7.4)
Technicians	0(0)	10(5.9)	7(7.1)	23(24)	40(9.5)
Total	58(100)	167(100)	99(100)	96(100)	420(100)

3.5 Data collection, entry and management.

3.5.1 Recruitment and training of enumerators.

To maintain standards and quality, five enumerators with extensive survey experience were recruited for the survey. The enumerators underwent 2 day training.

3.5.2 The data collection tools.

To facilitate comparisons with previous income and expenditure surveys done in the country, we used the same data collecting tool that was used in the Integrated Household Survey of 2004/05 (IHS2) with modifications to allow for incorporation of unique sources of income in terms of allowance for health workers. Since the types of allowance vary between public and private health facilities, and also within public and private facilities, the data collection tool was piloted in one Ministry of Health district hospital and a mission hospital in the southern region so as to ensure that all major sources of allowance income for health workers were identified and included in the data collection instrument.

The final interview schedule took approximately two hours to complete per member of staff.

3.5.3 Data management.

Data collection forms were assessed every day by the enumerator supervisor, checked for completeness and consistency of recorded information. Discrepancies were corrected on the spot in collaboration with the enumerator who had filled the forms. The forms were then transferred to Malaria Alert Center (MAC) where the data were double entered on EPI info version and exported into SPSS version 12 for analysis.

Poor quality data issues and other queries were managed on an ongoing basis rather than at the end of the study so as to maximize data completeness and quality, and the timeliness of final analysis. Vigorous efforts were made during the field work to pursue missing data and minimize its degree as no plan was made to impute for missing data during the final analysis.

3.5.4 Data analysis

Different expenditure categories were collected from different sections of the questionnaire and had different recall periods. To facilitate comparisons with previous income and expenditure surveys done in the country, we used the same time periods for expenditures. However, income categories were expanded to accommodate different sources of income for health workers. The different income and expenditure categories were aggregated in the final analysis as an annual or daily value in per capita terms or at household level at 2008 real urban prices. We used market prices to record the value of all purchased items and to impute for values of all in-kind and gifts.

We categorized health workers household expenditure according to the UN statistical classification system called "Classification of Individual Consumption According to Purpose" – COICOP. This categorization divides expenditure into two: food and nonfood components. The non-food component comprises expenditure on alcohol and tobacco, clothing and footwear, imputed housing rent, household utilities and regular maintenance of housing, health, education, entertainment, personal care and use value of durable goods.

3.5.5 Limitations of the study.

The reliability of the data collected using interview methods is greatly influenced by reference periods for reporting of the data. In this study, we used recall periods for different types of items in the household incomes and expenditure primarily based on past experience with household expenditure surveys. However, it's worth noting that numerous new items with unknown optimal recall periods, especially on allowances, were introduced in the data collection tool for this study. This may have had a bearing on the quality of the data collected, the extent of which is not clear.

In addition, a plethora of allowance types exist in both the private and public health sector. The absence of experimentation in the practical application of these concepts and definitions and investigation of health workers ability to provide accurate information on the same again reduces reliability of our data.

There was room also for other biases and non-sampling errors, perhaps even more important than the above, especially understatement of incomes. Because recommendation to increase incomes of survey respondents would be a natural response to reduced reported income levels, heath workers may have deliberated underreported other sources of their incomes.

In general, rural based health workers benefit from a spectrum of allowances. Biases due to unsatisfactory recall or reference periods, if any, are therefore more likely to influence information of rural respondents.

We have attempted to address these limitations in the study through comparisons of some of our results with other income and expenditure data generated within and outside the country and to some extent by doing sub group analysis.

Chapter 4: Study Findings

In this chapter we present the results of our study. The results are presented in terms of two main categories: health workers' household expenditures and incomes by grade of health workers, employer ownership and place of residence in particular the split between urban and rural and regions - North, Centre and South.

4.1 Health Workers Household Expenditure

As indicated earlier on, the survey collected information on household expenditure, income by source and assets acquired by households of health workers. We pay particular interest to both income and expenditure of health workers even though it is the later that brings welfare to individuals.

4.1.1 Distribution of Health Workers households by expenditure group for health workers households employed in government and CHAM/private sector

Table 3 below shows that the average annual health workers household expenditure in 2008 was MK190,259. Urban health workers spent about 45.3% (MK259,551) more than their rural counterparts at MK178,578. Food consumed the largest share of their incomes at 57.9% with the rural health workers spending more on food than the urban health workers estimated at 53.5%.

Table 3: Distribution of Health Workers real annual household expenditure by item category (COICOP groups), 2008

All	Total		Urban		Rural	
	190295.8	***100.0***	**259551.3**	***100.0***	**178578.3**	***100.0***
Food	**110776.2**	***57.9***	**138916.7**	***53.5***	**103851.7**	***57.2***
Food and beverages	106593.2	*56.0*	132878.0	*51.2*	101046.5	*56.6*
Vendors/cafes	3599.1	*1.9*	6038.7	*2.3*	1045.2	*0.6*
Non food	**79519.6**	***42.1***	**120634.6**	***46.5***	**74726.7**	***42.9***
Alcohol	3996.2	*2.1*	7264.0	*2.8*	4107.3	*2.3*
Clothing and footwear	6660.3	*3.5*	9858.3	*3.8*	5893.1	*3.3*
Furnishing	9895.3	*5.2*	14787.4	*5.7*	9643.2	*5.4*
Housing and utilities	27973.4	*14.7*	39173.8	*15.1*	26072.4	*14.6*
Health	1712.6	*0.9*	1037.7	*0.4*	1250.0	*0.7*
Recreation	5899.1	*3.1*	12193.1	*4.7*	6786.0	*3.8*
Transport	8182.7	*4.3*	12712.0	*4.9*	7857.4	*4.4*
Communication	2473.8	*1.3*	4150.8	*1.6*	2500.1	*1.4*
Education	7802.1	*4.1*	11414.8	*4.4*	7678.9	*4.3*
Miscellaneous goods and services	5518.5	*2.9*	8042.3	*3.1*	4821.6	*2.7*

Source: Health Workers Household Income and Expenditure Survey, 2008

4.1.2 Distribution of Health Workers Monthly Household Expenditure by item (CICOP) and by type of employer

Table 4 below clearly shows that health workers annual household expenditures in 2008 real prices were higher amongst CHAM/private employed than government employed health workers at MK204, 588 and 178,021 respectively - a difference of 15%. The distribution between food and non-food expenditures shows that government employed health workers spent more on food at 58.8% than CHAM/private employed health workers at 52.1% of the total expenditures. CHAM/private employed health workers spent more on non food items in (housing and utilities being the largest expenditure driver) at 47.9% as compared to 42.1% for government employed health workers (for more details, see Table 4 below).

Table 4: Distribution of Health Workers real annual Household Expenditure by item category (CICOP groups) and by type of employer, 2008

	Total		**Government**		**CHAM/Private**	
	Mean	**%**	**Mean**	**%**	**Mean**	**%**
All	**190295.9**	***100.0***	**178021.4**	***100.0***	**204588.0**	***100.0***
Food	**110776.2**	**57.9**	**104686.8**	**58.8**	**106622.3**	**52.1**
Food and beverages	106593.2	56.0	101113.9	56.8	105275.1	51.5
Vendors/cafes	3599.1	1.9	3572.9	2.0	1347.2	0.7
Non food	**79519.6**	**42.1**	**73334.6**	**41.2**	**97965.8**	**47.9**
Alcohol	3996.2	2.1	3264.0	**1.8**	4167.9	**2.0**
Clothing and footwear	6660.3	3.5	7558.3	**4.2**	8403.1	**4.1**
Furnishing	9895.3	5.2	10187.5	**5.7**	14188.8	**6.9**
Housing and utilities	27973.4	14.7	21173.8	**11.9**	28764.1	**14.1**
Health	1712.6	0.9	1037.7	**0.6**	1849.6	**0.9**
Recreation	5899.1	3.1	6193.2	**3.5**	8487.9	**4.1**
Transport	8182.7	4.3	10712.0	**6.0**	13102.0	**6.4**
Communication	2473.8	1.3	2150.9	**1.2**	3375.2	**1.6**
Education	7802.1	4.1	7014.9	**3.9**	8772.1	**4.3**
Miscellaneous goods and services	5518.5	2.9	4042.3	**2.3**	6855.1	**3.4**

Source: Health Workers Household Income and Expenditure Survey, 2008

4.1.3 Distribution of Health Workers monthly household expenditure by item category (COICOP groups) and by grade: Government health workers

Amongst health workers employed in the government, households of health workers in grade M which is the lowest among the three grades had the highest annual expenditures on all items estimated at MK187,148, seconded by health workers households in grade A-J which is the

highest grade estimated at MK175,995. Grade K-L, came third at MK169,236 (for more details, see Table 5 below). The situation whereby health workers household in the lowest grade M amongst the three grades had the highest monthly expenditures deserves special attention. As this is unexpected, more attention is paid in the sections below so as to give some explanations behind this situation.

Table 5: Health workers real annual household expenditure by item category (COICOP groups) by grade of health worker: Government health workers, 2008

	Total		Grade					
			A-J		K-L		M	
	Mean	%	**Mean**	**%**	**Mean**	**%**	**Mean**	**%**
All	**178021.4**	**100.0**	**175995.2**	**100.0**	**169236.8**	**100.0**	**187148.7**	**100.0**
Food	104686.8	58.8	101021.6	**57.4**	103452.2	**61.1**	106021.6	**56.7**
Food and beverages	101113.9	56.8	100008.2	56.8	101281.2	59.8	99107.1	53.0
Vendors/cafes	3572.9	2.0	1013.4	0.6	2171.0	1.3	6914.5	3.7
Non food	**73334.6**	**41.2**	74974.0	**42.6**	65784.6	**38.9**	81127.1	**43.3**
Alcohol	3264.0	**1.8**	3695.9	2.1	3526.9	2.1	4223.5	2.3
Clothing and footwear	7558.3	**4.2**	5983.8	3.4	5060.4	3.0	6687.3	3.6
Furnishing	10187.5	**5.7**	7215.8	4.1	8280.6	4.9	10030.9	5.4
Housing and utilities	21173.8	**11.9**	26575.3	15.1	22388.2	13.2	26573.1	14.2
Health	1037.7	**0.6**	1232.0	0.7	1073.4	0.6	703.9	0.4
Recreation	6193.2	**3.5**	5455.9	3.1	5827.1	3.4	8271.1	4.4
Transport	10712.0	**6.0**	8447.8	4.8	6747.1	4.0	8623.1	4.6
Communication	2150.9	**1.2**	2815.9	1.6	2146.8	1.3	2815.7	1.5
Education	7014.9	**3.9**	8095.8	4.6	6593.8	3.9	7743.2	4.1
Miscellaneous goods and services	4042.3	**2.3**	5455.9	3.1	4140.3	2.4	5455.4	2.9

Source: Health Workers Household Income and Expenditure Survey, 2008

4.1.5 Distribution of Health Workers' household monthly household expenditure by item category (COICOP groups) by cadre: Government health workers

The distribution of health workers annual household expenditure by cadre shows that households of medical doctors had the highest annual expenditures of MK192,674. Nurses came second at MK181,909 while clinical officers came third at MK181,098 (a difference of only 0.4%). Medical doctors had the highest expenditures on food items estimated at 55.9% while only 44.1% was spent on non-food items (for more details, see Table 6 below).

Table 6: Distribution of Health Workers household real annual expenditure by item category (COICOP groups) by cadre of health worker: Government health workers, 2008

	Total		Cadre											
			Clinical Officer		Doctor		Environmental		Medical Assistant		Nurses		Technician	
	Mean	%	**Mean**	***%***	**Mean**	***%***	**Mean**	***%***	**Mean**	***%***	**Mean**	***%***	**Mean**	**%**
All	**178021**	***100***	**181098**	***100***	**192674.5**	***100***	**178814.1**	***100***	**165242.3**	***100***	**181909.8**	***100***	**163814.5**	***100***
Food	**104686**	***58.8***	**104453**	***57.7***	**107728.1**	***55.9***	**105055.5**	***58.7***	**96468.1**	***58.4***	**108425.4**	***59.6***	**102017.1**	***62.3***
Food and beverages	101113	*56.8*	101322	*56.0*	103485.8	*53.7*	101495.9	*56.7*	94669.9	*57.3*	101627.2	*55.9*	100315.6	*61.2*
Vendors/cafes	3572	*2.0*	3131	*1.7*	4242.3	*2.2*	3559.6	*2.0*	1798.2	*1.1*	6798.2	*3.7*	1701.5	*1.0*
Non food	**73334**	***41.2***	**76644**	***42.3***	**84946.4**	***44.1***	**73758.6**	***41.3***	**68774.2**	***41.6***	**73484.5**	***40.4***	**61797.4**	***37.7***
Alcohol	3264	***1.8***	2897	*1.6*	4045.1	*2.1*	2861.7	*1.6*	2974.0	*1.8*	1637.0	*0.9*	3931.8	*2.4*
Clothing and footwear	7558	***4.2***	9234	*5.1*	8282.8	*4.3*	6796.6	*3.8*	6774.0	*4.1*	10186.0	*5.6*	4423.3	*2.7*
Furnishing	10187	***5.7***	9415	*5.2*	6934.4	*3.6*	10910.4	*6.1*	8426.2	*5.1*	6184.3	*3.4*	14641.5	*8.9*
Housing and utilities	21173	***11.9***	26371	*14.6*	27545.0	*14.3*	19137.9	*10.7*	22677.8	*13.7*	24009.8	*13.2*	8574.9	*5.2*
Health	1037	***0.6***	543	*0.3*	192.6	*0.1*	3219.5	*1.8*	165.2	*0.1*	181.9	*0.1*	2293.6	*1.4*
Recreation	6193	***3.5***	8210	*4.5*	8282.8	*4.3*	7044.2	*3.9*	6113.1	*3.7*	6366.2	*3.5*	1965.9	*1.2*
Transport	10712	***6.0***	9596	*5.3*	13868.8	*7.2*	8048.7	*4.5*	9748.0	*5.9*	12186.8	*6.7*	6553.0	*4.0*
Communication	2150	***1.2***	1448	*0.8*	4622.9	*2.4*	4292.6	*2.4*	1817.4	*1.1*	2182.7	*1.2*	163.8	*0.1*
Education	7014	***3.9***	5613	*3.1*	5971.3	*3.1*	6975.5	*3.9*	6113.1	*3.7*	4729.2	*2.6*	9501.9	*5.8*
Miscellaneous goods and services	4042	***2.3***	3313	*1.8*	5200.8	*2.7*	4471.5	*2.5*	3965.3	*2.4*	5820.6	*3.2*	9747.8	*6.0*

Source: Health Workers Household Income and Expenditure Survey, 2008

Distribution of Health Workers household expenditure by item category (COICOP groups) by place of residence: Government health workers

From Table 7 below, it can be seen that government health workers households in urban areas spent more (MK185,844) than their rural counterparts (MK173,479). Government rural health workers households spent more on food at 59.7% than urban government health workers households estimated at 57.3% of their total annual expenditures. Such annual household expenditures whereby rural households spend more on food than their urban counterparts are typical of developing countries and where also found in the Malawi Integrated Household Survey 2 study of 2004/05 (IHS2 2004/05).

Table 7: Distribution of health workers real annual household expenditure by item category (COICOP groups) by place of residence: Government health workers, 2008

	Place of residence					
	Total		Urban		Rural	
	Mean	%	Mean	%	Mean	%
All	**178021.4**	**100.0**	**185844.9**	**100.0**	**173479.1**	**100.0**
Food	**104686.8**	**58.8**	**106582.4**	**57.3**	**103404.7**	**59.7**
Food and beverages	101113.9	56.8	103007.7	55.4	100016.5	57.7
Vendors/cafes	3572.9	2.0	3574.7	1.9	3388.2	2.1
Non food	**73334.6**	**41.2**	**78982.5**	**42.7**	**70074.4**	**40.3**
Alcohol	3264.0	**1.8**	3699.4	2	3129.9	1.8
Clothing and footwear	7558.3	**4.2**	8323.6	4.5	7129.2	4.1
Furnishing	10187.5	**5.7**	10913.2	5.9	9563.5	5.5
Housing and utilities	21173.8	**11.9**	22381.4	12.1	20691.9	11.9
Health	1037.7	**0.6**	924.8	0.5	1564.9	0.9
Recreation	6193.2	**3.5**	6843.9	3.7	5390.3	3.1
Transport	10712.0	**6.0**	11653.1	6.3	9911.3	5.7
Communication	2150.9	**1.2**	2404.6	1.3	1912.7	1.1
Education	7014.9	**3.9**	7213.8	3.9	6781.4	3.9
Miscellaneous goods and services	4042.3	**2.3**	4624.2	2.5	3999.3	2.3

Source: Health Workers Household Income and Expenditure Survey, 2008

4.2.4 Distribution of Health Workers monthly household expenditure by item category (COICOP groups) by grade of health worker: CHAM/private health workers

From Table 8 below, it is clearly shown that for CHAM/private employed health workers households, grade K-L which is the middle grade, had the highest annual household expenditure at MK206,991, seconded by grade A-J (the highest grade) at MK204588. Grade M came third at MK202,007. The distribution of health workers' household annual expenditures between food and non-food items shows that health workers households in grade K-L spent more on food estimated at 53% as compared to 51.3% and 51.8 for grades M and A-J respectively.

Table 8: Distribution of Health Workers real annual household expenditure by item category (COICOP groups) and by grade of health worker: CHAM/private workers, 2008

	Total		Grade					
			A-J		K-L		M	
	Mean	%	**Mean**	**%**	**Mean**	**%**	**Mean**	**%**
All	**204588.0**	**100.0**	**204569.8**	**100.0**	**206991.3**	**100.0**	**202007.3**	**100.0**
Food	**106622.3**	**52.1**	**105893.7**	**51.8**	**109694.5**	**53.0**	**103656.8**	**51.3**
Food and beverages	105275.1	51.5	104512.1	51.1	108332.2	52.3	102217.3	50.6
Vendors/cafes	1347.2	0.7	1381.6	0.7	1362.3	0.7	1439.5	0.7
Non food	**97965.8**	**47.9**	**98676.1**	**48.2**	**97296.8**	**47.0**	**98350.5**	**48.7**
Alcohol	4167.9	**2.0**	4500.5	2.2	3726.3	1.8	4242.0	2.1
Clothing and footwear	8403.1	**4.1**	9205.6	4.5	7866.6	3.8	8888.0	4.4
Furnishing	14188.8	**6.9**	14729.0	7.2	13248.9	6.4	12524.0	6.2
Housing and utilities	28764.1	**14.1**	32117.5	15.7	27325.9	13.2	28539.0	14.1
Health	1849.6	**0.9**	2278.9	1.1	1656.1	0.8	1414.0	0.7
Recreation	8487.9	**4.1**	7794.1	3.8	8694.6	4.2	8287.2	4.1
Transport	13102.0	**6.4**	10658.1	5.2	13041.9	6.3	14243.6	7.1
Communication	3375.2	**1.6**	2864.0	1.4	3933.3	1.9	3299.3	1.6
Education	8772.1	**4.3**	7366.6	3.6	9315.7	4.5	9841.0	4.9
Miscellaneous goods and services	6855.1	**3.4**	7162.0	3.5	8487.6	4.1	7070.0	3.5

Source: Health Workers Household Income and Expenditure Survey, 2008

4.1.6 Distribution of Health Workers household monthly household expenditure by item category (COICOP groups) by Cadre of health worker: CHAM/private health workers

Analysis of health workers annual household expenditures on all items by cadre of health workers employed in CHAM/private facilities shows that medical doctors spent more on all items estimated at MK208,891, seconded by environmental officers at MK206,262. Clinical officers came third at MK206,262 (for more details, see Table 9 below).

Table 9: Distribution of Health Workers household Real annual expenditure by item category (COICOP groups) by Cadre: CHAM/private health workers, 2008

	Total		Cadre											
			Clinical Officer		Doctor		Environmental		Medical Assistant		Nurses		Technician	
	Mean	%	Mean	%	Mean	%	Mean	%	Mean	%	Mean	%	Mean	%
All	**204588.0**	**100**	**205064.6**	**100**	**208910.9**	**100**	**206262.2**	**100**	**202233.0**	**100**	**203447.7**	**100**	**202366.6**	**100**
Food	**106622.3**	**52.1**	**107319.8**	**52.4**	**109897.7**	**52.8**	**107865.1**	**52.3**	**102972.2**	**50.9**	**106993.9**	**52.6**	**103643.4**	**51.2**
Food and beverages	105275.1	51.5	105982.6	51.7	108485.8	52.1	106495.9	51.6	101669.9	50.3	105627.2	51.9	102315.6	50.5
Vendors/cafes	1347.2	0.7	1337.2	0.7	1411.9	0.7	1369.2	0.7	1302.3	0.6	1366.7	0.7	1327.8	0.7
Non food	**97965.8**	**47.9**	**97744.8**	**47.6**	**99013.2**	**47.2**	**98397.1**	**47.7**	**99260.8**	**49.1**	**96453.8**	**47.4**	**98723.2**	**48.8**
Alcohol	4167.9	**2.0**	4718.0	2.3	5454.1	2.6	4125.7	2.0	4245.4	2.1	1220.9	0.6	4250.6	2.1
Clothing and footwear	8403.1	**4.1**	9025.8	4.4	10069.1	4.8	9076.5	4.4	9501.5	4.7	12209.3	6.0	4048.2	2.0
Furnishing	14188.8	**6.9**	12718.1	6.2	9649.6	4.6	9489.0	4.6	14959.9	7.4	6511.7	3.2	19633.8	9.7
Housing and utilities	28764.1	**14.1**	31692.7	15.5	26431.5	12.6	30529.9	14.8	31334.9	15.5	28895.5	14.2	26111.0	12.9
Health	1849.6	**0.9**	1230.8	0.6	629.3	0.3	2888.0	1.4	606.5	0.3	203.5	0.1	4857.9	2.4
Recreation	8487.9	**4.1**	8615.5	4.2	10698.5	5.1	9489.0	4.6	8288.6	4.1	4069.8	2.0	8852.9	4.4
Transport	13102.0	**6.4**	12102.7	5.9	13006.0	6.2	12583.3	6.1	11927.5	5.9	13837.3	6.8	12144.6	6.0
Communication	3375.2	**1.6**	2461.6	1.2	5034.6	2.4	3506.8	1.7	2628.1	1.3	7529.1	3.7	2226.5	1.1
Education	8772.1	**4.3**	7795.0	3.8	9859.4	4.7	10520.4	5.1	8490.7	4.2	9360.5	4.6	10525.3	5.2
Miscellaneous goods and services	6855.1	**3.4**	7384.7	3.6	8181.2	3.9	6188.5	3.0	7277.8	3.6	12616.3	6.2	6072.3	3.0

Source: Health Workers Household Income and Expenditure Survey, 2008

Distribution of Health Workers household monthly household expenditure by item category (COICOP groups) and by place of residence: CHAM/private health workers

Similarly to government employed households, CHAM/private health workers households living in urban areas spent slightly more (MK206,154 than their rural counterparts households (MK203,005) while in relative terms spent almost the same (about 47%) on food (for more details, see Table 10 below). This is unusual as rural households in developing countries usually spend more of their incomes on food than their urban counterparts.

Table 10: Distribution of health workers real annual household expenditure by item category (COICOP groups) by place of residence: CHAM/private health workers, 2008

	Place of residence					
	Total		Urban		Rural	
	Mean	%	Mean	%	Mean	%
All	**204588.0**	**100.0**	**206154.3**	**100.0**	**203005.1**	**100.0**
Food	**106622.3**	**52.1**	**108074.3**	**52.4**	**105636.8**	**52.7**
Food and beverages	105275.1	51.5	106634.5	51.7	104333.2	52.0
Vendors/cafes	1347.2	0.7	1439.8	0.7	1303.6	0.6
Non food	**97965.8**	**47.9**	**98079.9**	**47.6**	**97368.3**	**47.3**
Alcohol	4167.9	**2.0**	4121.9	2.0	4041.4	2.0
Clothing and footwear	8403.1	**4.1**	8765.6	4.2	7678.8	3.8
Furnishing	14188.8	**6.9**	13606.1	6.6	13943.1	6.9
Housing and utilities	28764.1	**14.1**	30471.1	14.6	27280.0	13.9
Health	1849.6	**0.9**	2087.0	1	1818.6	0.9
Recreation	8487.9	**4.1**	8139.5	3.9	8689.1	4.4
Transport	13102.0	**6.4**	13565.9	6.5	12124.4	6.1
Communication	3375.2	**1.6**	2921.8	1.4	3233.1	1.6
Education	8772.1	**4.3**	7513.4	3.6	9497.4	4.7
Miscellaneous goods and services	6855.1	**3.4**	6887.3	3.3	6062.2	3.0

Source: Health Workers Household Income and Expenditure Survey, 2008

4.2 Health Workers Household Income

In this study, health workers household income is the aggregate of income both in cash and in-kind that accrued to health workers households during 2008. Here the main issue of interest is the contribution of different sources of income to total health workers households income in particular the contribution of non-salary income sources arising due to differences in grade of health workers, place of residents-urban/rural and regions.

4.2.1 Distribution of Health Workers household monthly average Incomes: Government and CHAM/Private employees

As seen in Table 11 below, the average monthly health workers' household income for government paid health workers in 2008 was MK88,560 while that of health workers employed by CHAM/private clinics was 27.5% more at MK112,880. Salaries followed by allowances were the largest source of incomes for all health workers household accounting for 44.7% and 33.5% of household incomes for government paid health workers respectively. In CHAM and private for profit health sector this accounted for 39.3% and 29.7% of salaries and allowances respectively. Agriculture was the least source of income for government paid health workers

(0.44%) but, paradoxically, it accounted for a modest source of income for CHAM/privately employed health workers.

Table 11: Health Workers Average Household Monthly Incomes by Source and Type of Employer, 2008

	Employer			
	Government		CHAM/ private	
Source*	**MK**	**%**	**MK**	**%**
Salaries	39,610.33	*44.73*	44,421.67	*39.35*
Enterprises	14,967.63	*16.90*	25,867.22	*22.92*
Agriculture	391.08	*0.44*	7,229.17	*6.40*
Allowances	29,678.81	*33.51*	33,610.47	*29.78*
Other	3,912.71	*4.42*	1,751.81	*1.55*
Total	**88,560.56**	*100.00*	**112,880.33**	***100.00***

Notes: * to make the monthly incomes annual averages, multiply by 12

Source: Health Workers Household Income and Expenditure Survey, 2008

4.2.2 Distribution of Health Workers households average monthly incomes between Urban and Rural: Government and CHAM/Private employees

Urban based health workers had on average high household monthly incomes in 2008 amounting to MK126,496 while their rural counters had MK90,051 i.e. urban health workers households income were 40% more than their rural counterparts (Table 12). Although rural health workers received more in allowances MK 32,397 (35.9%) than urban health workers MK26,156 (20.6%), urban health workers earned more from entrepreneurial activities MK40,219 (31.7%) compared to rural health workers MK13,338 (14.8%). The difference from this source of income largely explains the difference between these two groups.

Table 12: Health Workers Average Household Incomes by Source and Area of Residence, 2008

			Place of residence			
	Total		Urban		Rural	
Source*	**MK**	**%**	**MK**	**%**	**MK**	**%**
Salaries	41,654.01	*42.11*	44,899.35	*35.49*	40,672.39	*45.17*
Enterprises	19,581.28	*19.80*	40,219.39	*31.79*	13,338.89	*14.81*
Agriculture	3,306.87	*3.34*	13,278.06	*10.50*	290.90	*0.32*
Allowances	31,262.67	*31.61*	26,156.94	*20.68*	32,397.28	*35.98*
Other	3,102.35	*3.14*	1,942.55	*1.54*	3,351.93	*3.72*
Total	**98,907.19**	***100.00***	**126,496.29**	***100.00***	**90,051.39**	***100.00***

Notes: * to make the monthly incomes annual averages, multiply by 12
Source: Health Workers Household Income and Expenditure Survey, 2008

4.2.3 Distribution of Government employed health workers monthly average households incomes by source and place of residence- urban/ rural areas

Among government employed health workers, the difference in salaries between rural and urban health workers was minimal[1]. Government employed rural health workers earned marginally more (MK39,638) than urban health workers (MK39,027). The contribution of salaries to overall incomes for the two groups was essentially the same. The small edge rural health workers had on urban health workers was largely attributable to the allowances and other sources of income in kind etc. that rural health workers got. For more details see Table 13 below.

Table 13: Government employed health workers average monthly household incomes by source and area of residence, 2008

	Area of residence					
	Total		**Urban**		**Rural**	
Source	**MK**	**%**	**MK**	**%**	**MK**	**%**
Salaries	39,610.33	*44.73*	39,027.36	*45.58*	39,638.21	*44.74*
Enterprises	14,967.63	*16.90*	18,181.82	*21.23*	14,813.91	*16.72*
Agriculture	391.08	*0.44*	0.00	*0.00*	409.78	*0.46*
Allowances	29,678.81	*33.51*	26,757.14	*31.25*	29,776.67	*33.61*
Other	3,912.71	*4.42*	1,666.67	*1.95*	3,950.78	*4.46*
Total	**88,560.56**	**100.00**	**85,632.99**	**100.00**	**88,589.35**	**100.00**

Source: Health Workers Household Income and Expenditure Survey, 2008

4.2.4 Distribution of Government employed health workers monthly average households incomes by source and cadre of health workers

An analysis of government employed health workers' household average monthly incomes by source of incomes and cadre of health workers reveals that about 76% of doctors' incomes were due to salaries and only 12% was contributed by allowances. As regards nurses and medical assistants, salaries contributed 46% each to their total average monthly household income while clinical officers' share of salaries to their total average monthly incomes was around 41%. Other incomes not specified by kind made huge contributions to government health workers households

[1] The difference in salaries between rural and urban government health workers could be a result of difference in the composition of health workers whereby the rural areas tend to have more health workers who are in higher grades than urban areas and it could also be a result of non-sampling random errors such as respondents not giving the right information on salaries. Otherwise the salaries are the same regardless of location of health workers by grade.

monthly average incomes ranging from 10% for medical doctors to 40% for clinical officers (for more details, see Table 14 below).

Table 14: Distribution of Government employed Health Workers Household Monthly Average Incomes by source and Cadre of Health Worker – Malawi 2008

	Total	Salaries		Enterprises		Agriculture		Allowances		Other*	
	Mean	Mean	%	Mean	%	Mean	%	Mean	%	Mean	%
Cadre											
Clinical Officer	76447.4	31177.6	0.41	10147.1	0.13	83.3	0.00	7437.2	0.10	27602.3	0.4
Doctor	74719.6	56536.3	0.76	0.0	0.00	0.0	0.00	8680.0	0.12	9503.3	0.1
Environmental	97987.1	44397.5	0.45	25736.4	0.26	340.9	0.00	5464.7	0.06	22047.7	0.2
Medical Assistant	69670.1	31820.9	0.46	12173.9	0.17	0.0	0.00	9513.1	0.14	16162.2	0.2
Nurses	93465.5	43125.3	0.46	16782.6	0.18	596.0	0.01	5891.4	0.06	27070.2	0.3
Technician	69044.4	31263.4	0.45	4761.9	0.07	79.4	0.00	12163.4	0.18	20776.3	0.3

Notes: * incomes not specified by kind including loans
Source: Health Workers Household Income and Expenditure Survey, 2008

4.2.5 Distribution of Government employed health workers households monthly average incomes by source and Region

The distribution of government employed health monthly average households incomes by region shows that salaries contributed 41%, 46% and 58% in the North, Central and South respectively. Sources not specified by kind made a huge contribution to health workers monthly households' incomes at 30% in the Centre and South and 20% in the North. Enterprise was second major source of income for health workers in the North (for more details see Table 15 below).

Table 15: Distribution of Government employed health workers monthly average household incomes by source and Region

	Total	Salaries		Enterprises		Agriculture		Allowances		Other	
	Mean	Mean	%	Mean	%	Mean	%	Mean	%	Mean	%
Region											
North	105315.9	43035.0	0.41	30522.1	0.29	136.4	0.00	6905.3	0.07	24717.2	0.2
Central	77257.8	35546.3	0.46	8186.3	0.11	639.3	0.01	6478.2	0.08	26407.7	0.3
South	81805.5	47752.2	0.58	5593.9	0.07	0.0	0.00	5477.2	0.07	22982.1	0.3

Source: Health Workers Household Income and Expenditure Survey, 2008

4.2.6 Distribution of CHAM and Private for profit Employed Health Workers Household average monthly Incomes by source of income and place of residence.

The household incomes of CHAM and other privately employed health workers, located in urban areas in 2008 were more (MK132,372) than for those residing in rural areas (93,139) i.e. urban

health workers incomes were 50% more than that of their rural counterparts (Table 16). Again salaries were the largest source of incomes even for privately employed households accounting for 34.6% of all income for urban health workers and 46.4% for rural health workers. Unlike in the public health sector where salaries were uniform between rural and urban areas according to grade, as noted above in CHAM and private for profit health sector, rural health workers earned more than the urban health workers - a difference of 11.8%. Enterprises were another import source of income for urban households (32.8%) while allowances substantially contributed to incomes of rural health workers (41.4%). Again, here it is clear that in the CHAM and private for profit health sector rural health workers earned more in terms of allowances than urban health workers. Maybe this could be one of the reasons behind the high retention rate of health workers in rural areas of CHAM and private for profit health sector. Further investigations need to be carried out to examine the impact of allowances of health worker retention in CHAM and private for profit health sector.

Table 16 : Average monthly household incomes for CHAM/Private employed health workers by source and area of residence, 2008.

			Area of residence			
	Total		Urban		Rural	
Source	***MK***	***%***	***MK***	***%***	***MK***	***%***
Salaries	44,421.67	*39.35*	45,753.90	*34.56*	43,202.82	*46.39*
Enterprises	25,867.22	*22.92*	43,505.81	*32.87*	9,729.79	*10.45*
Agriculture	7,229.17	*6.40*	15,130.81	*11.43*	0.00	*0.00*
Allowances	33,610.47	*29.78*	26,007.90	*19.65*	38,621.25	*41.47*
Other	1,751.81	*1.55*	1,973.78	*1.49*	1,585.34	*1.70*
	112,880.33	**100.00**	**132,372.20**	**100.00**	**93,139.19**	**100.00**

Source: Health Workers Household Income and Expenditure Survey, 2008

4.2.7 Distribution of CHAM and Private for Profit Health Workers households average monthly incomes by source and cadre

In the CHAM/private health sector, this study shows that salaries contributed about 70% of the total doctors and clinical officers monthly incomes and it contributed about 57%, 38% and 47% of environmental health officers, medical assistants and nurses total monthly incomes respectively. Allowances and incomes not specified by kind are the major sources of incomes for doctors, clinical officers, medical assistants and nurses (for more details see Table 17 below).

Table 17: Distribution of CHAM and Private for Profit health workers households' average monthly incomes by source and cadre, 2008

	Total	Salaries		Enterprises		Agriculture		Allowances		Other	
Cadre	Mean	Mean	%	Mean	%	Mean	%	Mean	%	Mean	%
Clinical Officer	66124.2	46135.9	0.70	170.6	0.00	0.0	0.00	10828.6	0.16	8989.00	0.14
Doctor	64938.0	45738.0	0.70	0.0	0.00	0.0	0.00	9600.0	0.15	9600.00	0.15
Environmental	59739.5	34110.3	0.57	11687.5	0.20	0.0	0.00	3429.7	0.06	10512.02	0.18
Medical Assistant	100441.0	37884.0	0.38	36085.3	0.36	0.0	0.00	5068.8	0.05	21403.00	0.21
Nurses	103700.7	49166.5	0.47	17255.4	0.17	507.4	0.00	11131.0	0.11	25640.31	0.25
Technician	930511.1	33636.6	0.04	83684.2	0.09	65789.5	0.07	12561.0	0.01	734839.81	0.79

Source: Health Workers Household Income and Expenditure Survey, 2008

4.2.8 Distribution of CHAM and Private for Profit Health Workers households average monthly incomes by source and Region

The regional distribution of health workers household average income by source shows that the Northern Region had the highest share of salary contributions to health workers household monthly average incomes contributing 63%, while the south came second at 47% and the centre came third at 19%. The Centres main source of incomes is mainly from unspecified sources estimated at 56% (for more details see Table 18).

Table 18: Distribution of CHAM and Private for Profit Health Workers household average monthly incomes by source and Region

	Total	Salaries		Enterprises		Agriculture		Allowances		Other	
	Mean	Mean	%	Mean	%	Mean	%	Mean	%	Mean	%
Region											
Northern	108326.0	67990.5	0.63	1927.3	0.02	0.0	0.00	6569.9	0.06	31838.34	0.29
Central	216846.6	41827.5	0.19	34027.8	0.16	9783.8	0.05	9917.6	0.05	121289.84	0.56
Southern	80466.9	37482.3	0.47	3520.0	0.04	0.0	0.00	9173.5	0.11	30291.14	0.38

Source: Health Workers Household Income and Expenditure Survey, 2008

4.2.9 Sources of Health Workers Allowances

As noted above, it is clear that allowances in the Malawian health sector play a significant role in supplementing health workers salaries whether in the public or CHAM/private health sectors. In 2008, five top sources of allowances for health workers were recorded and these included: incentive scheme allowance, teaching allowance, training per diems, relief schemes and rural allowance with beneficiaries getting on average MK 17,391, MK15,252, MK 13,669, MK12,139 and MK10,131 respectively per month (Table 19) . Rural health workers in general quantitatively benefited from multiple sources of allowances compared to their urban counterparts. Overall, high ranking health workers benefited more from incentive scheme allowance than lower ranking health workers.

Table 19: Average monthly income of health workers from allowances by grade and area of residence, 2008.

		Grade of health worker			Area of residence	
Type of allowance	**All**	**A-J**	**K-L**	**M**	**Urban**	**Rural**
All incentives	**154,457**	**158,789**	**131,169**	**102,113**	**122,567**	**150,094**
Incentive scheme allowance	17,392	25,675	825	.	.	17,392
Teaching per diems	15,252	14,048	21,815	8,300	.	15,252
Training per diems	13,669	12,585	15,521	22,000	25,000	13,515
Relief scheme allowance	12,139	12,560	10,914	15,750	.	12,139
Rural allowance	10,132	9,758	10,771	.	.	10,132
Transport allowance	9,433	14,213	860	700	.	9,433
Other allowances	8,786	7,199	11,167	.	.	8,786
Uniform allowance	7,076	8,020	3,300	.	3,000	7,367
Food allowance	6,808	4,450	11,525	.	45,000	3,336
CHAM allowance	5,508	1,250	7,333	8,546	.	5,508
Meeting allowance	5,387	5,526	1,656	15,000	.	5,387
Locum scheme allowance	5,260	5,951	3,752	5,463	9,400	5,197
Water allowance	4,843	5,640	3,285	2,000	6,000	4,787
Phone allowance	4,791	5,127	4,240	3,500	21,000	4,284
Project top ups	4,401	2,412	6,887	.	.	4,401
Housing allowance	3,977	4,254	2,444	5,000	11,000	3,509
Part time wages	3,913	4,361	1,024	12,604	1,667	3,951
Field allowance	3,038	3,100	2,833	.	.	3,038
Electricity allowance	2,988	3,129	3,250	500	.	2,988
Tax assistance allowance	2,500	2,500	.	.	.	2,500
Responsibility allowance	2,010	1,614	3,333	2,000	.	2,010
NGO allowance	1,984	1,880	2,500	.	.	1,984
Clothes allowance	1,710	2,050	350	.	.	1,710
Lunch allowance	1,460	1,486	1,583	750	500	1,489

Source: Health Workers Household Income and Expenditure Survey, 2008

As regards the contribution of various allowances by employer type, Table 20 below shows that on average CHAM/private employed housing allowances, locum scheme, incentive scheme, transport allowance, phone allowance, project top-ups, field allowance and supervisory allowances were higher than those of government employed health workers while government tops the list in all other allowances. A further investigation into the impact of such allowance differentials on the retention of health workers between government and CHAM/private employed could go some way in minimizing the internal movement of health workers that arise

due to different allowance benefits being offered by government and CHAM/private health sectors. One health subsector, which has poor retention arising from allowances, could learn from the other on how to improve on its allowance scheme and hence retain health workers.

Table 20: ***Sources of allowance between Government and CHAM/private employed health workers households, 2008***

	Type of employer		
	Total	**Government**	**CHAM/Private**
Housing allowance	10508.4	3977.1	19216.8
Training per diems	14669.5	13669.4	17112.3
Teaching per diems	14098.1	15252.0	11934.4
Locum scheme allowance	6690.6	5260.3	9809.2
Relief scheme allowance	12044.4	12139.4	11767.8
Incentive scheme allowance	20383.4	17391.7	22015.3
Rural allowance	8959.9	10131.6	6936.0
Transport allowance	12521.0	9432.9	17925.0
Phone allowance	4875.9	4790.9	5009.5
Uniform allowance	6124.5	7076.0	3270.0
Project top ups	27963.0	4400.6	49169.2
Field allowance	4625.0	3038.5	6211.5
CHAM allowance	4978.0		1800.0
NGO allowance	5000.1		8016.7
Tax assistance allowance	2500.0	2500.0	.
Responsibility allowance	3433.1	2009.6	5426.0
Lunch allowance	1143.2	1459.9	729.0
Meeting allowance	5224.2	5386.8	4912.5
Other allowances	11579.8	8785.9	15072.2
Estimated additional cash in addition to allowances in kind	3474.0	2435.0	4166.7
Food allowance	5110.0	6808.3	3654.4
Clothes allowance	2506.3	1710.0	3833.3
Water allowance	3995.5	4843.5	2076.3
Electricity allowance	6278.3	2988.2	15600.0
Other payments received	14000.0	20000.0	8000.0
Part time wages	3116.6	3912.7	1751.8

Source: Health Workers Household Income and Expenditure Survey, 2008

4.3 Adequacy of Health Workers Incomes

Understanding the relationship between salaries of health workers and the cost of living could go a long way in mitigating some of the problems associated with the adequacy of health workers salaries such as moonlighting, low morale and maldistribution of health workers, such as the concentration of health workers in areas perceived to offer additional incomes. Good indicators of measuring the cost of living between rural and urban areas are often lacking in developing

countries and this was also the case in this study as only urban cost of living indices were available for 2008. However, an attempt has been made to assess the adequacy of incomes since this study collected data on incomes and as well as expenditures of health workers households as well as a comparison of urban health workers incomes with the cost of living in urban areas.

4.3.1 Comparison of health workers annual average income with their annual average expenditures

As indicated earlier the average annual health workers expenditure was MK190,295 while average government health workers household annual incomes were MK 1,062,727[2] and that of CHAM/private employed health workers households were MK 1,354,564. This means that government health workers household average annual incomes were 5.6 times higher than their average annual expenditures while that of CHAM/private employed health workers was 7.1 more than average annual average expenditure. In the urban areas government health workers household average annual incomes were 5.4 times more than their annual average expenditures while in rural areas, government health workers household average annual incomes were 5.6 times more than the annual average expenditures of health workers households. In comparison CHAM/private health workers annual average incomes were 8.3 and 5.9 more than their average annual household expenditures in urban and rural areas respectively.

All in all the study findings reveal that there was a huge surplus between health workers annual average health workers household incomes and average annual health workers households expenditures (for more details see Table 3 and Table 16 above and Table 21below). Comparing health workers household situation with that of general population as revealed by the IHS2 of 2004/05 presents a different picture. In the general population, annual average household incomes in 2004/05 were 0.5 times lower than their average annual household expenditures. This is expected as health workers earn regular incomes while the integrated household survey, which covered the whole population and had large groups of the population that have no regular income - the majority of the Malawi population – and is in the informal sector, had irregular income.

[2] see Table 3, monthly average income of MK88,560 multiplied by 12 to make annual health workers average income

Table 21: Comparison of average annual health workers household incomes and average annual health workers household expenditures, 2008

	Government employed health workers average annual household incomes, 2008			CHAM/Private employed health workers average annual household income			Average annual health workers expenditures
	All	Urban	Rural	All	Urban	Rural	
Average Annual Income	**1,062,726.8**	**1,027,595.9**	**1,063,072.20**	**1,354,564.0**	**1,588,466.4**	**1,117,670.3**	**190295.8**
Ratio of average annual expenditures of health workers households to average annual health workers households income	**5.6**	**5.4**	**5.6**	**7.1**	**8.3**	**5.9**	**1**

4.3.1 Comparison of Government Health Workers annual average incomes with general households annual average incomes

A comparison of health worker households' average annual incomes with that of general households shows that in 2008 government health workers annual average incomes were 5.5 times higher than the general population (Table 22). In urban areas, government health workers incomes were 2.2 times higher while in rural areas they were 7 times higher than their counterparts in the general population households.

Table 22: Comparison of Government health worker household annual incomes to general household annual incomes, 2008

Source of Income	Government health workers annual household incomes			General households annual average incomes (IHS2)*		
	Place of residence			Place of residence		
	Total	Urban	Rural	Total	Urban	Rural
Salaries	475,324.0	468,328.4	475,658.6	48,651.0	194,470.3	27,179.1
Enterprises	179,611.6	218,181.8	177,767.0	79,008.0	174,867.0	63,494.3
Agriculture	4,692.9	-	4,917.4	52,232.3	46,563.1	53,002.2
Allowances	356,145.7	321,085.7	357,320.0	-	-	-
Other	46,952.5	20,000.0	47,409.3	12,867.7	61,719.6	7,402.5
Total	**1,062,726.8**	**1,027,595.9**	**1,063,072.2**	**192,759.0**	**477,619.9**	**151,078.2**
Ratio of general household to government annual average workers incomes	5.5	2.2	7.0	1	1	1

Notes * the general households annual average incomes have been inflated from the 2004/05 IHS2 results to 2008
Source: Health Workers Household Income and Expenditure Survey, 2008 and IHS2, 2004/05

4.3.2 Comparison of CHAM/Private facilities Health Workers annual average incomes with general households annual average incomes

In CHAM/Private health facilities, the difference in annual household incomes between health workers and that of the general population was 7 times (Table 23). Similar to the government situation, CHAM/private health workers in rural areas had a huge difference to that of the general households - 7.4 times more while urban CHAM/private health workers had only a difference of 3.3 times more.

Table 23: Comparison of CHAM/Private health workers household annual incomes to general household annual incomes, 2008

Source of Income	CHAM/private Health Workers annual average Households Incomes, 2008			General households annual average incomes (IHS2), 2008*		
		Place of residence			Place of residence	
	Total	Urban	Rural	Total	Urban	Rural
Salaries	533,060.0	549,046.8	518,433.8	48,651.00	194,470.26	27,179.08
Enterprises	310,406.7	522,069.8	116,757.4	79,007.99	174,867.02	63,494.30
Agriculture	86,750.0	181,569.8	-	52,232.31	46,563.10	53,002.24
Allowances	403,325.6	312,094.8	463,455.0	-	-	-
Other	21,021.7	23,685.3	19,024.1	12,867.65	61,719.57	7,402.54
Total	**1,354,564.0**	**1,588,466.4**	**1,117,670.3**	**192,758.96**	**477,619.94**	**151,078.15**
Ratio of general households annual incomes to CHAM/private health workers households annual income	7.03	3.33	7.40	1	1	1

Notes * the general households annual average incomes have been inflated from the 2004/05 IHS2 results to 2008
Source: Health Workers Household Income and Expenditure Survey, 2008 and adapted from IHS2, 2004/05

4.3.3 Comparison of Health Workers households and general households real annual household expenditure by item category (COICOP groups), 2008

Table 24 below shows that general households' annual average expenditure in 2008 real prices were lower (MK166119) than that of health workers households annual average expenditure (MK190,295). This means that health workers households had on average a better welfare than the general population as reflected in the average annual consumption expenditures patterns However, it is likely that incomes in general have not kept up with living costs, which have seen an increase in the consumer price index of 66.6 between 2005- 2008.

Table 24 Comparison of Health Workers and general households' real annual household expenditure by item category (COICOP groups), 2008

	General households annual expenditures (IHS2) of 2004/05 inflated by the difference in CPI between 2005- 2008						Health workers annual average expenditures in 2008					
	Total		Urban		Rural		Total		Urban		Rural	
All*	**166119.7**	**100**	**82152.2**	**100**	**83967.0**	**100**	**190295.9**	**100**	**259551.3**	**100**	**178701.8**	**100**
Food	**92318.6**	**55.6**	**1693865.9**	**45.1**	**50682.9**	**58.7**	**110776.2**	**57.9**	**138916.7**	**53.5**	**102091.7**	**57.1**
Food and beverages	90827.8	54.7	1622171.7	43.9	50954.4	58.1	106593.2	56	132878	51.2	101046.5	56.5
Vendors/cafes	1490.8	0.9	727.8	1.2	1472.9	0.6	3599.1	1.9	6038.7	2.3	1045.2	0.6
Non food	**73800.7**	**44.4**	**1648337.4**	**54.9**	**33284.1**	**41.3**	**79519.7**	**42.1**	**120634.6**	**46.5**	**76610.1**	**42.9**
Alcohol	3767.3	2.3	2452.2	1.6	3707.0	2.5	3996.2	2.1	7264	2.8	4107.3	2.3
Clothing and footwear	7184.4	4.3	11983.6	4.1	6889.8	4.4	6660.4	3.5	9858.3	3.8	5893.1	3.3
Furnishing	6344.4	3.8	10324.3	4	6090.6	3.6	9895.4	5.2	14787.5	5.7	9643.2	5.4
Housing and utilities	34200.1	20.6	289404.1	20.8	27086.5	20.7	27973.5	14.7	39173.8	15.1	26072.4	14.6
Health	2237.0	1.3	1001.1	1.1	2212.4	1.4	1712.7	0.9	1037.7	0.4	1250	0.7
Recreation	1513.9	0.9	1170.2	1.9	1485.2	0.6	5899.2	3.1	12193.2	4.7	6786	3.8
Transport	9556.4	5.8	47431.4	12.2	8390.5	3.8	8182.7	4.3	12712	4.9	7857.4	4.4
Communication	1397.3	0.8	1023.2	1.8	1372.1	0.5	2473.8	1.3	4150.9	1.6	2500.1	1.4
Education	2869.7	1.7	4202.9	3.6	2766.4	1.2	7802.1	4.1	11414.9	4.4	7678.9	4.3
Miscellaneous goods and services	4730.3	2.8	7312.8	3.8	4550.5	2.6	5518.6	2.9	8042.3	3.1	4821.6	2.7

Notes: General household annual expenditures in the IHS2 of 2004/05 have been inflated from 2005 to 2008
Source: Health Workers Household Income and Expenditure Survey, 2008 and adapted from IHS2, 2004/05

4.3.4 Comparison Government health workers household annual average salaries in Urban areas and the cost of living in Urban areas

Table 25 below shows the cost of living for an average household of six members for Lilongwe city which was representative of urban areas in this study compared to the annual average salaries for urban health workers. Government health workers salaries were below the cost of living by 0.94 times while those of CHAM/private employed health workers wee 1.1 times more than the cost of living in urban areas.

Table 25: Comparison health workers household annual average salaries in urban areas* and the cost of living in urban areas, 2008

Type of Income source	Government health workers		CHAM/Private health workers	
	Average Annual Salaries 2008	Cost of living 2008	Average Annual Salaries 2008	Cost of Living 2008
Salaries	MK 468,328	MK 495,266	MK 549,046	MK 495,266
Ratio of cost of living to incomes	0.96	1	1.10	1

Note: * Only cost of living indices for urban areas were available.

Source: Health Workers Household Income and Expenditure Survey, 2008 and Center for Social Concern (CSC), Lilongwe, Malawi, 2008 (25)

4.3.5 International Comparison of the study findings

As indicated earlier on, similar studies on health workers pay and incomes have been done in a few developing countries in particular in sub-Saharan Africa. As such a comparative analysis of this study finding and those cited in this paper was made. One method used in making these comparisons has been benchmarking health workers salaries against the average gross national income (GNI) per capita. From Table 26 below, it can be clearly seen that (using the country's official exchange rates) doctors' income per annum in Ghana was 2.3 times more than in Malawi while in Zambia it was 2.7 times more than in Malawi. Nurses' annual incomes per annum in Ghana and Zambia were less than that of Malawian nurses at 0.6 and 0.5 respectively. However, this picture changes once purchasing power parities[3] which take into account the cost of living were used (for more details, see Table 26 below).

[3] Purchasing power parity (PPP) is a theory that states that exchange rates between currencies are in equilibrium when their purchasing power is the same in each of the two countries. This means that the exchange rate between two countries should equal the ratio of the two countries' price level of a fixed basket of goods and services. When a country's domestic price level is increasing (i.e. a country experiences inflation), that country's exchange rate must depreciated in order to return to PPP. The bases of the PPP is the US=100.

Table 26: International comparison of health workers incomes

	Malawi		Ghana		Zambia	
	2008		2005		2005	
Cadre	US$ (official exchange rate)	US$ (PPP)	US$ (official exchange rate)	US$ (PPP)	US$ (official exchange rate)	US$ (PPP)
Doctor	6314.3	22699.6	14616	35648	17208	31663
Nurses	7898.5	28394.6	4896	11941	4128	7596
Ratio of Malawi's Doctor's incomes to other countries	1	1	2.3	1.6	2.7	1.4
Ratio of Malawi's Nurses incomes to other countries	1	1	0.6	0.4	0.5	0.3
Ratio of salary to GNI per capita						
Cadre						
Doctor	25.8		32.5		40	
Nurse	31.6		10.9		9.6	
GNI per capita (official exchange rate)	250		450		430	
GNI per capita (PPP)	703		1093		791	

Source: Health Workers Household Income and Expenditure Survey and, Reference 12, 9 and 10

When using gross national product of the three countries as a benchmark, Zambia, Ghana and Malawi doctors earned 40, 32.5 and 25.8 times more than the gross national product per capita. In contrast nurses in Malawi had the highest earnings in comparison to the gross national product per capita in the three countries (for more details, see Table 26 above). This means that the average incomes of health workers in all these three countries are well above the average incomes of their fellow citizens.

Chapter 5: Policy Implications of the findings

In this chapter we present the policy implications of our study findings with regard to the level of remuneration of health, the sources of health incomes in terms of formal and informal sources, the size of the allowances and their contributions to total health workers households incomes and the differences between government and CHAM/private health sectors and between urban/rural and the regions.

Level of remuneration

In comparison with other African countries Malawi salaries are low for doctors but high for nurses. Health worker incomes are five to seven times higher than general household incomes and the differences are greater in the rural areas. Health worker expenditure mirrors their income in comparison to general households but to a lesser extent. The level of remuneration, when augmented by enterprise and other incomes sources seems sufficient as compared to their expenditures. The health workers annual average incomes are 5.5 times more than their annual average expenditures. It appears the top-up of health worker incomes and allowances have played a major role in contributing to total health workers average annual incomes.

However, when health workers salaries alone are compared with the general cost of living in urban areas, it is clear that in the government health sector, health workers salaries are lower than the cost of living index while in CHAM/private health sector, they are slightly higher than the cost of living index. This implies that health workers salaries need to be increased if it is intended that they are required to cater for basic households needs and leave some for savings and investments. It could also be said that the salary top-ups of 52% implemented in 2005 have helped to minimize the gap between health workers salaries and the cost of living in 2008. As such these salary top-ups need to be continued. It could be argued further that had the salary top-ups kept pace with price increases, it could have surpassed or at least been at par with the cost of living index. Unfortunately, salary to-ups did not keep pace with rising prices in the economy and this could be one of the explanations behind the role of entrepreneurship as a source of health workers household incomes – "a survival mechanism". In combination health workers salary top-

ups and other sources of incomes have helped health staff cope with the price rises better than staff in other public sectors of the economy[4].

Formal and informal remuneration

A quarter of income comes from informal sources, with informal remuneration higher in the CHAM/private sector (31%) than MOH (21%). While it might have seemed obvious that staff in rural areas would have more opportunity to create agricultural income than urban staff, the reverse is in fact the case with 0.3% of total income coming from that source in rural areas as compared to 3.3% in urban areas. It may be that staff away from their home village do not have access to farmland. As expected there appears to be more opportunity for enterprise income in urban areas. Preliminary analysis suggests higher level cadres of staff with higher basic incomes are less inclined to seek informal income.

The key issue here is whether staff are able to give 100% of their working life to the health sector when a quarter of their income comes from informal sources. It looks as though a further salary top up will be needed to make this extra income unnecessary. The current salary accounts for 42% of total income. The top up would need to bring salaries up to 67% of total income, a 54% further top up.

Allowances and differentials

Despite the consolidation of housing and other allowances, allowances make up a third of average health worker income. They make up 43% of pay received for health work by their employer, with the basic salary making up 57%. The differences between MOH and CHAM employees are not insubstantial; allowances contributing 34% of pay with MOH and 43% with CHAM, while basic salaries are the same. Allowances are more important to rural than urban staff, contributing 44% and 37% respectively to total income.

The types of allowances paid are many, but the major ones are within incentive schemes, for teaching and training, as part of relief schemes and as rural/transport allowances, and are received more often by the more senior staff.

[4] Average annual salaries of other public workers within the health workers grade are 52% lower than that of health workers Due to salary top-up implemented in 2005.

The basic salary is higher than found in Ghana (where it is 43% in mid-level workers) but similar in Zambia. As in other countries, allowances maintain or increase the differential income between cadres.

The key issue here is the distortionary effect of allowances on basic work. Allowances make up such a large part of the pay that they are pursued to the detriment of mainstream duties. A reduction in the importance of these allowances, which take staff away from front line patient services will help to reduce absenteeism and promote patient care. A further round of consolidation is necessary, with allowances that take staff away from the bedside and the clinic transferred to the basic salary. Relief and locum schemes have helped to fill the vacancy gap in the short term. They can be phased out when staffing levels improve. The transfer of allowances from these schemes and training will move 29% of pay to basic salary bringing basic pay to 86% of remuneration and allowances to 14%. The remaining allowances would relate to tutor supplements, performance related incentives schemes and rural postings.

Remuneration and performance

The study has not measured work sensitive financial incentives, except that some staff have received an incentive scheme allowance of 17,000 a month. Further evidence is available from the locum and relief scheme and from the staff appraisal studies. Most literature suggests that financial incentive schemes are not that effective, are difficult to manage well, and have hidden disincentives lurking in the background. Its introduction as a way of stimulating a staff appraisal scheme that attracts conscientious effort, however, is probably worth considering (see the report on staff appraisal schemes).

Remote areas

The differences in health workers monthly households incomes between government and CHAM/private health sectors in particular CHAM of around 28% with CHAM/private health workers earning more could be one of the reasons explaining the brain drain from government to CHAM/private health sector. The public health sector in Malawi faces serious brain drain of health workers in particular medical doctors and nurses migrating to CHAM/private sector and abroad. It should be noted that this internal brain drain has not reduced the vacancy rates in CHAM institutions to a lower level than in MOH institutions. But rural, rather than urban, MOH institutions do face high vacancy levels. One way of improving rural MOH staffing levels would be rectify the differences in incomes between these two sectors in rural areas by equalizing health

workers incomes with those of CHAM. Of course the private for profit sector will continue to enjoy higher perks than public and CHAM but such differences should be minimized to below 10%. Such a small difference will make monetary incentives in the private for profit health sector not attractive hence contribute to reducing internal movement of health workers.

The expenditure results are surprising. Education and indeed other living costs in rural areas are lower than in urban areas. In terms of schooling, this may be because staff do not send their children to boarding schools but use the local schools, and maybe compromise the education of their children. Further analysis is needed to understand the dilemmas staff experience with the provision of good education for their children. A key finding is that rural placements are less not more expensive than urban ones. Food, housing and even clothing are cheap. In all respects the cost of living for health staff is less in rural than urban areas.

The literature is quite clear. Remote area financial, and indeed other incentives, do not work to attract staff. The way to improve remote postings seems to be multisectoral – we need good schools, shops, roads and other amenities to attract staff in all sectors, not just the health sector. In the meantime the allowances provided to CHAM staff could be used for MOH staff working in similar remote areas.

Conclusions

This study has revealed that average annual household income of health workers is higher than their annual average household expenditures and even higher than the general population annual average household expenditures. Health workers incomes are also higher than the urban cost of living index but have not kept pace with price inflation. This implies that health workers households have a better welfare than the general population. Secondly, this study has shown that the basic salary is below the cost of living especially in urban areas in particular for government health workers and slightly above the cost of living index in CHAM/private health sector. This implies that these salaries are still insufficient to reduce the distraction of informal work and needs to be increased by a further 54% in order to encourage health workers to dedicate their time fully to providing health care. Thirdly, the contribution of allowances (in particular some training allowances which are often supply induced) to salary needs to be reduced from 43% to 14% so as to eliminate the disincentives to providing direct patient care. Part of the allowances is composed of relief and locum scheme allowances that can be phased out as staff levels improve. The training allowances can be stopped with a further effort of salary consolidation. The rural

allowances can be enhanced in MOH institutions to mirror those offered in CHAM institutions. Finally, health workers in rural areas spend less than urban health workers on almost all items and as such high cost of living in rural areas is not a major factor explaining non retention of health. It is therefore proposed that a multisectoral approach is needed in order to make remote areas more attractive to health workers and this requires pan-government action.

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